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**“A STUDY OF CUSTOMER RELATIONSHIP
MANAGEMENT IN MOBILE PHONE SERVICE
PROVIDING COMPANIES IN THE STATE OF
GUJARAT”**

THESIS

**SUBMITTED TO
SAURASHTRA UNIVERSITY
FOR THE AWARD OF THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN MANAGEMENT
UNDER THE FACULTY OF COMMERCE**

BY

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MARCH - 2010

CERTIFICATE

This is to certify that the thesis titled "A STUDY OF CUSTOMER RELATIONSHIP MANAGEMENT IN MOBILE PHONE SERVICE PROVIDING COMPANIES IN THE STATE OF GUJARAT" submitted by Mr. Manish V. Dhamecha for the award of the Degree of Doctor of Philosophy in Management under the Faculty of Commerce is based on the original research work carried out by him under my supervision and guidance.

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DECLARATION

I, hereby declare that the thesis titled "A STUDY OF CUSTOMER RELATIONSHIP MANAGEMENT IN MOBILE PHONE SERVICE PROVIDING COMPANIES IN THE STATE OF GUJARAT" submitted for the award of the Degree of Doctor of Philosophy is my original work and no degree or diploma has been conferred upon me before either by this university or any other university for this work.

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Date : /03/2010

Place: Rajkot

Manish Dhamecha

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LIST OF ABBREVIATIONS

AC	Authentication Centre
ADC	Analog Digital Converter
AGR	Adjusted Gross Revenue
AMPS	American Mobile Phone System Advanced Mobile Phone Service
ARPU	Average Revenue Per User
ATM	Asynchronous Transfer Mode
BSC	Base Station Controller
BSNL	Bharat Sanchar Nigam Limited
BSS	Base Station Subsystem
BTS	Base Transceiver Station
CAGR	Compounded Annual Growth Rate
CDMA	Code Division Multiple Access
CEPT	Conference of European Posts and Telegraphs
CRM	Customer Relationship Management
DCS	Distributed Control System
DEL	Direct Exchange Line
DLC	Digital Loop Carrier
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization

eCRM	Electronic Customer Relationship Management
EIR	Equipment Identification Register
ETSI	European Telecommunication Standards Institute
FCC	Federal Communication Commission
FDI	Foreign Direct Investment
GMSC	Gateway Mobile Switching Centre
GSM	Groupe Speciale Mobile Global System for Mobile
HLR	Home Location Register
HWL	Hutchison Whampoa Limited
ILD	International Long Distance Service
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
IPLC	International Private Leased Circuit
IP-VPN	Internet Protocol – Virtual Private Network
ISD	International Subscriber Dialing
ISDN	International Subscriber Dialing Network
ISP	Internet Service Provider
JDC	Japanese Digital Cellular
MCC	Mobile Country Code

MHz	Mega Hertz
MNC	Mobile Network Code
MoU	Memorandum of Understanding
MPLS	Multi Protocol Label Switching
MPS	Mobile Phone Service
MPSPC	Mobile Phone Services Providing Company
MS	Mobile Station
MSC	Mobile Switching Centre
MSIC	Mobile Subscriber Identification Code
MTNL	Mahanagar Telephone Nigam Limited
NIXI	National Internet Exchange of India
NLDS	National Long Distance Services
NMSS	Network Management and Surveillance System
NMT	Nordic Mobile Telephony
NSS	Network Switching Subsystem
OFC	Optical Fibre Cable
OMC	Operation and Maintenance Centre
PAT	Profit After Tax
PBT	Profit Before Tax
PCO	Public Call Office
PCS	Personal Communication System

POP	Post Office Protocol
PSTN	Public Switched Telephone Network
PSU	Public Sector Undertaking
PTIC	Public Tele-Info Centre
RLU	Remote Line Unit
RSU	Remote Subscriber Unit
SACFA	Standing Advisory Committee on Radio Frequency Allocation
SDCA	Short Division Charging Area
SIM	Subscriber Identity Module
SMS	Short Message Services
SSO	Secondary Switching Area
STD	Subscriber Trunk Dialing
TACS	Total Access Communication System
TDSAT	Telecom Dispute Settlement and Appellate Tribunal
TGN	Tyco Global Network
TMSI	Temporary Mobile Subscriber Identification
TRAI	Telecom Regulatory Authority of India
VLR	Visitor Location Register
VSAT	Very Small Aperture Terminal
VSNL	Videsh Sanchar Nigam Limited

WLL	Wireless Loop Connection
WPC	Wireless Planning Commission

CHAPTER – 1
RESEARCH METHODOLOGY

CHAPTER – 1

RESEARCH METHODOLOGY

CONTENTS OF THE CHAPTER

1. INTRODUCTION
2. TITLE OF THE PROBLEM
3. OBJECTIVES OF STUDY
4. REVIEW OF EXISTING LITERATURE
5. RESEARCH DESIGN
 - UNIVERSE OF STUDY
 - SAMPLING
 - DATA SAMPLING
 - HYPOTHESIS
6. SCOPE OF STUDY
7. OUTLINE OF CHAPTER PLAN
8. LIMITATIONS OF STUDY

CHAPTER – 1

1. INTRODUCTION

Mobile Phone Services refer to services which enable an individual to communicate voice, data pictures etc even if individual being mobile. It was started in 1940 in USA and in 1950 in Europe but it has drawbacks like heavy weight phone, poor quality of voice, limited mobility etc. Mobile Phone Services started in Gujarat in the year 1997. Presently it is having total customer base of 2.2 million. Mobile Phone Services Providing Companies refer to the companies engaged in providing services of mobile phones. Presently there are six companies operating in Gujarat.

The concept of customer relationship management is recent and it focuses on building and maintaining the relationship with the customers. This concept is widely used in service sectors like banks. Basically it is related with marketing concept of management because it emphasizes on retaining current customer and building lasting relationship with them. It involves creating, maintaining and enhancing strong relationship with customer and employees of the company and stakeholders. It requires that all the departments of the company work together as a team to serve the customer. It also involves building relation with the customers at many levels like economic, social, technical and legal resulting high customer loyalty.

The researcher has tried to find out the level of services in Mobile Phone Services Providing Companies in the state of Gujarat through this research study. The searcher has also tried to find out the ways and means employed by Mobile Phone Services Providing Companies for maintaining

good customer relationship and suggested various means to enhance customer loyalty and build up strong relationship.

2. TITILE OF THE PROBLEM

The title of the research work is **“A STUDY OF CUSTOMER RELATIONSHIP MANAGEMENT IN MOBILE PHONE SERVICES PROVIDING COMPANIES IN THE STATE OF GUJARAT”**

3. OBJECTIVES OF STUDY

No work is started without objective. Objective is the base for any work. This research work is also having some objectives. The present research work has been under taken keeping in view the following objectives:

- To find out level of services for various parameters of Mobile Phone Services provided by the Mobile Phone Services Providing Companies in the state of Gujarat.
- To study the concept of Customer Relationship Management.
- To find out ways and means employed by Mobile Phone Services Providing Companies for maintaining good customer services.
- To suggest various means to enhance customer loyalty and build up strong relationship with customers by providing good services.
- To document the differences in relation to parameters of mobile services provided by various mobile phone services providing companies and agreement level of respondents regarding them.

4. REVIEW OF EXISTING LITERATURE

- 1) Nevin¹ has pointed out that the terms customer relationship management and relationship marketing have been used to reflect variety of schemes and perspective. Some of these themes offer a narrow functional marketing perspective while others offer a perspective that is broad and somewhat paradigmatic in approach orientation.
- 2) Bickert² has noted that a narrow perspective of customer relationship management is database marketing emphasizing the promotional aspects of marketing linked to database efforts.
- 3) Beery³ has presented customer relationship management in some broader and strategic view point. He stressed that attracting new customers should be viewed only as an intermediate step in the marketing process. Developing closer relationship with these customers and turning them into loyal ones are equally important aspects of marketing.
- 4) Sheth and Parvatiyar⁴ observed that developing customer relationships has historical antecedents going back into the pre-industrial era. Much of it was due to direct interaction between producers of agricultural products and their customers. Similarly artisans often developed customized products for each customer. Such direct interaction led to relational bonding between the producer and the customer.
- 5) Grosby and Stephens⁵ remarked that the de-intermediation process and consequent prevalence of customer relationship management is due to the growth of the service economy. Since services are typically

produced and delivered at the same institution, it minimizes the role of the middlemen. A greater emotional bond between the service provider and service user also develops the need for maintaining and enhancing the relationship.

- 6) Sheth and Sisodia⁶ noted that in the of ever changing customer expectations, cooperative and collaborative relationship with customers seem to be the most prudent way to keep track of their changing expectations and appropriately influencing it.
- 7) Evans and Laskin⁷ suggested four stage customer relationship management process frameworks comprising of sub processes customer relationship formation process, relationship management and governance process, relationship performance evaluation process and customer relationship management evolution and enhancement process.
- 8) Reichheld⁸ established that building closer relationship with customers resulted in better returns to the companies through increased use of company services by loyal customers, charging of price premiums for customized services and referrals by satisfied customers that brought new customers.
- 9) Gronholdt⁹ stressed the importance of customer relationship management in maintaining and increasing customer satisfaction in order to create greater loyalty and thus enhance business performance for the organization.

- 10) Buttle¹⁰ has remarked that customer relationship management has been enabled by advances in networks, databases and communication technology.

5. RESEARCH DESIGN

This study is based on primary as well as secondary data. Primary data has been collected by interview and studied questionnaires while secondary data has been collected by published sources. Researcher has contacted 700 mobile phone users representing various Mobile Phone Services Providing Companies. Further, the researcher has used scientific scaling techniques according to the need and objectives of the study. Beside this, researcher has applied sophisticated tools and techniques for hypothesis.

A) UNIVERSE OF STUDY

Universe of study is made up of six mobile phone service providing companies and their customers in the state of Gujarat.

B) DATA SAMPLING, COLLECTION AND ANALYSIS

This research study is mainly based on primary data and supported by the secondary data. The main source of primary data is mobile phone users. The secondary data has been collected from records and documents.

The researcher had prepared structured questionnaire for the collection of primary data. The researcher has personally and through post contacted the mobile phone users for filling up the questionnaire across the state. The

researcher had tried to get filled 700 questionnaires and out of these 510 questionnaires received perfectly filled up. Thus the response rate is 73 %.

The researcher has applied various types of statistical tools and techniques for the analyses of data according to the need of the study. These include tabulation, calculation of frequency, percentage, averages, weightage average, combined average, rank, single factor ANOVA F – Test etc.

D) HYPOTHESIS

Following hypothesis have been decided to study further to have understanding of the verification and applicability of the study,

1. **H₀**: There would be no significant difference in relation to the operating network services provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the operating network services provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

2. **H₀**: There would be no significant difference in relation to the affectivity of pricing strategy of Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the affectivity of pricing strategy of Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

3. **H₀**: There would be no significant difference in relation to the Mobile Phone Services Providing Companies having wider network coverage than other companies and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the Mobile Phone Services Providing Companies having wider network coverage than other companies and agreement level of respondents regarding it.

4. **H₀**: There would be no significant difference in relation to the efficient information sharing process and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the efficient information sharing process and agreement level of respondents regarding it.

5. **H₀**: There would be no significant difference in relation to the high brand loyalty of customers and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the high brand loyalty of customers and agreement level of respondents regarding it.

6. **H₀**: There would be no significant difference in relation to the effective handling during peak load and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the effective handling during peak load and agreement level of respondents regarding it.

7. **H₀**: There would be no significant difference in relation to the good customer services and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the good customer services and agreement level of respondents regarding it.

- 8.** **H₀:** There would be no significant difference in relation to the professional approach of the Mobile Phone Services Providing Companies for services and agreement level of respondents regarding it.
- H₁:** There would be significant difference in relation to the professional approach of the Mobile Phone Services Providing Companies for services and agreement level of respondents regarding it.
- 9.** **H₀:** There would be no significant difference in relation to the comparative low cost and agreement level of respondents regarding it.
- H₁:** There would be significant difference in relation to the comparative low cost and agreement level of respondents regarding it.
- 10.** **H₀:** There would be no significant difference in relation to the very good billing system and agreement level of respondents regarding it.
- H₁:** There would be significant difference in relation to the very good billing system and agreement level of respondents regarding it.
- 11.** **H₀:** There would be no significant difference in relation to the bill collection facility provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.
- H₁:** There would be significant difference in relation to the bill collection facility provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

6. SCOPE OF STUDY

The present research study is a macro level study. The scope of this research study is as under:

a) Functional Scope:

The functional scope of this research study is to find out the level of services in Mobile Phone Services Providing Companies in the state of Gujarat, ways and means employed by Mobile Phone Services Providing Companies for maintaining good customer relationship and suggest various means to enhance customer loyalty and build up strong relationship.

b) Geographical Scope:

The area of Gujarat state is geographical scope for this research study.

7. CHAPTER PLAN

This research report has been divided in to the six chapters. The researcher has prepared and presented these chapters in sequentially arranged form. The chapters are as under:

CHAPTER – 1: RESEARCH METHODOLOGY

CHAPGER – 2: CONCEPT OF CUSTOMER RELATIONSHIP
MANAGEMENT

CHAPTER – 3: TELECOM HISTORY & PROFILE OF MOBILE PHONE
SERVICES PROVIDING COMPANIES

CHAPTER – 4: OVERVIEW OF TELECOMMUNICATION AND MOBILE
PHONE SERVICES INDUSTRY

CHAPTER – 5: DATA ANALYSIS OF RESPONSES OF CUSTOMERS

CHAPTER – 6: FINDINGS, CONCLUSIONS AND SUGGESTIONS OF THE
STUDY

8. LIMITATIONS OF STUDY

The present research work is having certain limitations which are given below:

- 1) The presently study is limited to only 510 respondents of Gujarat State.
- 2) It does not include all the mobile phone users of each Mobile Phone Services Providing Companies of Gujarat state so the interpretations and findings of this study can not be generalized without further supporting researches.
- 3) For evaluating and testing the items due care was taken for clarity and simplicity of the language and still the data of this study depends highly upon the respondents' understanding of the items as well as their opinions, telling and attitude towards disclosure and own criteria for satisfaction.
- 4) Some of respondents may not have been able to either describe their views accurately or may not have responded honestly to some question which are mainly close ended questions.
- 5) Unfavorable attitude of a respondent towards an important aspect of disclosed item may be overriding his attitudes towards all other aspects of disclosure.

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CHAPTER – 2

CONCEPT

OF

CUSTOMER RELATIONSHIP

MANAGEMENT

CHAPTER – 2

CONCEPT OF CUSTOMER

RELATIONSHIP MANAGEMENT

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CHPATER – 2

1. INTRODUCTION

The concept of customer relationship management is important. Due to development in communication and transportation technologies world has become a small place for business. Moreover globalization policy of government has made business more competitive. Due to liberal economic and import – export policies, barriers of border have been eliminated. Production and supply are very high compare to demand, giving customer various options to select. In above circumstances customer has become a king in the market. He may switch over to other producer or supplier if he does not get satisfaction from present one. The cost of product or service is similar amongst the producers or suppliers due to similarity in technology and global market. Organizations are spending lot of money on marketing of product or service. The cost of distribution including amount paid to channel members is also very high. Hence the cost of acquiring a customer is very high. On the basis of facts and figures it is found and experienced by the organizations that the cost of retaining the customer is very less compare to acquiring a new customer. Organizations have realized the importance of acquiring and retaining the customers. Customer can be acquired easily by marketing and promotional tools but is very difficult to retain them in this competitive market environment.

Customer can be retained by providing the best after sales services. In majority of cases organizations actuate sales and fail to provide after sales services resulting loss of customers. In such a scenario, providing the best after sales services is of prime importance. The customers can be retained by

providing them the best services and maintaining good relationship with them. The focus area of study of this chapter is customer relationship management. What is customer relationship management?, What are the goals of CRM?, Approaches to CRM, Principles of CRM and CRM Model are discussed in following portions of this chapter.

2. MEANING OF CUSTOMER RELATIONSHIP MANAGEMENT.

There are many definitions having narrow and broad sense. The concept is recent and it focuses on building and maintaining the relationship with the customers. This concept is widely used in service sectors like banks, insurance companies, capital market services providing companies, hospitals etc. Basically it is related with marketing concept of management because it emphasizes on retaining current customer and building lasting relationship with them. It involves creating, maintaining and enhancing strong relationship with customer and employees of the organization and stakeholders. It requires that all the departments of the organization work together as a team to serve the customer. It also involves building relation with the customers at many levels like economic, social, technical and legal resulting high customer loyalty.

Definitions of Customer Relationship Management are as under,

“Customer Relationship Management is customer retention in which variety of after-marketing tactics are used for customer bonding or staying in touch after the sale is made”¹

“Customer Relationship Management is to focus on individual or one to one relationship with the customers that integrate database knowledge with a long term customer relation and growth strategy”²

“Customer Relationship Management means marketing oriented towards strong lasting relationship with individual customer”³

Going through the above definitions, it is understood that the approach of defining customer relationship management is narrow. The first definition emphasizes only on retention of customers by employing after-marketing tactics while second definition has narrow sense on database integration with a long-term customer retention and growth strategy. The third definition is having broader sense since it includes marketing. It suggests that marketing efforts should take care of relationship of organization with customers that should be strong and long lasting with individual customer.

Having discussed above three definition it is found that more definitions are required to be discussed with broad sense of customer relationship management since above definitions are having narrow sense.

“Customer Relationship Management is a comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for the organization and the customers”⁴

“Customer Relationship Management is an organization wide business strategy designed to reduce costs and increase profitability by solidifying customer loyalty”⁵

“Customer Relationship Management is strategy used to learn more about customers’ needs and behaviors in order to develop strong relationship with them”⁶

Above definitions are having broad sense since they co-relate customer relationship management with business strategy. First definition given by Sheth, Parvatiyar and Shainesh, deals with the process and strategy

of acquiring, retaining and partnering of customers. It says that the purpose of customer relationship management is to create value for the customer and organization. Value for customer and organization can be created by maintaining good relationship with customers. Second definition emphasizes on solidifying customer loyalty by adopting organization wide customer relationship management strategy. The very purpose of solidifying customer loyalty via adoption of organization wide customer relationship management strategy is to reduce cost and increase profitability. If organization builds strong relation with customers, the customers become loyal to the organization and they do not switch over to other organization. Hence, by retaining existing customers cost of acquiring new customers can be eliminated.

3. GOALS OF CUSTOMER RELATIONSHIP MANAGEMENT.

Organization works for specific goal. The goal may be of maximizing profit. The business organization over period of time learnt that the focal point of business is customer. Customer is a hub around which all the business activity clusters. Any goal of the business organization can only be achieved through satisfying customers. Customer can be satisfied by managing good relationship with them. However, customer satisfaction is not only goal of customer relationship management. The same can be elaborated as below,

1) Providing Better Customer Service:

Any business organization wishes to provide better service to customer. The simple reason for providing better service is to retain the customer with the organization for longer period of time. As we are well known that the market is very competitive and there is chance of switch over of

customer to the rival of the organization, in this scenario customer relationship management provide better service to the customer, which protect the churn. The first goal of customer relationship management can be said to be providing better customer service.

2) Making Call Center More Efficient:

If organization has adopted customer relationship management strategy positively, the customer will be getting better service as discussed above. The customer will be satisfied with the product or service offered by the organization. As a result of growth in communication technologies, the concept of call center has been developed. The call center simply means that center listening customer query and providing solution of the same on line. Due to adopting customer relationship management strategy, customer will be well informed about the product and services, hence he will be having fewer queries. In this condition call center can easily and efficiently be managed. The goal of customer relationship management may be making call center more efficient and effective.

3) Cross Selling Product More Efficiently:

Third goal of customer relationship management can be said to be cross sell or up sell product more efficiently. Cross sell is one of the smartest methods of growing revenues. In today's business environment acquiring new customers has become extremely expensive because of very high customer solicitation activity and very low response rates to customer acquisition efforts. Cross sell, therefore, is a much easier and smarter method of increasing revenues. The key to effective cross sell is to understand the

needs of your customers, and then tailoring your product offering to suit the needs.

Whether you want to sell additional lending products to your banking customers or value added services to your telecom customers our cross sell solutions will ensure that you reach the right customers at the right time with the right offer. Thus, being close to the customer through customer relationship management, cross sell of product become more effective.

4) Helping Sales Staff to Close Deals Faster:

Organization wants to close its sales deals faster due to release of its working capital from finished goods. The profit may be increased with faster rotation of working capital in the organization. Customer Relationship Management helps sales staff to close deals faster. It means that the sales of product become fast. Customers are well known to the organization and organization also knows the customers. Being in continuing contact with customer through customer relationship management process, organization learns lot many things from the customers. Such learning includes taste and choice of customer, financial position of customers, propensity to purchase a product etc. Based on such learning organization can design effective sales program which helps it to close the deals faster.

5) Simplifying Marketing and Sales Procedures:

One of the goals of customer relationship management is simplifying the procedures of marketing and sales. Marketing procedure involves identifying and satisfying customer needs, while sales procedure involves order processing i.e. actuating sales. Customer relationship management approach brings customers close to the organization. Such closeness helps

the organization to identify customer needs easily. Organization needs not go for survey for identifying customer needs, which is complicated and costly task. Sales procedures also can be simplified due to adopting customer relationship management strategy since the customer has already having good relationship with organization.

6) Discovering New Customers:

Customer relationship management works as word of mouth advertising. Existing customers share their experiences of product of service of particular organization with their friends and relatives. Such sharing of experiences works as advertising, which in turn discovers new customers for the organization. The goal of customer relationship management may be of discovering new customers. Discovering new customers increase sales.

7) Increasing Sales Revenue:

As we all are aware that the ultimate goal of any business is to generate sales revenue by selling the product or providing service to the customers. Hence, any activity organization does which finally reaches this goal. The goal of customer relationship management may be of increasing sales revenue. As discussed above customer relationship management helps in discovering new customers, it also helps to cross sell or up sell the products, it in turn increases the sales revenue of the organization.

8) Lowering Distribution Cost:

With the development in communication technologies, distribution of product has become easy. The goal of customer relationship management may be of lowering distribution cost. This goal or objective can be achieved by implementing CRM software. The customers can contact the producers

directly by Internet and can inquire about the product and services available with the organization. Rather, organization puts various types of products and services offered on its web site. Order processing and sales through Internet eliminates all the intermediaries resulting saving of commission earlier paid to intermediaries. Implementation of CRM software not only helps in sales but it also helps in getting responses of the customers about their experiences of product of services provided by organization.

9) Streamlining Order Processing:

The goal of customer relationship management can be streamlining order processing. Customers stay with the organization for longer period of time due to adopting CRM strategy by the organization. Long period relationship creates trust between them. This bondage of trust helps the organization in streamlining order processing.

10) Managing Inventory Easily:

Inventory management refers to maintaining adequate stock of products in the shops. It can be maintained by estimating future demand and supply of product. Supply can be easily estimated since the shop-keeper himself place the order. He may ask for urgent delivery of goods or may request to send the goods late as per his convenience. But the demand of goods is out of his reach. He cannot easily estimate the demand of goods or even he cannot pressure the customers to purchase particular product from his shop. In such scenario, customer relationship management strategy is adopted for easy management of inventory.

11) Reducing Additional Customer Acquisition Cost:

Customer relationship management may be adopted for reducing customer acquisition cost. Customer becomes loyal by staying longer period of time with the organization. Strong loyalty prevents customers to switch over to the competitors. Hence, organization does not require to acquire new customers if the demand is full. In this condition, organization can reduce additional customer acquisition cost.

12) Selecting Customers for Various Programs:

Organization may be implementing various programs for customers. Such programs help organization in building long lasting relationship with the customers. The goal of customer relationship management may be of selecting customer for such programs. Such programs may include calling loyal customers in meeting organized at resorts and playing various games and rewarding the winners. Such programs may contain session giving information about the organization, its strategy, future plans and efforts made for customer satisfaction.

13) Individualizing Market Offering:

The customer has become king of market due to growing competition in market. In such market condition, it has become compulsory for the organization of satisfy each and every customer who purchases product or service from the organization. If a customer feels that he is not satisfied with the product or service offered by the particular organization, he will shift to the other competitor organization providing similar product or service. To overcome this situation and to keep the customer with organization for long period of time organization needs to individualize its market offering. The

organization can individualize market offering by adopting customer relationship management, hence goal of CRM may be individualizing market offering.

14) Building Customer Loyalty:

The goal of customer relationship management is building customer loyalty. The simple of building customer loyalty is to keep customer long time with the organization and eliminate the cost of acquisition of new customer. In present competitive environment, organization can only survive if it controls the cost because there is no control over revenue. Loyal customer also works as word of mouth advertisement, which helps organization in saving advertisement cost and increasing sales without extra sales promotion efforts.

15) Developing New Market / Product:

It is said that entrepreneur earns profit because he / she innovates some thing. The organization cannot earn profit if it does not innovate and offer something new to the customers. The goal of customer relationship management is to develop new market or product. The organization gets information from the customer about new product and market if it adopts customer relationship management strategy. Satisfied customers give true and friendly suggestions about product or service to the organization. The organization can develop new product or market considering feedback given by the existing customers.

4. APPROACHES TO CUSTOMER RELATIONSHIP MANAGEMENT.

Customer relationship management is comprehensive sales and marketing approach to build long term customer relationships and improving business performance. There are two approaches of customer relationship management which are discussed below,

1) Traditional Approach:

Traditional approach of customer relationship management, it does not use modern technological tools. It has following components,

1. Customer contact by telephone, mail or personal
2. Personal selling
3. After sales services
4. Complaint handling
5. Account management
6. Customer care
7. Customer satisfaction

Going through the above component of traditional approach of customer relationship management, we can understand that this approach is no more useful in today's environment since the systems of selling has been changed from personal selling to web-sales with the change in technology used in production and marketing.

2) Modern Approach:

Modern approach of customer relationship management is also known as Web-enabled and Integrated Approach of customer relationship management. This approach uses highly sophisticated technological tools for developing and maintaining good relationships with the customers. The

organization spend huge amount of money on information systems. This approach uses information systems of the organization for customer relationship management. The elements of modern approach of customer relationship management are as under,

- 1 Customer Information System
- 2 Customer Database
- 3 Electronic Point of Sale Sales Force
- 4 Automation of Customer Support Processes
- 5 Call Centres
- 6 Systems Integration
- 7 Life Time Value of a Customer.

Thus modern approach of customer relationship management can also be called web-enabled and integrated approach since it uses customer information system and customer database. It also suggests the automation of customer support process and call centres. Thus the processing of transaction and feedback becomes very fast in this approach compare to traditional approach of customer relationship management.

5. PRINCIPLES OF CUSTOMER RELATIONSHIP MANAGEMENT.

As we have discussed in the definition portion of this chapter that customer relationship management believes in building long term relationship with the customers. It also targets mutually beneficial profitable relationship with the individual customers and groups of customers. There are several principles of customer relationship management which should be followed by the organization, are discussed below,

1) Differentiate Customers:

This principle of customer relationship management suggests that all customers are not equal. Hence, they are to be recognized and rewarded disproportionately. Customers can be differentiated based on following parameters,

1. Sensitivities, Tastes, Preferences & Personalities.
2. Lifestyle and Age
3. Cultural Background and Education
4. Physical and Psychological Characteristics

2) Differentiate Offerings:

Every individual customer likes individual customized offerings. The differentiation may be made between low value customer and high value customer as mentioned below

1. Low value customer requiring high value offerings
2. Low value customer with potential to become high value in near future
3. High value customer requiring high value service
4. High value customer requiring low value service

3) Keeping Existing Customers:

Acquiring a new customer is 5 to 10 times costlier than retaining existing customer. The customer can be retained by improving level of satisfaction of customer gained from product or service offered by the organization. Grading customers from very satisfied to very disappointed shall always help the organization in improving its customer satisfaction levels and

scores. Improvement in level of satisfaction of customer always leads to retention of customer with the organization.

4) Maximize Life Time Value:

This principle of customer relationship management tells to maximize life time value of customer by identifying life-stage and life-event trigger points of customer. The organization can maximize share of the purchase potential by employing up-selling and cross-selling techniques. This helps the organization in maximize life time value of customer.

5) Increase Loyalty:

Increasing loyalty means keeping customer longer period of time with the organization. It is said that the loyal customers are more profitable. This principle of customer relationship management refers to the same logic and suggests the organization to increase the level of loyalty in the customers. Customer should be advocate for the organization and its product or service. The organization has to invest in terms of its product and service offerings to its customers. It has to innovate and meet the very needs of its customers so that they remain as advocates on the loyalty curve. Referral sales invariably are low cost high margin sales. It has also the implication of being not one time sales.

6. THE BASIC SMALL BUSINESS CRM MODEL.

The basic customer relationship management model for a small business or any business for that matter contains a set of seven basic components. The following discusses each component:

1. A database for customer activity:- Ideally the database should contain information about the following:

a) Transactions - including a complete purchasing history with accompanying details

b) Customer contacts from multiple channels and contexts

c) Descriptive information for segmentation and other data analysis purposes

d) Response to marketing stimuli - whether or not the customer responded to a direct marketing initiative, a sales contact, or any other direct contact

e) This data should also be collected over time.

2. Analyses of the database:- For many year customer databases have been analyzed with the intent to define customer segments. However, taking a larger number of customers and forming groups or segments presumes a marketing effort towards an average customer in the group. With the range of marketing tools available that can reach customers one at a time through personalized messages, there is less need to consider the usual market segmentation schemes. Instead there is an increase in attention being paid to understanding each customer, of the database, and what he or she can deliver to the company in terms of profit. The idea is that each customer of the database should be analyzed in terms of current and future profitability to the firm.

3. Given the analyses, decisions about which customers to target:-

Looking at past and current purchases a model of the profitability of a customer can be used by the marketing manager to target specific customers. The profit that a customer has produced for the firm is the sum of the margins of all products purchased over time less the cost of reaching that customer. These costs include any that can be broken down at the individual customer level such as direct mail, sales calls etc. Cross-selling is also becoming of interest to marketers, with complementary products being displayed on the same physical page in a hard-copy catalogue or virtual page on a Web site.

4. Tools for targeting the customers:- Once the construction and

analysis of the customer information contained in the database has been completed, the next step is to consider which customers to target depending on the firms marketing programs. This could be through segmentation, with the customers in the most desired segments targeted first. Individual customers could be targeted that are projected to be profitable for the company. The goal is to use the customer profitability analysis to separate customers that will provide the most long-term profits from those that are currently hurting profits. Mass marketing is useful for generating awareness, but is poorly-suited for CRM due to its impersonal nature. Rather than talking at customers companies are urged to talk to their customers. In particular, 1-to-1 marketing has come to mean using the Internet to facilitate individual relationship building with customers.

5. How to build relationships with the targeted customers:- The overall goal of relationship programs is to deliver a higher level of customer satisfaction than competing firms deliver. Research has shown that there is a strong, positive relationship between customer satisfaction and profits. Relationship programs include:

a) Customer service: With more choices available for customers today, customer service must receive a high priority within the company. Any contact or "touch point" that a customer has with a firm is a customer service encounter and has the potential to gain repeat business and help CRM or have the opposite effect.

b) Loyalty/Frequency Programs: Loyalty programs provide rewards to customers for repeat purchasing. However, a recent McKisey study identified the three leading problems with these programs: they are expensive, mistakes can be difficult to correct as customers see the company as taking away benefits, and also there are large questions about whether they work to increase loyalty or average spending behavior. A further problem is that due to the ubiquity of these programs, it is increasingly difficult to gain competitive advantage.

c) Customization: This notion implies the creation of products and services for individual customers, and not simply communicating with them as with 1-to-1 marketing.

d) Community: The Internet is allowing both online and offline businesses to build a network for exchanging product-related information and to create

relationships between the customers and company or brand. The goal is to take a prospective relationship with a product and turn it into something more personal. This allows the manager to build an environment which makes it more difficult for the customer to leave the "family" of other people who also purchased this product.

6. Privacy issues:- A CRM strategy depends upon a database containing customer information and the analysis of this data to achieve more effective targeting of marketing communications and relationship-building activities. With the increase in the popularity of the Internet, many consumers and advocacy groups are concerned about the amount of personal information necessary to enable this delivery. The privacy issues center around how much control Web surfers should have over their own information.

7. Metrics for measuring the success of the CRM process:- As more attention is paid to CRM, the traditional metrics used by managers to measure the success of their products and services in the marketplace have to be updated. Some of the CRM-based measure in both Web and non-Web based businesses are as follows:

- a) Customer acquisition costs
- b) Conversion rates (from lookers to buyers)
- c) Retention /churn rates
- d) Same customer sales rates

e) Loyalty measures

f) Customer share or share of requirements (the share of a customer's purchases in a category devoted to a brand).

All of these measures imply doing a better job through acquiring and processing internal data and focusing on how the company is performing at the customer level.

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CHAPTER – 3

TELECOM HISTORY

AND

PROFILE OF

MOBILE PHONE SERVICES

PROVIDING COMPANIES

CHAPTER – 3

TELECOM HISTORY AND PROFILE

OF MOBILE PHONE SERVICES

PROVIDING COMPANIES

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- 5. Reliance Infocomm Limited (Reliance)**
- 6. Bharat Sanchar Nigam Limited (BSNL).**

CHAPTER – 3

1. INTRODUCTION

This chapter is divided into two major portions namely, telecom history and profile of Mobile Phone Services Providing Companies. The idea behind discussing telecom history is to know about the inventions made in the field in the chronological order. In second portion of the chapter profile of the companies engaged in the business of Mobile Phone Services is discussed. The aim of discussing profile of Mobile Phone Services Providing Companies is to have information about the companies, their business, vision, mission, objectives, growth plans, services offered, etc.

2. TELECOM HISTORY

History of telecommunication technology is mentioned below in chronological order. We can have idea of major invention made in the technology with the name of person and the year in which invention was made.

1842: Wireless by conduction

1843: Early electromagnetic research, wireless by induction

1865: Induction and Dr. Loomis

1879: D.E. Hughes and the first radio-telephone reception

1880: The photo phone and the first voice radio-telephone call

1880 to 1900: Radio development begins in earnest

1910: The first car-telephone

1924: The first car-mounted radio-telephone

1937: Early conventional radio-telephone development

1946: The first commercial American radio-telephone service

1947: Cellular systems first discussed

1948: The first automatic radio telephone service

1969: The first cellular radio system

1973: The Father of the cell phone

1978: First generation analog cellular systems begin

1980: Growth of Japanese cellular development

1981: NMT - the first multinational cellular system

1982: The rise of GSM

1990: North America goes digital: IS-54

Prehistory (Birth to Bell Labs, 1924)

While puzzling over the mysteries of radio, many inventors worked concurrently on power generation, telegraphs, lighting, and later, telephone. The thorough understanding of electricity required to produce a reliable, practical radio system took a long time and happened in different phases.

In 1820, Danish physicist Christian Oersted discovered electromagnetism, the science that could help generate electrical power and, if fully understood and applied, usher in the era of telecommunication.

Michael Faraday - 1791 to 1867

In 1821 Michael Faraday reversed Oersted's experiment and in so doing discovered induction. This helped him build the world's first electricity generator. He worked on different electrical problems in the next ten years, eventually publishing his results on induction in 1831.

Joseph Henry - 1797 to 1878

In 1830 the great American scientist Professor Joseph Henry transmitted the first practical electrical signal; showing that electromagnetism could do more than just create current or pick up heavy weights, it could communicate. In a stunning demonstration in his Albany Academy classroom, Henry created the forerunner of the telegraph. While Henry did not pursue electrical signaling, he did help someone who did. And that man was Samuel Finley Breese Morse.

Samuel Morse - 1791 to 1872

In 1837 Samuel Morse invented the first practical telegraph, applied for its patent in 1838 and was finally granted it in 1848. Joseph Henry helped Morse build a telegraph relay or repeater that allowed long distance operation. The telegraph brought the country closer and eventually the world. Morse also experimented with wireless, not by passing signals through the atmosphere but through the earth and water without a cable.

Wireless by conduction

On October 18, 1842, Morse laid wires between Governor's Island and Castle Garden, New York, a distance of about a mile. Part of that circuit was under water. But before he could complete this demonstration a passing ship pulled up his cable, ending it seemed, his experiment. Undaunted, Morse proceeded without the cable, passing his telegraph signals through the water itself. This is wireless by conduction.

Over the next thirty years most inventors and developers concentrated on wire line telegraphy, that is, conventional telegraphy carried over wires suspended on poles. Few tinkered exclusively with wireless since a basic radio theory had not yet been worked out. Telegraphy, however, did produce a good understanding of wireless by induction since wires ran parallel to each other and often induced rogue currents into other lines.

Early electromagnetic research

In 1843 Faraday began intensive research into whether space could conduct electricity.

In 1864 Maxwell released his paper "Dynamical Theory of the Electromagnetic Field" which concluded that light, electricity and magnetism were all related and that all electromagnetic phenomena travelled in waves.

Induction and Dr. Loomis

In 1865, a dentist Dr. Mahlon Loomis of Virginia may have been the first person to communicate through wireless via the atmosphere. Between 1866 and 1873 he transmitted telegraphic messages at a distance of 18 miles. At one location he even flew a metal-framed kite on a metal wire, perhaps taking inspiration from Benjamin Franklin. At another location a similar kite picked up these signals and noted them with a galvanometer.

Early radio discoveries

Maxwell's 1864 conclusions were distributed around the world and created a sensation. But it was not until 1888 that Professor Heinrich Hertz of

Bonn, Germany, could produce and detect radio waves consistently and reliably.

On November 22, 1875, while working on acoustical telegraphy, a science close to telephony, Thomas Alva Edison noticed unusual looking electro-magnetic sparks.

D.E. Hughes and the first radio-telephone reception

From 1879 to 1886, London-born David Hughes discovered radio waves but was told incorrectly that he had discovered no such thing. Discouraged, he pursued radio no further.

Hughes noticed a clicking noise in his home built telephone each time he worked using his induction balance, a device now often used as a metal detector. He transmitted signals from one room to another in his house in London. But since the greatest range there was about 60 feet, Hughes took to the streets with his telephone, intently listening for the clicking produced by his clockwork transmitter, gradually diminishing until it no longer could be heard.

Alexander Graham Bell was the man who invented the telephone and made the first call on a wired telephone to Thomas Watson. Bell was also first with radio.

1888 onwards: Radio development begins in earnest

In 1888 the German, Heinrich Hertz, conclusively proved Maxwell's prediction that electricity could travel in waves through the atmosphere. Unlike

Hughes, the extensive and systematic experiments into radio waves that Hertz conducted were recognized and validated by inventors around the world.

Jagadish Chandra Bose demonstrated electromagnetic waves in 1895 "by using them to ring a bell remotely and to explode some gunpowder".

Marconi established the first successful radio system. In 1901, his radio-telegraph system sent signals across the Atlantic Ocean. Ships were the first wireless mobile platforms. In 1901 Marconi placed a radio aboard a Thorny croft steam-powered truck, thus producing the first land-based wireless mobile transmitting data, not voice.

In December 24, 1906, Reginald Fessenden accomplished the first radio band-wave communication of human speech over a distance of 11 miles, from Brant Rock, Massachusetts, to ships in the Atlantic Ocean. Radio was no longer limited to telegraph codes, no longer just a wireless telegraph, but a means of verbal communication.

The first car-telephone

From 1910 onwards, Lars Magnus Ericsson, the man who founded Ericsson in 1876, and his wife Hilda, regularly worked the first car telephone. Access was not by radio, instead there were two long sticks, like fishing rods, handled by Hilda. She would hook them over a pair of telephone wires, seeking a pair that was free. When they were found, Lars Magnus would crank the dynamo handle of the telephone, which produced a signal to an operator in the nearest exchange.

Around the same time, the triode tube was developed, allowing far greater signal strength to be developed both for wireline and wireless telephony. No longer passive like a crystal set, a triode was powered by an external source, which provided much better reception and volume.

Later, with Armstrong's regenerative circuit, tubes were developed that could either transmit or receive signals, were stable and powerful enough to carry the human voice and sensitive enough to detect those signals in the radio spectrum.

In 1919, three firms came together to develop a wireless company that one day would have a reach across the globe. Heavy equipment maker ASEA, boiler and gas equipment maker AGA and telephone manufacturer LM Ericsson, formed SRA Radio, the forerunner of Ericsson's radio division.

The first car-mounted radio-telephone

Bell Laboratories claims to have invented the first version of a mobile in 1924. It was a two-way, voice-based radio-telephone and the adjoining photograph from their site certainly seems to confirm it.

History of cellular mobile telephony: 1982 to 2001

1980 - First cellular phones began to appear

1982 - Nordic Mobile Telephony (NMT) standard

1983 - American Mobile Phone System (AMobile Phone Services) standard

1986 - Nordic Mobile Telephony (NMT) 900 MHz

1991 - Commercial launch of the GSM service

1993 - Coverage of main roads GSM services start outside Europe

1994 - Japanese Digital Cellular (JDC)

1996 - USA Personal Communications Systems (PCS)

1982 - The beginning

During the early 1980s, analog cellular telephone systems experienced rapid growth in Europe, particularly in Scandinavia and the United Kingdom, but also in France and Germany. Each country developed its own system, which was incompatible with those of others, in equipment and operation. This was an undesirable situation, because not only was the mobile equipment limited to operation within national boundaries, but also limited to the market for each type of equipment. This scenario in a unified Europe was undesirable.

The Europeans realised this early on, and in 1982, the Conference of European Posts and Telegraphs (CEPT) form a study group called the Groupe Speciale Mobile (GSM) to study and develop a pan-European public land mobile system. The proposed system had to meet certain criteria, which included:

1. Good subjective speech quality.
2. Low terminal and service cost.
3. Support for international roaming.
4. Ability to support handheld terminals.
5. Support for a range of new services and facilities.
6. Spectral efficiency
7. ISDN compatibility.

Nordic Telecom and Netherlands PTT proposed to the CEPT the development of a new digital cellular standard that would cope with the ever-burgeoning demands on European mobile networks. The European Commission (EC) issued a directive which required member states to reserve frequencies in the 900 MHz band for GSM to allow for roaming.

1986: Main GSM radio transmission techniques were chosen.

1987: September - 13 operators and administrators from 12 areas in the CEPT GSM advisory group signed the charter GSM (Groupe Speciale Mobile) MoU Club agreement, with a launch date of 1 July 1991.

The original French name Groupe Speciale Mobile was changed to Global System for Mobile communications; but the original GSM acronym remains.

GSM specifications were drafted.

1989 - 1998

1989: In 1989, GSM responsibility was transferred to the European Telecommunication Standards Institute (ETSI), and phase I of the GSM specifications was published in 1990. Commercial services started in mid 1991, and by 1993 there were 36 GSM networks in 22 countries, with 25 additional countries like South Africa, Australia and many Middle and Far East countries opting for GSM. By the beginning of 1994, there were 1.3 million subscribers worldwide.

The developers of GSM chose an unproven digital system, as opposed to the then standard analog cellular systems like AMobile Phone Services in the United States and TACS in the United Kingdom. They had faith in the advancements in compression algorithms and digital signal processors to allow the fulfillment of the original criteria and the continual improvement of the system in terms of quality and cost.

The European Telecommunications Standards Institute (ETSI) defined GSM as the internationally accepted digital cellular telephony standard.

1990: Phase 1 GSM 900 specifications were frozen. DCS adaptation started. Validation systems implemented. First GSM World congress at Rome had 650 participants.

1991: First GSM specification was demonstrated. DCS specifications were frozen. GSM World Congress at Nice had 690 participants.

1992: January - The first GSM network operator was Oy Radiolinja Ab in Finland. December 1992 - 13 networks were on air in 7 areas. GSM World Congress at Berlin had 630 participants.

1993: GSM was demonstrated for the first time in Africa at Telkom '93 in Cape Town. Roaming agreements between several operators were established. By December 1993, 32 networks were on air in 18 areas. GSM World Congress at Lisbon progressed with 760 participants. Telkom '93 was held in Cape Town. First GSM systems were shown.

1994: First GSM networks in Africa were launched in South Africa. Phase 2 data /fax bearer services were launched. Vodacom became the first GSM network in the world to implement data/fax. GSM World Congress at Athens drew 780 participants. December 1994, 69 networks were on air in 43 areas.

1995: GSM MoU was formally registered as an association registered in Switzerland with 156 members from 86 areas. GSM World Congress at Madrid attracted 1400 participants. December 1995 - 117 networks were on air in 69 areas. Fax, Data and SMS roaming started. GSM phase 2 standardisation was completed, including adaptation for PCS 1900. First PCS 1900 network was shown live on air in the USA. Telecom '95, Geneva, Nokia shows 33.6 kbps multimedia data via GSM. Namibia goes on-line. Ericsson 337 wins GSM phone of the year. US FCC auctioned off PCS licenses.

1996: December 1996 - 120 networks were on air in 84 areas. GSM World Congress was held in Cannes. GSM MoU Plenary was held in Atlanta GA, USA. 8K SIM was launched. Pre-paid GSM SIM cards were launched. Bundled billing was introduced in South Africa. Libya goes on-line. Option International launches the world's first GSM/Fixed-line modem.

2001: Feb -- GSM Conference held in Cannes. By May 2001 there were 500m GSM 900/1800/1900 users worldwide. 16 billion SMS messages were sent in April 2001.

3. MODERN CELLULAR TECHNOLOGY

In a cellular system, the geographical area is divided into adjacent, non-overlapping, hexagonal shaped cells. Each cell has its own transmitter

and receiver (call base stations) to communicate with the Mobile units in that cell; a mobile switching station coordinates the handoff of mobile units crossing cell boundaries. Cellular systems are based on the concept of frequency reuse: the same frequency is used by several sites which are far enough from one another, resulting in a tremendous gain in system capacity. The counterpart is the increased complexity, both for the network and the mobile stations, which must be able to select a station among several possibilities, and the infrastructure cost because of the number of different sites. The system hands over calls from transmitter to transmitter as customers move around in their vehicles. This new technique would allow more customers access to the system simultaneously, and when more capacity was needed, the area served by each transmitter could be divided again which is popularly known as CELL SPLITTING. One of the most important concepts for any cellular telephone system is that of multiple access meaning that multiple, simultaneous users can be supported through frequency reuse. In other words, a large number of users share a common pool of radio channels and any user can gain access to any channel (each user is not always assigned to the same channel). A channel can be thought as merely a portion of the limited radio spectrum, which is temporarily allocated for a specific purpose, such as someone's phone call.

Cellular Architecture

GSM System Components

The system is composed of three main elements; the switching subsystem, the base station subsystem, and the mobile. The switching part

makes the connection between the two users, the base station part controls the communication across the radio interface, and the mobile acts as the transmitter receiver for the user.

Mobile Station

The best known part of the cellular network is certainly the mobile stations. Different types of mobile stations are distinguished by power and application. The mobile station (MS) types include not only vehicle mounted portable equipment but also handheld stations popularly known as mobile handsets. A significant architectural aspect of the MS relates to the concept of Subscriber Identity Module (SIM). The SIM card contains a unique International Mobile Subscriber Identity (IMSI) used to identify the subscriber to the system. The SIM is basically a smart card, containing all the subscriber related information stored on the user side of the radio interface.

A potential user may of course buy mobile equipment, but he may also lease or borrow the equipment or purchase it through other channels. Fixed Mobile Stations are permanently installed in a car and may have a maximum allowed RF output of up to 20W. Portable (bag phones) can emit up to 8W and handheld portable units up to 2W. With Second Generation mobiles (on the market since 1993), the GSM system is becoming more and more attractive. Hand-portable units are becoming much smaller and are coming with numerous features on it. This is giving the system a boost popularity, especially in those markets with a particular demand for small mobiles such as in Asian and Pacific areas.

Base Station Subsystem

Base Station Subsystem groups the infrastructure machines, which are specific to the radio cellular aspect of GSM. The BSS is in direct contact with the mobile station through the radio interface. As such, it includes the machines in charge of transmission and reception on the radio path, and the management thereof. On the other side, the BSS is in contact with the switches of Network Subsystem (NSS). The BSS includes two types of machines :

Base Station or Base Transceiver Station

The counterpart to a mobile station within a cellular network is the base transceiver station (BTS), which is the mobile's interface to the network. Each cell site is equipped with a BTS. A BTS is usually located in the center of a cell. A cell site is used to refer to the physical location of radio equipment that provides coverage within a cell. The transmitting power of the BTS determines the absolute cell size. The BTS houses the radio transceivers that define a cell and handles the radio-link protocols with the Mobile station. BTSs are placed in the field to transfer a call to a customer's handsets, and there are between one and sixteen transceiver, each of which represents a separate RF channel. A BTS may cover an area of 30 - 40 sq kms. However, in a congested, urban location, the BTS coverage area is much smaller. BTS can be considered as complex radio modems and have little other function. A list of hardware located at a cell site includes power sources, interface equipment, radio frequency transmitters and receivers, and antenna systems.

Base Station Controller BSC

Base station controller is in contact with the switches of NSS. It monitors and controls several base stations, the number of which depends on the manufacturer and can be between several tens and several hundred of stations. A typical BSC can manage from one BTS to the entire BTS in service area, depending on their traffic capacity. The chief tasks of the BSC are frequency administration, the control of a BTS, and exchange functions, it handles radio - channels setup, frequency hopping, and handovers. The BSC is the connection between the mobile station and the Mobile Service Switching Centre and is in charge of all radio interface management through the remote command of the BTS and the mobile station, mainly the allocation and release of radio channels and the handover management. The BSC is connected, on one side, to several BTSs and on the other side, to the Network and Switching Sub System (more appropriately to a Mobile Switching Centre). A BSC is in fact a small switch with substantial computational capability. The hardware of the BSC may be located at the same site as the BTS, at its own stand-alone site, or at the site of the Mobile Switching Centre (MSC). BSC and BTS together form a functional entity some times referred to as the Base Station Subsystem.

Network and Switching Subsystem

The NSS includes the main switching functions, as well as the data basis needed for subscriber data and mobility management. The main role of NSS is to manage the communications between the GSM users and the other

telecommunications network users. The NSS is responsible for performing call processing and subscriber-related functions.

Mobile Services Switching Centre

The MSC is the interface of the cellular network to the PSTN. MSC performs the telephony switching functions of the system, it acts like a normal switching node of the PSTN, and additionally provides all the functionality needed to handle a mobile subscriber, such as registration, authentication, location updating, handovers, and call routing to a roaming subscriber. MSC is the primary switching interface between the mobile telephone systems, and the PSTN. It is capable of routing calls from the fixed network via the BSC and the BTS to an individual mobile station. The MSC also provides the network with specific data about individual mobile stations. The MSC interfaces with BSS on one other side (through which it is in contact with GSM users) and with the external networks on the other. The NSSs also need to interface with the external networks to make use of their capability to transport user data or signaling between GSM entities. In particular, the NSS make use of a signaling support network, at least partly external to GSM, usually referred to as the SS7 network.

Home Location Register (HLR)

The HLR is a database about subscribers, it stores the identity and user data of all the subscribers belonging to the area of related MSC. These are permanent data, such as the International Mobile Subscriber Number (IMSI) of an individual user, authentication key, including a subscriber's

service profile, location information, activity status and some temporary data. Temporary data on the SIM include such entries as (1) the address of the current visitor location register (VLR), which currently administers the mobile stations (2) the number to which the calls must be forwarded (if the subscriber select call forwarding), and (3) some transient parameters for authentication and ciphering .

The IMSI is permanently stored on the SIM card. The IMSI is one of the pieces of important information used to identify a subscriber within GSM system. The first three digits of the IMSI identify the Mobile Country Code (MCC) and the next two digits are the mobile network code (MNC). Up to ten additional digits of the mobile subscriber identification number (MSIC) complete the IMSI.

Visitor Location Register

The VLR contains the relevant data of all mobiles currently located in a serving (G) MSC. It is the database that contains temporary storing subscription data for those subscribers currently situated in the service area of the corresponding MSC as well as holding data on their location at a more precise level than the HLR. The VLR is always integrated with MSC. The permanent data are the same as data found in the HLR; the temporary data differ slightly. For example, the VLR contains the temporary mobile subscriber identity (TMSI), which is used for limited periods of time to prevent the transmission of the IMSI via the air interface. The substitution of the TMSI for the IMSI serves to protect the subscriber from high-technology intruders and helps point to the location of the mobile station through the cell identity.

The VLR has to support the (G) MSC during a call establishment and an authentication procedure as it furnishes data specific to the subscriber. Locating subscriber data in the VLR, as well as in the HLR, reduces the data traffic to the HLR, because it is not necessary to ask for these data every time they are needed. Another reason for storing the identical data at two different locations (in the HLR & VLR) is that each serves a different purpose. The HLR has to provide the GMSC with the necessary subscriber data when a call is coming from the public network. The VLR, on the other hand serves the opposite function, providing the host (G) MSC with the necessary subscriber data when a call is coming from mobile station.

Authentication Centre

The Authentication center (AC) is related to the HLR. It provides the HLR with different set of parameters to complete the authentication of a mobile station. The AC knows exactly which algorithms it has to use for a specific subscriber in order to calculate input values and issue the required results. Since all the algorithms for the authentication procedures are stored within AC, they are protected against abuse. The SIM card issued in area assigned to AC contains the same algorithms for authentication as the AC does. If the AC provides input and output parameters for these algorithms to either the HLR or the VLR, either location register can verify (authenticate) the mobile station.

Equipment Identity Register

The equipment identity register (EIR) is a database that contains a list of all valid mobile equipment on the network, where each mobile station is identified by its International Mobile Equipment Identity (IMEI). An IMEI is marked as invalid if it has been reported stolen or is not type approved. Within the EIR we find all the serial numbers of the mobile equipment that is either stolen or, due to some defect in their hardware, may not be used in a network. The idea is to check the identity at each registration or call setup of any mobile station, and then depending on its IMEI, admit or bar access of the mobile station to the system. The implementation of EIR is relatively a new security feature of the GSM system.

Operation & Maintenance Centre

The Operation & Maintenance Centre (OMC) has access to both the MSC and the BSC, handles error messages coming from the network, and controls the traffic load of the BSC and the BTS. The OMC configures the BTS via the BSC and allows the operator to check the attached components of the system. As the cells become smaller and the number of base stations increases, it will not be possible in the future.

4. PROFILE OF MOBILE PHONE SERVICES PROVIDING COMPANIES

The profile of Mobile Phone Services Providing Companies in the state of Gujarat is discussed below. There are six companies operating in the state as below,

Sr	Name of Company - Brand Name
A.	Fascel Limited - Hutch
B.	Idea Cellular Limited - Idea
C.	Bharati Telecom Limited - Airtel
D.	Tata Teleservices Limited - Tata Indicom
E.	Reliance Infocomm Limited - Reliance
F.	Bharat Sanchar Nigam Limited - BSNL

The detailed profile of the each of above is as under.

A. Profile of Fascel Limited - Hutch

Hutch is a leading telecom communications company in India and is one of the major cellular service providers in Gujarat. Hutch strives to bring the best of mobile telephony at the most affordable rates.

About the Hutchison Group

The Hutchison Group, one of the largest cellular operators in India - is also one of the world's leading telecommunication companies. Hutchison Telecom is a part of Hutchison Whampoa Limited (HWL), a Hong Kong based diversified multinational conglomerate spread across Asia Pacific, Europe and America. It is one of the largest companies listed on the Hong Kong Stock Exchange, operates across 42 countries and employs around 1,70,000 people worldwide. Having started its services way back in 1985, Hutchison Telecom is now recognized as one of the first cellular operators in the world.

Five core businesses in Asia

- 1) Ports and Related Services
- 2) Telecommunications and E-commerce
- 3) Property and Hotels
- 4) Retail and Manufacturing
- 5) Energy, Infrastructure, Finance and Investments

About Hutchison Telecom

Hutchison Telecommunications is a wholly owned subsidiary of Hutchison Whampoa Limited. It operates a wide range of integrated telecommunications services in over 17 countries. Formed in 1985 to run a

cellular network in Hong Kong, it has now become a formidable force in mobile communications. With business interests in Internet services, fiber optics, and mobile telephony, among others, its main interest internationally is in providing mobile telephony.

Hutchison Telecom has a successful track record in identifying potential countries and technologies, developing them and creating shareholder value over a long term. It is one of the largest 3G players worldwide and operates in Australia, Italy, UK, and many others.

Hutch in Gujarat

With leading-edge technology, 24X7 customer support and sophisticated value-added services across the world and in India, Hutch continues to assure its users a world-class experience. Now in Gujarat, as in all other telecom circles in India, Hutch is all set to be the preferred cellular service - with the widest and most extensive coverage in the state and a wide range of innovative and user-friendly services for our customers. So no matter where you are basements, closed buildings and other normally low-receptivity areas you stay connected and are well within reach, always.

SERVICES

GENERAL SERVICES:

NEWS: Stay abreast with the latest happenings across the world.

TRAVEL: Going out of Gujarat? Get flight and railway schedules. Plus STD/ISD codes of various places.

INDIATIMES SERVICES: A mixed bag full of fun and information. Just type M and send it to 8888.

ITEMIZED BILLING: Get your phone usage explained down to the last detail – with your itemized monthly Hutch bill.

MY HUTCH BILL: Get your Hutch bill details on your Hutch phone directly.

BILL IN GUJARATI: Get your Hutch bill in your language.

DICTIONARY: Get the meaning of a difficult word instantly through SMS

STOCKS: BSE, NSE, market updates, your favourite scrips. Use Voice Response or sms to get your information.

MOBILE BANKING: Check your HDFC, GTB or IndusInd Bank accounts and transact as well through sms.

EMERGENCY: Looking for the nearest police station? Or need immediate medical help? Or more? Help is at hand

REMINDERS: Set alerts and make sure you never miss an appointment. Use Dial-up or sms.

STANDARD MESSAGE: Set pre-defined messages for more convenience.

START TV SERVICES: Check program schedules, poll in, see news and more, entirely through SMS.

HELP: Need assistance on our services? Get it easily.

HOT DEALS: Know where to head for to enjoy the best deals in your town.

HUTCH WORLD SERVICES:

HUTCH TV: Watch television clips only on your EDGE phone.

MMS: Express yourself with full-colour photo messages.

JAVA GAMES: Get set to challenge yourself with over 400 games.

POLYPHONIC RINGTONES: Let your Hutch phone ring the hottest tones.

DOWN LOADS: Cartoons, wallpapers, and more, your Hutch phone is a whole lot of fun.

CINEMA: From movie trailers to the hottest Bollywood buzz, catch it all right here.

M-GURU: Astrology, Vaastu, Fengshui, personality tests and more.

3D-WALLPAPERS: Have fun in 3D. Download wallpapers for your phone.

WEBSITES: Browse, learn and enjoy on your Hutch phone.

HUTCH ACCESS: Enjoy Internet on your Hutch phone, anytime, anywhere.

RAILWAY BOOKINGS: Now you can book your railway tickets from your Hutch phone.

SMS RINGTONES: Load your phone with SMS tones and let your messages alert you, the musical way.

CALL MANAGEMENT SERVICES:

VOICEMAIL: Forward your incoming calls directly to your Voicemail box.

MISSED CALL ALERTS: Get SMS alerts of all the calls you miss whenever your phone is switched off, or when you are out of coverage.

CALL WAITING: Keep a call on hold, even as you speak on another.

CALL FORWARDING: Forward your incoming calls to a mobile or landline if you can't answer them.

CALL BARRING: Don't wish to receive calls? Bar them.

CALL CONFERENCING: Speak to six people at one go.

CALLER ID: Know who's calling even before you take the call.

BUSINESS SOLUTION SERVICES:

FAX & DATA SERVICES: Get access to all your official databases and faxes on the move.

MICROSOFT OUTLOOK: Get your Microsoft Outlook mail in your Hutch phone Inbox.

SMS AT WORK: A simple SMS based service tailored to meet your corporate needs.

DEVOTIONAL SERVICES:

BIBLE ON SMS: The Holy Book now on your Hutch phone.

ENTERTAINMENT SERVICES:

RINGTONES, LOGOS, PICTURE MESSAGES: Play your favourite tunes on your Hutch phone.

DATING: Find your dream date through Voice Response (123).

CRICKET: Keep yourself updated on the latest in ODI or test match.

YAHOO! MAIL: Send e-mail through your Yahoo! account. Reply, forward and more.

YAHOO! MESSANGER: Chat up with your Yahoo! buddies - directly from your Hutch phone.

FLASH & BLINK SMS: Make your message stand out.

CHAT: Get chatting with your Hutch buddies in an instant.

GAMES: Entertain yourself with a range of games - from simple to hi-end.

MOVIES: What's playing and where? Catch details of the latest flick to hit town.

JOKES: Keep it light! Listen to jokes on your Hutch phone.

HOROSCOPE: Know what your future's going to be like.

TAROT: Get your tarot readings in your hutch phone.

TV: When will Kyunki have its repeat show?, TV program schedules on your Hutch phone.

THOUGHTS ONLINE: Get inspired. Send your requests through SMS.

DIAL-A-DOMINO PIZZA: Order a yummy pizza through your Hutch phone.

VERNACULAR SMS: Think global, talk local. Send messages in Gujarati, Hindi or Marathi. Use 123 Service.

LIFESTYLE: Keep up to date with all the latest health and beauty tips and more.

FUNZONE: Trivia, games, and lots more to while away your time.

MISCELLANEOUS SERVICES:

GROUP MESSAGING: Send messages to many friends at one go.

HUTCH ALIVE: A host of infotainment services on your Hutch phone.

MAIL ON PHONE: Send emails and ecards. Check your POP3 accounts on your Hutch phone.

SMS BASED SERVICES: Register for a service or change your existing one through SMS.

LIST: Get a complete list of SMS based services.

B. Profile of Idea Cellular Limited - Idea

INTRODUCTION

Idea Cellular's antecedents date back to 1995, when the Aditya Birla Group and AT&T (through Birla AT&T Communications – Maharashtra & Gujarat circle) and the Tata Group (through Tata Cellular - Andhra Pradesh circle) set up cellular networks. Both the above company was amongst the first company to commercially start operation in circles other than metros and achieve financial closure in Indian Telecom industry.

In the year 2000, the historic path-breaking merger of Tata Cellular with Birla AT&T Communications and the subsequent acquisition of RPG Cellular - (Madhya Pradesh circle) in the year 2001 - helped take the company to aim even further and led to the formation of Birla Tata AT&T Limited. In year 2001, company won fourth cellular license for Delhi metro circle and in year 2002 company introduced common brand “!IDEA” and changed the name to IDEA Cellular Limited.

Since then, there has been no looking back for IDEA Cellular. The company launched Delhi operations in year 2002 and added a record 100,000 subscriber within one month of the launch.

In 2003, the company achieved the largest financial closure in Indian Telecom for all its circle. In 2004, the company entered into definitive agreement to acquire Escotel Mobile Communications (existing operator in Haryana, Kerala and UP(W)) and Escorts Telecommunications (cellular licensee holder for UP(E), Himachal Pradesh and Rajasthan).

The company is poised well to strengthen its leadership position in the Indian Telecom landscape

CORE BELIEFS

The company continuously harnesses the power of wireless revolution to provide world-class products and services. It aims at responding to customer needs proactively by anticipating requirements and providing ready solutions.

Idea Cellular draws inspiration from the loyalty of its subscribers to keep raising the bar, to shape the future, and to change and enrich the life of each and every member of its ever-growing family of subscribers.

Idea Cellular's MISSION:

Innovate. Stimulate. Liberate...

Through continuous innovation, Idea Cellular seeks to liberate customers from the shackles of time and space.

C. Profile of Bharati Telecom Limited - Airtel

INTRODUCTION

Airtel comes from Bharti Cellular Limited - a part of the biggest private integrated telecom conglomerate, Bharati Enterprises.

Bharti Enterprises has been at the forefront of technology and has revolutionized telecommunications with its world class products and services. Established in 1976, Bharti has been a pioneering force in the telecom sector with many firsts and innovations to its credit. Bharti has many joint ventures with world leaders like Singtel (Singapore Telecom); Warburg Pincus, USA; Telia, Sweden; Asian infrastructure fund, Mauritius; International Finance Corporation, USA and New York Life International, USA.

Bharti provides a range of telecom services, which include Cellular, Basic, Internet and recently introduced National Long Distance. Bharti also manufactures and exports telephone terminals and cordless phones. Apart from being the largest manufacturer of telephone instruments in India, it is also the first company to export its products to the USA.

Bharti is the leading cellular service provider, with a footprint in 21 states covering all four metros. It has over ten million satisfied customers.

Bharti is aligned to customer satisfaction. Keeping with this belief It has Branch offices in all the Major towns of Gujarat namely Ahmedabad (Circle office), Baroda, Rajkot and Surat. Bharti is present across 173 towns in Gujarat and are available over 75 showrooms and numerous other retail outlets.

VISION

To be globally admired for telecom services that delight customers

MISSION

We will meet global standards for telecom services that delight customers through:

- Customer service focus
- Empowered employees
- Innovative services
- Cost efficiency

D. Profile of Tata Teleservices Limited - Tata Indicom

INTRODUCTION

Tata Teleservices is part of the INR 64,350 Crore (US\$14.3 billion) Tata Group, that has over 90 companies, over 210,000 employees and more than 2.16 million shareholders. With an investment of over INR 9,000 Crore (US\$ 2 billion) in Telecom, the Group has a formidable presence across the telecom value chain. The Tata Group plans an additional investment of around INR 9000/- Crore (US\$ 2 billion) in this sector in the next two years.

Tata Teleservices spearheads the Group's presence in the telecom sector. Incorporated in 1996, Tata Teleservices was the first to launch CDMA mobile services in India with the Andhra Pradesh circle.

Starting with the major acquisition of Hughes Tele.com (India) Limited (now renamed Tata Teleservices (Maharashtra) Limited) in December 2002, the company has swung into expansion mode. Tata Teleservices operates in 20 circles i.e. Andhra Pradesh, Chennai, Gujarat, Karnataka, Delhi, Maharashtra, Mumbai, Tamil Nadu, Orissa, Bihar, Rajasthan, Punjab, Haryana, Himachal Pradesh, Uttar Pradesh (E), Uttar Pradesh (W), Kerala, Kolkata, Madhya Pradesh and West Bengal. The investment in Tata Teleservices Limited (including Tata Teleservices (Maharashtra) Limited) as of March 2005 totals INR 11,800 Crore (US\$ 2,682 billion).

Having pioneered the CDMA 3G1x technology platform in India, Tata Teleservices has established a robust and reliable telecom infrastructure that ensures quality in its services. It has partnered with Motorola, Ericsson,

Lucent and ECI Telecom for the deployment of a reliable, technologically advanced network.

The company, which heralded convergence technologies in the Indian telecom sector, is today the market leader in the fixed wireless telephony market with a total customer base of over 2.5 million.

Tata Teleservices' bouquet of telephony services includes Mobile services, Fixed Wireless Phones, Public Booth Telephony, and Wireline services. Other services include value added services like voice portal, roaming, post-paid Internet services, 3-way conferencing, group calling, Wi-Fi Internet services and data services.

Tata Teleservices has recently, marked its entry into the Prepaid segment by launching 100% Sacchai True Paid, across all its existing 20 circles. With the latest initiative, Tata Indicom has opened up new frontiers for the Indian prepaid customers by offering 1-second pulse and 100% talktime on True Paid.

Tata Indicom has also launched a collection of 1000 mobile games - one of the largest collections of mobile games in the world on Nokia 3105.

The company has launched prepaid FWP and public phone booths, new handsets, expand Wi-Fi across public hotspots, new voice & data services such as BREW games, picture messaging, polyphonic ring tones, interactive applications like news, cricket, astrology etc.

Tata Teleservices has a strong workforce of 6000. In addition, TTSL has created more than 20,000 indirect jobs through outsourcing of its manpower needs.

Today, Tata Teleservices Limited along with its subsidiary Tata Teleservices (Maharashtra) Limited serves 4.2 million customers in over 1400 towns and aims at 4000 towns by March'06. With an ambitious rollout plan both within existing circles and across new circles, Tata Teleservices is offering world-class technology and user-friendly services in 20 circles.

VISION

To set the standards in our chosen businesses and markets.

We will be an agile, customer driven company that earns trust through responsible leadership, innovation and excellence.

We are committed to providing a caring empowered and fan filled environment.

MISSION

We will serve the fixed and mobile voice and data communication needs of business and individual customers by offering reliable and responsible services of the highest standards in consonance with TATA reputation.

E. Profile of Reliance Infocomm Limited - Reliance

INTRODUCTION

Reliance Infocomm is the outcome of the late visionary Dhirubhai Ambani's (1932-2002) dream to herald a digital revolution in India by bringing affordable means of information and communication to the doorsteps of India's vast population.

"Make the tools of infocomm available to people at an affordable cost, they will overcome the handicaps of illiteracy and lack of mobility", Dhirubhai Ambani charted out the mission for Reliance Infocomm in late 1999. He saw in the potential of information and communication technology a once-in-a-lifetime opportunity for India to leapfrog over its historical legacy of backwardness and underdevelopment.

Working at breakneck speed, from late 1999 to 2002 Reliance Infocomm built the backbone for a digital India - 60,000 kilometres of fibre optic backbone, crisscrossing the entire country. The Reliance Infocomm pan-India network was commissioned on December 28, 2002, the 70th - birth anniversary of Dhirubhai. This day also marked his first birth anniversary after his demise July - 6, 2002.

Reliance Infocomm network is a pan India, high capacity, integrated (wireless and wireline) and convergent (voice, data and video) digital network, designed to offer services that span the entire Infocomm value chain - infrastructure, services for enterprises and individuals, applications and

consulting. The network is designed to deliver services that will foster a new way of life for a New India.

VISION

"We will leverage our strengths in executing complex global-scale projects to make leading edge information and communication services affordable by all individual consumers and businesses in India. We will offer unparalleled value to create customer delight and enhance business productivity. We will also generate value for our capabilities beyond Indian borders while enabling millions of India's knowledge workers to deliver their services globally".

DHIRUBHAI'S DREAM

Late Dhirubhai Ambani built Reliance from scratch to be in the reckoning for a place in the Global Fortune 500 list. This achievement is even more significant due to the fact, that the entire growth was achieved in an organic manner and in a span of just 25 years.

Dhirubhai was not just firmly rooted in traditional Indian values, but was also a quintessentially modern man - the man of the new millennium. This was clearly reflected in his passion for mega-sized projects, the most advanced technology and the highest level of productivity.

The corporate philosophy he followed was short simple and succinct - "Think big. Think differently. Think fast. Think ahead. Aim for the best". He inspired the Reliance team to do better than the best - not only in India but also in the world.

Dhirubhai Ambani, Founder Chairman of the Reliance Group, had an acute sense that education alone empowers people. He was a great

communicator. He communicated to inspire, to guide, to educate and to motivate.

He employed telephone as a powerful tool to achieve these goals. He used telephone to defeat distance, to compress time and to remain abreast of events. He was acutely aware of the power of information and communications. He would often say: "make the tools of infocomm available to people at an affordable cost, they will overcome the handicaps of illiteracy and lack of mobility".

He wanted a telephone call to be cheaper than a post card. This, he believed, would transform every home, empower every Indian, remove the roadblocks to opportunity and demolish the barriers that divide our society.

Dhirubhai Ambani was of the conviction that infocomm would energise enterprises, galvanise governance, make livelihood an enjoyment, learning an experience, and living an excitement.

Reliance Infocomm is a fascinating outcome of this powerful conviction. It is a major initiative to translate his inspiring dream into reality.

BUSINESS

Reliance Infocomm will offer a complete range of telecom services, covering mobile and fixed line telephony including broadband, national and international long distance services, data services and a wide range of value added services and applications that will enhance productivity of enterprises and individuals.

Reliance India Mobile, the first of Infocomm's initiatives was launched on December 28, 2002, the 70th birthday of the Reliance group founder, Shri Dhirubhai Ambani.

This marks the beginning of Reliance's dream of ushering in a digital revolution in India by becoming a major catalyst in improving quality of life and changing the face of India. It aims to achieve this by putting the power of information and communication in the hands of the people of India at affordable cost.

Reliance Infocomm will extend its efforts beyond the traditional value chain to develop and deploy telecom solutions for India's farmers, businesses, hospitals, government and public sector organisations.

F. Profile of Bharat Sanchar Nigam Limited - BSNL

INTRODUCTION

On October 1, 2000 the Department of Telecom Operations, Government of India became a corporation and was christened Bharat Sanchar Nigam Limited (BSNL). Today, BSNL is the largest Public Sector Undertaking of India and its responsibilities include improvement of the already impeccable quality of telecom services, expansion of telecom network, introduction of new telecom services in all villages and instilling confidence among its customers.

Responsibilities that BSNL has managed to shoulder remarkably, deftly. Today with a 37 million line capacity, 99.9% of its exchanges digital, nation wide Network management & surveillance system (NMSS) to control telecom traffic and nearly 250373 route kms of OFC network, Bharat Sanchar Nigam Ltd is a name to reckon with in the world of connectivity. Along with its vast customer base, BSNL's financial and asset bases too are vast and strong. Consider the figures, as they speak volumes on BSNL's standing :

The telephone infrastructure alone is worth about Rs. 1,00,000 crore(US \$ 21.2 billion). Turnover of Rs. 22,000 crore (US \$ 4.6 billion)

Add to which, BSNL's nationwide coverage and reach, comprehensive range of telecom services and a penchant for excellence; and you have the ingredients for restructuring India for a bright future.

VISION

To become the largest telecom Service Provider in South East Asia.

MISSION

To provide world-class State-of-art technology telecom services on demand at affordable price.

To Provide world-class telecom infrastructure to develop country's economy.

GROWTH PLANS

BSNL's future plan include a fast expansion programme of increasing the present 34 million lines to twice that number by 2005 and some 120 million lines by 2010.

The shift in demand from voice to data domination, and from wireline to wireless, has revolutionized the very nature of the network. BSNL has already set in place several measures that should enable it to evolve into a fully integrated multi-operator by 2005 and its incumbent status, size, infrastructure and human resource should certainly, give it a distinct advantage.

Consolidation of the network and maintaining high quality of service comparable to International standards is the key aim of the Growth Plan.

Objective of the plan are:

- The telephone connection shall be provided on demand and it shall be sustained.
- The Network shall be made fully digital. All the technologically obsolete analog exchanges will be replaced with digital exchanges.

- To provide digital transmission links up to all SDCAs.
- Digital connectivity shall be made available to all the exchanges by 2007.
- Extensive use of Optical fiber System in the local, Junction and long distance network so as to make available sufficient bandwidth for the spread of Internet and Information technology.
- ISDN services shall be extended to all the district headquarters, subject to demand.
- To provide Intelligent Network Services, progressively all over the country (major cities have already been covered).
- To set up Internet Nodes progressively up to District headquarters level.
- Upgrading existing STD/ISD PCOs to full fledged Public Tele-Info Centers (PTIC) for supporting Multi media capability and Internet Access.
- Replacement of life expired, analogue coaxial and radio systems.
- Introduction of Wireless technology (Supporting Internet Access) and optical fiber technology in subscriber loop.
- Introduction of latest telecom services like National directory enquiry, computerization etc.
- Cellular Mobile Phone Servicess 'Cell One' of BSNL was launched on 19th October 2002 . The scheme will cover 4 million customers in two phases. Phase-I will cover about 1.5 million customers covering about 1000 cities during 2002-03, which will be expanded to 4 million in phase-II.

SOCIAL COMMITMENT

BSNL is committed to provide quality Telecom Services at affordable price to the citizens of the remotest part of the Country. BSNL is making all effort to ensure that the main objectives of the new Telecom Policy 1999 (salient points indicated below) are achieved:

Access to telecommunications is of utmost importance for achievement of the country's social and economic goals. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the new Telecom policy 1999.

Strive to provide a balance between the provision of universal service to all uncovered areas, including the rural areas, and the provision of high-level services capable of meeting the needs of the country's economy; Encourage development of telecommunication facilities in remote, hilly and tribal areas of the country;

Transform in a time bound manner, the telecommunications sector to a greater competitive environment in both urban and rural areas providing equal opportunities and level playing field for all players.

SERVICES

When it comes to connecting the four corners of the nation, and much beyond, one solitary name lies embedded at the pinnacle - BSNL. A company that has gone past the number games and the quest to attain the position of a leader. It is working round the clock to take India into the future by providing world-class telecom services for people of India.

Driven by the very best of telecom technology from chosen global leaders, it connects each inch of the nation to the infinite corners of the globe, to enable you to step into tomorrow.

- BASIC TELEPHONE SERVICES: BSNL Gujarat Telecom District is the telecom operator in Gujarat and is known to everybody for Basic Telephony Services for over 100 years. They have proven them by providing the best and accurate services around India. As a Government body they take care of all the benefits of their customers.
- EPABX: BSNL permits telephone subscribers to use their own PABX/EPABX connected to the BSNL network under certain commercial/technical conditions.
- ISDN: ISDN Has emerged as a powerful tool worldwide for provisioning of different services like voice, data and image transmission over the telephone line through the telephone network.
- WLL: WLL is a communication system that connects customers to the Public Switched Telephone Network (PSTN) using radio frequency signals as a substitute for conventional wires for all or part of the connection between the subscribers and the telephone exchange.
- LEASED LINES: To transmit data between computer and electronic information devices, BSNL provides data communication services to its subscribers. It offers a choice of high, medium and low speed leased data circuits as well as dial-up lines. Bandwidth is available on demand in most of the cities.
- TELEX TELEGRAPHS: Telegram is a common man's communication need. The first telegraph message was transmitted live on Morse

through electrical signals between Calcutta and Diamond Harbour on 5th November 1850. The Telegraph services were opened to public during February 1855.

- INTERNET: BSNL is an Internet service provider, providing Internet service throughout the entire country except in New Delhi and Mumbai, under the brand name of "SANCHARNET". Sancharnet provides free all India roaming and enables its users to access their accounts, using the same access code (172233) and user ID from anywhere in the Country.
- INTELLIGENCE NETWORK: Recognizing the rising expectations and requirements of the customers, BSNL endeavors to harness the rewards of telecom revolution. Towards this, they have redefined the term 'telecom service' by introducing value added services in the form of intelligent network.
- I-NET: Change your way of doing business by networking your computers, data terminals, hosts and LANs in different offices and manufacturing units both within the country and outside, through Inet - an X.25 based packet switched Public Data Network of BSNL. It provides extremely cost effective and reliable solution to your High Speed Wide Area Networking needs.
- HV-NET: HVNET the High Speed Satellite based VSAT network of Department of Telecom Services, provides high speed data transfers (up to 64 Kbps) and voice communication service covering the entire country.

- WEB FONE: Very simply, Webfone enables the integration of voice and data on existing Internet network, transmitting voice utilizing Internet Protocol. As IP is being used, the only disadvantage in Webfone may be the quality of the voice being sent or received. But then you can talk globally almost at no cost.
- MOBILE PHONE: BSNL announces the launch of India's biggest cellular service Cell One , which along with Excel (pre-paid service) brings cellular telephony to the masses, through innovative technology and strategic pricing.

India's fastest growing cellular service CELLONE, along with EXCEL (pre-paid service) brings cellular telephony to the masses, through innovative technology and strategic pricing. This ambitious service uses state-of-the-art GSM technology to attain global excellence and leadership in business. Our entry into this sector has brought GSM cellular service at an affordable cost to the common man. All serving a single objective, to provide better communication to millions across India.

Customers have reposed tremendous faith in BSNL and it has enrolled over 30 Lakh Cellular customers within ten months of launch of Cellular service, an unprecedented mark in Indian Cellular Market.

Why should one choose CellOne?

- For the first time in the country, all major towns and cities are covered through our network
- All major national and state highways are covered

- National and International SMS facility
- International roaming available for more than 300 networks across the world.
- The facility of one number roaming across the country
- Appropriate and reasonable tariff packages to suit every pocket
- Absolute transparency in billing. See CellOne bills online no matter whatever place you belong to.
- All regular features of cellular telephony, such as SMS as well as advanced features like MMS are available.
- 24 Hour helpline all across the country.
- The only Mobile service available through out the country including Jammu and Kashmir and North Eastern states like Arunachal Pradesh, Nagaland, Mizoram etc.

BSNL SERVICE PLUS

CellOne provides a number of Value Added Services. These services helps BSNL serve you better & enhance the ease & quality of communication thus bringing global connectivity at your doorstep.

- Voice Mail Services
- Value Added Services Sim Based Service SMS Based Service
- Short Message Service (SMS)
- Group Messaging

- National & International Roaming
- Call Forwarding
- Corporate Virtual Private Network
- Call Conferencing
- Friend and Family Talk
- Call Waiting and Call Holding Facility
- Unified Messaging Services: This provides Voice mail, FAX, e-mail, text to voice services on your mobile phone. So stay in touch with your near and dears by means you like the lost.
- Wireless Application Protocol (WAP): Surf WAP enabled websites on Internet using this service.

CUSTOMER CARE

Several Steps have been taken at BSNL to augment the quality of customer care to international standards. They try to satisfy their customers with the best available facilities and making more user friendly for every customer around Gujarat.

Some of the steps taken by BSNL to serve their customers are as under:

- Mobiles being given to outdoor staff in a phased manner for speedy rectification of faults.
- Majority of the local network is built up on jelly filled and OFC.
- Internal Distribution Points (DPs) being provided in the customer premises to eliminate the faults arising out of overhead wires.
- Extensive use of digital loop carrier (DLC)/Wireless in Local Loop (WLL) system for improving reliability of external plant.

- Remote Line Units (RLUs). Remote Subscriber Units (RSUs) are being provided extensively to reduce the long lengths of copper cables.
- Establishing call centers across the nation to provide single window solutions and convenience to customers.
- Countrywide Network Management & Surveillance System (NMSS) to ensure uninterrupted and efficient flow of telecom traffic.
- Application Form for new telephone connection made free of charge.
- Procedure for restoration of telephones disconnected due to non-payment simplified and powers delegated to Secondary Switching Area (SSA) heads.
- Payment of telephone bills being received on Saturday and Sunday through cheques in CTO/DTO.
- More than one PCO permitted at the same premises.
- Various application forms and procedures being simplified for new telephone connections, shifting and third party transfer.

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CHAPTER – 4

OVERVIEW

OF

INDIAN

TELECOMMUNICATION

INDUSTRY

CHAPTER – 4

OVERVIEW OF INDIAN

TELECOMMUNICATION INDUSTRY

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CHAPTER – 4

1. INTRODUCTION

Telecommunication has now become the backbone of any modern economy due to its all-pervasive nature of running through almost every human transaction - commercial, digital or even personal. The emerging new economy, powered by technology and dictated by the digital revolution is incredibly forcing the telecom industry to grow more than ever before.

The changing lifestyle of human beings enhanced by Internet, facilitated by mobile communications and enriched by e-commerce would give a real boost to this industry. As trade and industry grow, telecom services also have to expand commensurately because it is one of the greatest infrastructure and life-blood for the modern trade and commerce.

For the second populous country in the world and the fifth one in terms of purchasing power parity, an average total tele-density of 10, points towards its potential for growth. Against this backdrop, in advanced countries the tele-density is averaging in 50-60 range.

India's telephone network is one of the largest in the world and the third largest among emerging economies after China and Republic of Korea.

Monopolized by the government, the sector was a big victim of huge operational inefficiency and customer apathy till recently. However, the opening up of economy per se has improved remarkably the service conditions. The scenario is undergoing dramatic changes day by day. Private players are now flocking to this sector with unexpected enthusiasm and the scenario is set to witness fierce competition, both in basic telephony, cellular, international, national long distance and other value-added services.

In developed countries telecom industry is viewed as the prime mover of GDP growth and India is now increasingly getting ready to follow the same trend.

2. INDUSTRY STRUCTURE

The telecom sector can be broadly divided into Service providers and Equipment manufacturers. Service providers consist two, namely basic (fixed line) and value-added. The value-added services include cellular, radio paging, public mobile radio paging, trunking, global mobile positioning communication services, VSAT services, electronic mail, voice mail, internet services etc. In all these areas, the policy of the government has undergone a sea change over the period of the years and especially after the New Telecom Policy 1999.

The basic service segment was earlier dominated by the public sector. The Department of Telecom Services (rechristened as Bharat Sanchar Nigam Limited) provides basic service to the entire country except Mumbai and Delhi, which is being catered to by Mahanagar Telephone Nigam (MTNL). Videsh Sanchar Nigam (VSNL) was earlier the international service provider catering to all the telecom services originating from India to overseas. But now, VSNL is no longer a Government company post its divestment. Further its monopoly has also ended from 1 April 2002 and private players can provide international telephone services. Some players like Bharti have already taken a lead and may start providing services in the near future.

The basic telephony sector has virtually been in the grip of the government till a few years back. It was opened up to private sector during 1994 when six companies got licenses for operating the basic services in six

areas. The six licenses were given to Bharti Telenet, Essar Commvision, Shyam Telecom, Hughes Telecom, Tata Teleservices, and Reliance Telecom for Madhya Pradesh, Punjab, Rajasthan, Maharashtra and Goa, Andhra Pradesh and Gujarat. Now, the government has issued further licences to players like Reliance, Tatas, HFCL, Bharati, Aircel Digilink and Birla AT & T. Now, there is now no bar on the number of players that can provide basic services.

In value-added category, cellular mobile service is the most visible in which private players can operate in all the 23 circles in the country including the 4 metros. In each circle, 2 operators were initially allowed and later BSNL or MTNL was given the choice as the third operator. Now, a fourth player is also allowed as per the new guidelines and many cities have already witnessed a four-cornered fight amongst the cellular operators.

Further, the national long distance services (NLD) market has also been opened up and players like Bharti, Tatas and Reliance have already started work on providing NLD services. Internet service itself has now evolved as a separate industry. Besides, other value added services will also see competition in future.

Telecom equipment manufacturers are the other category of players in the industry, which was exclusively reserved for government enterprises until 1984. Till that time it was dominated by Indian Telephone Industries (switching, transmission and terminal equipments). Hindustan Cables (cable products) and Hindustan Teleprinters (telex machines/modems). Thereafter, private entry was allowed in the manufacture of telephone instruments,

cables, transmission equipment, small switching exchanges developed by C-DoT and manufacture of large exchanges.

At present, private sector is allowed to manufacture the entire range of telecom equipments. Now several new private players like Himachal Futuristic, Global Telecommunication, Bharati Telecom, Tata Telecom, Shyam Telecom, etc. are serious players in the field.

3. SUBSCRIBER BASE

The telecom service industry is banking on rising subscriber base, increasing non-voice and revenues from other value added segments. The key drivers for service providers lies with increase in minutes of usage at current low average rates per user and value added services with improvement in percent share of non voice revenue along with enhanced coverage in an competitive but healthy market. Broadband connections have also continued the steady growth rate since beginning of 2005. At the end of June 2005 total Broadband connections in the country have reached near 4.0 lakh, compared to 1.86 lakh at the end of March 2005.

Growth in mobile subscriber base along with rise in international voice and data services has enabled impressive performance of telecom service providers. The aggregate sales of 7-telecom service companies more than doubled to Rs 4904 crore in the quarter ended June 2005. However, the sharp surge is partly due to the fact that Bharti Televentures revenues for the quarter ended June 2005 included its erstwhile subsidiaries Bharti Cellular and Bharti Infotel, which have been merged with Bharti Tele-Ventures effective from 1st April 2005. Including the operations of these erstwhile subsidiaries in the quarter ended June 2004, the actual revenue of 7 telecom

service providers would have increased by 18% in the quarter ended June 2005 on a like to like basis.

4. SUBSCRIBER ADDITION

The telecom sector is one of the fastest growing sectors of the Indian economy with more than 100 million-telephone network. The sector, which was growing in the range of 20 to 25 % up to the year 2002-03 has moved to a higher growth path of an average rate of about 35 % during the last two years. This rapid growth has been possible due to various proactive and positive decisions of the Government and contribution of both by the public and the private sector In terms of number of phones, we are the fifth largest network after China, USA, Japan and Germany. During the first year of the new Government, i.e. May, 2004 onwards, an all time record growth has been achieved by adding about 2.36 crore phones. The number of phones provided in the country up to 1995 was only about 2.2 crore since the introduction of phones in India. In the recent past, every month more than 20 lakh phones get added i.e. about 70,000 persons are provided phones each day. The tele-density has increased from 7.15 per cent on April 30, 2004 to 9.15 per cent in April, 2005. Now the number of mobile phones has overtaken the number of fixed phones. The share of private sector has also increased to more than 45 per cent in the total phones.

The subscriber base for telephony services continued to maintain its general growth during the month of April 2005. During the month 2.03 million subscribers were added, which included around 0.59 million Fixed Lines and 1.44 million mobiles. At the end of April 2005, total fixed lines have crossed 46

million and mobiles have reached around 54 million making a total of telephony subscribers in the country to cross 100 million. Teledensity of the country has reached 9.26 as compared to 9.08 at the end of March 2005.

The mobile (GSM+CDMA) subscriber addition has fallen from around 2 million in December 2004 to 1.4 million in April 2005. The additions has shown a slowdown consequent to deceleration in subscriber addition in the Metro circle and A circle, which has the highest teledensity hence lowering the scope for penetration. For GSM service providers. The subscriber addition for January 2005 was 1.7 million. There was a surge in subscriber addition for the month of April 2005, MoM as the figures for March 05 was relatively low due to deprovisioning of around 9.8 lakh customers by Reliance Infocomm on account of issues including subscriber data verification and customer credit worthiness. If this is considered then, there has been a continuous slowdown in subscriber additions for the continuous fourth month starting from December 2004.

5. TELEDENSITY

Indian Telecom Services Industry witnessed significant growth in recent past, primarily driven by reforms in the regulatory set-up. This was augmented by investments from private sector in enhancing coverage to take advantage of the low penetration levels. The sector is currently buzzed with introduction of cheap prepaid schemes and cheap handset prices, which resulted in, lower entry barriers. This in turn has propelled subscriber addition bringing in more addressable population.

The subscriber base for telephony services accelerated its growth during July 2005 with around 2.72 million subscriber additions. The monthly additions are thus getting closer to 3 million per month. For mobile segment 2.45 million subscribers have been added during July 2005, up by 23.7% (MoM).

During the first four months of financial year 2004-05, approximately 7.61 million mobile subscribers have been added, making it a total of 59.83 million mobile subscribers at the end of July 2005. In the fixed segment, a total of 0.27 million were added during July 2005. These were predominantly WLL (F). During the first four months of financial year 2004-05, approximately 1.26 million fixed subscribers have been added. With this the total subscriber base of fixed lines have reached 47.17 million. The gross subscriber base consisting of fixed as well as mobile has touched 107 million resulting into the overall teledensity of around 9.86%.

As per the data from TRAI, the subscriber base of private operators have reached 53.76 million (fixed as well as mobile) whereas that of PSU operators (BSNL & MTNL) is 53.24 million. The percentage market share of private operators has become 50.24% as compared to 49.76% of PSU operators. Taking into consideration, the wide gap in urban and rural teledensity, there is extensive scope for private service providers to take a lead role for network expansion. At present the urban teledensity is at around 26.2 while the rural teledensity is mere 1.74. There is negligible growth in mobile services in rural areas and the growth that is witnessed now is mainly from incumbents. Industry expects to add more than 2 million subscribers per

month and it expected to reach around 4 million if the rural infrastructure is built and as competition shifts to these areas.

Meanwhile National telecom policy is likely to be announced this year. The policy is expected to target and facilitate the subscriber addition along with healthy competition in the sector. At present the sector has seen a host of proposals including methodology used to calculate ADC, pending approval on lower spectrum charges etc. these issues are expected to be addressed in the proposed national telecom policy. Meanwhile, Broadband connections have also continued the steady growth rate since beginning of 2005. At the end of July 2005 total Broadband connections in the country have crossed 4.50 lakh.

6. INVESTMENT

The Indian telecom industry is poised to be one the fastest growing and the most competitive wireless market in the world. According to industry sources wireless penetration in India was 5% as against countries like China 27%, Philippines 42% and US 64% as on March 2005. This brings tremendous potential for the players through network expansion based on emerging technologies and integrated solutions.

Already players are looking ways and means to take advantage of the highly growing market through network expansions and value added services. Further to the increase in FDI limit players like Bharti, Hutchison Essar, IDEA, Reliance Infocomm, VSNL, and TATA Teleservices are bound to benefit along with other smaller players.

Increase in FDI limit to boost investments and may lead to further consolidation

Increase in FDI limit (from 49% to 74%) would help the existing players to infuse funds for capacity expansion programmes and also would facilitate their inorganic growth plans as well. Currently, there are six national level telecommunications providers (BSNL, Bharti Televentures, Reliance Infocomm, Hutchison Essar, IDEA, and BPL) in the country and three regional level players (MTNL, Spice, and Aircel).

The increase in FDI level will definite benefit the players with ease in access of funds to meet their capex need. Bharti Televentures has a capex plan of around Rs 4000 crore for FY06. The company has presence in little less than 3000 towns and has plans to increase this to around 5000 towns. Meanwhile, the long distance player, VSNL has capex plans of around Rs 1000 crore in financial year 2004-05 and plans to spend this for global acquisitions (Tyco's acquisition), entry into South Africa entry and developing its cable network. Meanwhile, Tata Teleservices (Maharashtra) covers around 125 towns in the State of Maharashtra and Goa and plans to reach 160 towns by the end of the financial year 2004-05.

The sector has been witnessing a series of acquisitions. Prior to its initial public offer, slated to come this year, Hutchison Essar has seen significant change in promoter holding. Essar Teleholding has entered into a MoU with Max Telecom Ventures to acquire the latter's stake in Hutchison Essar for a cash deal of Rs 657 crore (Rs 607 per share). On completion of this purchase, Essar Group's stake in Hutchison Essar will increase from

30.42% to 33.58%. Earlier, in line with consolidation, the company had acquired BPL communications for over Rs 4400 crore (Rs 16800 per subscriber). Further to this deal, Hutchison Essar would become the second largest player in the GSM space after Bharti in terms of market share.

Further consolidation is expected with existence of small players like Aircel (in Tamilnadu circle with subscriber base of 2.09 million) and Spice communications (in Karnataka and Punjab circle with subscriber base of 1.58million). While HFCL infotel (In Chandigarh and Punjab with little less than 3 lakh subscribers) and Shyam (Rajasthan with around 2 lakh subscribers) are two small CDMA based service providers.

It is expected that, there will be a cut in license fee in the NLD and ILD space. Currently, India has four players (VSNL, Bharti, Reliance Infocomm and Data) in the ILD space and four players in NLD (VSNL, Bharti, Reliance and BSNL). The decrease in license fee coupled with access to funds would help players like IDEA and Hutchison Essar to enter into the NLD space. Furthermore, with the expected cut in license fee for long distance businesses, some of the existing telecommunications providers may enter the Long Distance business thereby putting more pressure on tariffs and margins.

Mobile Subscriber additions grew by 48% (QoQ) for second quarter of FY06

In the month of September 2005, 2.9 million subscribers were added similar to 3.01 million subscribers in August 2005. The average additions for the first half of the financial year 2004-05 reached 2.46 million per month as

against 1.83 million per month additions in the corresponding previous year period.

For mobile segment more than 2.48 million subscribers have been added during September 2005 as compared to 2.74 million in August 2005. During the first half of the current financial year approximately 14.75 million mobile subscribers have been added, making it a total of 65.05 million subscribers at the end of September 2005. During the second quarter of financial year 2004-05, 7.67 mobile subscribers were added in comparison to 5.16 million added during the first quarter.

In the fixed segment 0.39 million subscribers were added during September 2005, compared to 0.27 million in August 2005. With this the total subscriber base of fixed lines has reached 47.44 million. The additions of fixed lines subscribers during the first half of the financial year 2004-05 was 1.92 millions as compared to 1.22 million addition during the first half of previous year.

The gross subscriber base consisting of fixed as well as mobile has become 113 million at the end of September 2005. The teledensity at the end of September 2005 has reached 10.38 as compared to 10.12 at the end of previous month.

Mobile subscriber growth is expected to be buoyant given the low teledensity under low tariff regime. This is further augmented by the network expansions to new areas with value-added services and enhanced coverage in the existing networks.

With increase in FDI limit, it is quite likely that the regional players may be acquired by the larger player's further bringing consolidation in the industry. Furthermore, with the expected cut in license fee for long distance businesses, some of the existing service providers may enter the Long Distance business thereby putting more pressure on tariffs and margins. However, given the strong and sustained growth in subscriber base and increased revenues from value-added services, the overall outlook for the sector is positive.

7. TURNOVER

The annual turnover of telecom industry is more than Rs 51600 crore. The telecom operators contribute about Rs 6000 to Rs 6500 crore per annum to central exchequer through Licence Fee, USO levy, spectrum charges, Dividends, etc. Of this, BSNL alone contributes about Rs 2500 crore per annum. Besides, the sector also contributes through service charge, Corporate Tax and other fiscal levies. The telecom services are clearly the growth driver for other sectors of the economy. The usage of these services significantly contributes to the productivity and income levels. The available studies suggest that the incomes of business entities and households increase in the range of 5-10 per cent by the use of telecom services.

The full year 2004-05 ended results for Bharti Televentures saw robust growth in sales by 61% contributed by the growing mobile subscriber base. On quarter on quarter basis, the revenues for quarter ended March 2005 increased by 8% to Rs 2317.24 crore with 290 basis points increase in operating profit margins. The profit after tax for the quarter ended at Rs

454.38 crore, up by 22%. The revenue from mobile services saw 9% increase to Rs 1614.48 crore on QoQ basis. YoY, this had zoomed by 63%. Mobile services contributed to 62% of the total revenue. The EBITDA also increased by 77% (YoY) to Rs 561.98 crore. On QoQ basis EBITDA increased by 16%. The ARPU came down to Rs 504 for the quarter ended March 2005 compared to Rs 519 for the quarter ended December 2004. SMS revenue as a % of mobile revenues was at 6.3% and the total non-voice revenue, as a % of mobile revenue was 9.4%.

During the quarter ended March 2005, the company added 53603 customers on broadband & telephone networks. The broadband & telephony customer base was 857262 as of March 31, 2004. The company has focused on acquiring customers subscribing to DSL services and as on March 31, 2004, had approximately 1,18,000 broadband & telephony customers. The revenues from this segment saw a 6% growth QoQ at Rs 310.87 crore with a 8% increase in EBITDA at Rs 91.81 crore. The segment contributed to 12% to the total consolidated revenue. The EBITDA margin for this segment was 29.5% for the quarter ended March 2005.

For the quarter ended March 2005, revenues from long distance services increased by 3% (QoQ) to Rs 507.40 crore. On YoY basis the increase was 27%. The long distance services contributed to 20% of the total revenue. The EBITDA from this segment was at Rs 192.72 crore up by 29% (QoQ) and 61% (YoY). For the quarter ended March 2005, revenues from enterprise services increased by 8% (QoQ) to Rs 152.48 crore. On YoY basis the increase was 27%. The enterprise services contributed to 6% of the total

revenue. The EBITDA from this segment was at Rs 72.84 crore up by 7% (QoQ) and 128% (YoY).

Commenting on the results, Mr. Sunil Bharti Mittal, Chairman & Group Managing Director of the company, said "I am pleased to share that Bharti has continued to deliver results that have surpassed the performance of some of the best companies in India. The growth story at Bharti is a tribute to the potential of the Indian market and a reflection of our execution capabilities and operational efficiencies. I am also pleased to share with you that our fourth quarter revenues have taken us into the US\$2 billion club."

Although the cellular business by MTNL has done well for the quarter with 57% rise in revenue, the gloomy basic services affected the overall performance, which contributes to 94% of the revenue. The margins from the basic services went down while the mobile segment flared up. Consequent to a decrease in tax provisions, the bottomline for the quarter saw a 5% rise to Rs 323.27 crore. For the annual results, the trend was similar but following to a 13% decrease in topline the profits went down by 18% after accounting for prior period adjustments in the corresponding previous period. The company has seen rapid growth in mobile subscriber addition for the current quarter. Meanwhile the proposed merger of two PSUs, MTNL and BSNL is still awaited. As part of its plans to migrate into the third generation (3G) platform state-owned telecom major MTNL has issued a draft tender for Rs 1000 crore for setting up 4 million lines in Delhi and Mumbai. The revision in ADC has already affected the profits of the company but moving forward any reduction in regulatory costs would be beneficial for the company. The broadband

segment is expected to be a fresh driver for the company, which will see a growth similar to the cellular services. Although the company has done well in the cellular segment in the past couple of months with high subscriber addition, the competition in the circles of Mumbai and Delhi is expected to keep the ARPUs low.

Progressive network expansion affected Tata Teleservices (Mah.) bottomline After progressive network expansions, the revenue for the quarter ended at Rs 216.36 crore is up by 26%. The operating profits for the quarter and the full year remains negative. The bottomline for the quarter and full year were at loss of Rs 177.96 crore and loss of Rs 527.86 crore respectively. Tata Teleservices (Maharashtra), plans to expand its mobile services to 175 towns during the year 2005-06. Besides the urban areas, the rural sector too is set to benefit from Tata Indicom "MEGA" expansion drive. To cater to the fast growing mobile base of the company in Mumbai and Maharashtra, it is expected to scale up its capacity to cater to the needs of more than 2.5 million subscribers by the end of the year. During 2005-06, the company plans to increase its site count by approximately 1.5 times in Maharashtra.

Broadband connections have also started to grow steadily since beginning of this year. During the month of April 2005 approximately 44,000 additional Broadband Connections were provided taking the total Broadband Connections in the country to 2.28 lakhs. In pursuance to the Broadband Policy announced in October 2004, it is expected that the number of broadband subscribers would be 3 million by 2005 and 20 million by 2010.

And to encourage faster expansion of broadband connectivity through wireless, the low power indoor and outdoor usage of WI-FI and WI-MAX Systems has been de-licensed in certain bands. The SACFA/WPC clearance has been simplified. The setting up of National Internet Exchange of India (NIXI) would enable bringing down the international bandwidth cost substantially, thus making the broadband connectivity more affordable. During the year 2005-06, BSNL and MTNL have planned to provide 12.32 lakh and 5.5 lakh broadband connections respectively. A World Bank Project is being implemented for spectrum management and for augmenting the wireless monitoring systems with an outlay of Rs.200 crore.

Moving forward, the basic services business is expected to be subdued with high competition in the cellular services. During the year the performance bank guarantee for the NLD Service licencees was reduced from Rs 100 crore to Rs 50 crore. To encourage end-to-end bandwidth provision, the licence fee for Infrastructure Providers-II has also been reduced from 15 per cent to 6 per cent of the Adjusted Gross Revenue (AGR) in June 2004. Similarly, ISPs were also permitted to use underground copper cable for establishing their own last mile linkages. Any further cut in regulatory costs will prove healthier for service providers. The fourth quarter results as expected were buoyant from Bharti and MTNL due to growth in mobile segment. The appropriate allocation of spectrum and capacity expansion is bound to keep mobile subscriber base growth in right path. The key for further penetration is value-added services, network expansion and low handset prices.

8. REVENUE GROWTH

The revenue growth has been achieved despite sustained fall in tariffs. According to TRAI press release, the minimum effective per minute charge for local outgoing calls for post-paid mobile service has come down from Rs. 1.90 in March 2004 to Rs.1.20 in March 2005 showing a decline of 35%. The increase in subscriber base numbers and reduction of tariff (subsequent to lower access deficit charges) have resulted in high growth in, international long distance, Minutes of Usage. The operating profit (standalone) margins for service providers the quarter witnessed healthy rise. However, taking into consideration, the consolidated figures for Bharti Televentures for the quarter ended June 2004, the operating profit margins, for the quarter ended June 2005, were lower. Consequent to ADC cut the access and interconnects costs decreased for the quarter and it is expected to be stable moving forward, if there is no further cut.

We have compared consolidated figures of Bharti Televentures (BTVL) for the quarter ended June 2004 with stand alone (wherein erstwhile subsidiaries have since been merged) financials for the quarter ended June 2005. Bharti Televentures, the most integrated player, on YoY basis for the quarter ended June 2005 revenue saw growth of 48% to Rs 2524.90 crore, which coupled with improvement in margins to 37.3% has lead to impressive 52% rise in operating profit to Rs 941.50 crore. The company also benefited from 75% fall in Interest costs to Rs 19.90 crore, 147% rise in other income to Rs 13.70 crore. Finally, the company reported impressive 70% surge in net profit to Rs 504.10 crore in the quarter ended June 2005.

BTCL recorded after 60% growth in mobile subscriber base and 33% growth in broadband and telephone subscriber base. Although the ARPU decreased by 4% there was 19% increase in minutes of use due to lower tariffs. The prepaid churn for the company's mobile services saw significant decrease from 8.2% to 6.7%. The company also witnessed significant rise in non-voice revenue (as % of mobile revenue) from 5.9% to 10.2%. The company offers GSM mobile services in all the 23-telecom circles of India. With 12,256,284 (up by 60%) GSM mobile customers in the circles accounted for a market share of 27.3% of All India GSM market and 21.5% of overall wireless (GSM + CDMA) respectively, as on June 30, 2005.

Another listed player in the digital mobile space, Tata Teleservices (Maharashtra) (TTML) with 91% growth in subscriber base, reported 23% rise in revenue for the quarter ended June 2005 to Rs 239.69 crore. During this period, TTML acquired 1.79 lakh net subscribers as a result of which its end of period subscriber base increased to 11.84 lakh. This represents an increase of 91% over its subscriber base as on June 30, 2004. During the quarter, TTML launched Local calling across Maharashtra. TTML focused on increasing market share, revenue, and higher Value-Added-Services penetration and customer experience.

TTML's operating profit margin also increased from 1.5% to 4.0% after significant decrease in Interconnect and other access costs along with Administration and other expenses. Operational efficiency initiatives brought down the costs. TTML reduced its costs per subscriber by 40% compared to corresponding quarter of previous year. After a dip in Administration and other

expenses along with a decrease in Interconnect and other access costs resulted in 222% rise in operating profits ended to Rs 9.70 crore. The company (Formerly Hughes Tele.com (India)) provides telecom services in the circles of Maharashtra and Mumbai.

VSNL is a leading provider of International Telecommunications Services. It is India's largest player in International Long Distance services and has a strong pan-India domestic Long Distance presence. VSNL is also a leading player in the Corporate Data Market in India today with a strong service offering covering IPLCs, Frame relay, ATM and MPLS based IP-VPN services. The company has a strong infrastructure base that covers multiple submarine cable systems, switching gateways, IP PoPs and earth stations.

VSNL's revenue grew by 15% to Rs 914.90 crore in the quarter ended June 2005. Its telephone and related services grew by 16% to Rs 901.10 crore, contributing to 98% of total revenue. This includes international voice and data services. The operating profit margin eased by 140 basis point to 27.0%, restricting the growth in operating profits to 10% at Rs 247.30 crore. However, 46% surge in depreciation to Rs 79.60 crore has led to a flat profit of Rs 127.00 crore in the quarter ended June 2005.

Coming to the basic service space, MTNL saw 17% decrease in revenue from basic services, which contributed to 94% of total revenue. However, the company has already seen growth in mobile subscriber base after fresh efforts by the management to invest vigorously into wireless segment. The cellular division saw 97% rise in revenue at Rs 103.45 crore contributing to 6% of total revenue. Overall revenue for the company went

down by 9% to Rs 1264.11 crore. Also, its operating profit margins fell to 18.7% in the quarter ended June 2005, due to higher revenue sharing costs and administrative and operative costs. The operating profits fell by 40% to Rs 236.37 crore. In the end, the company reported 26% fall in net profit to Rs 172.49 crore.

After extensive network expansion in the sector coupled with high strategic investment activities, the 7 telecom service players reported 19% rise in Interest costs to Rs 111 crore and 32% rise in provision for depreciation to Rs 674 crore. As a result, PBT jumped by 119% to Rs 787 crore. The tax industry's tax incidence has come down significantly by 1780 basis points to 22.7% in the quarter ended June 2005 from 40.6% in the corresponding previous quarter. As a result, despite 119% surge in PBT, the provision for tax increased by mere 14% to Rs 179 crore. The overall the bottomline for the sector zoomed by 184% to Rs 608 crore in the quarter ended June 2005. However, if we compare aggregates adjusted for consolidated figures of Bharti Televentures for the quarter ended June 2004, then the net profit ended almost flat at Rs 608 crore.

Bharti Televentures has comprehensive plan to enhance its services further to 5000 towns from current presence in 2700 towns out of which around 200 towns were added in the quarter ended June 2005. The company has met capex of Rs 970 crore in first quarter out of the total FY06 figure of around Rs 4000 to 4200 crore.

VSNL is multiplying its presence globally with huge set of acquisitions. The Company is set to acquire Teleglobe International Holdings, a leading

provider of wholesale voice, data, IP and mobile signaling services. The acquisition would be carried out through the amalgamation of Teleglobe with the Company's subsidiary in Bermuda. The acquisition value would be \$ 239 million (approx. Rs 1035 crore). The acquisition would give the Company access to an extensive global network that reaches more than 240 countries and territories with advanced voice, data and signaling capabilities and ownership interests or capacity in more than 80 subsea and terrestrial cables. The Company would also access more than 200 direct and bilateral agreements with leading voice carriers.

VSNL has already completed the acquisition of the Tyco Global Network (TGN), a state-of-the-art under sea cable network that spans 60,000 kms and the continents of North America, Europe and Asia. With the acquisition of TGN, the Company is now one of the world's largest providers of submarine cables bandwidth. The Company acquired this network for \$130 million. In India, VSNL is rapidly growing its retail presence under the Tata Indicom brand through its products like high-speed broadband, dial-up Internet, net telephony and has an Internet subscriber base of over 750,000 subscribers. VSNL is consolidating its presence in the Internet space with an increased focus on the Retail Broadband business.

In case of Tata Teleservices (Maharashtra), the company has expanded its geographical reach from 125 towns to 135 towns in Maharashtra and Goa with plans to extend the network to more than 160 towns by end of March 2006. Besides the urban areas, the rural sector too is set to benefit from Tata Indicom 'MEGA' expansion drive. However, additional capital

investments would attract higher depreciation costs before the company could see a turnaround in bottomline. There was 36% decline in interest cost to Rs 30.92 crore along with significant rise in depreciation to Rs 106.44 crore, up by 75%. Although there was no tax provision Rs 30 lakh was provided for fringe benefit tax after which the PAT ended at a loss of Rs 127.69 crore.

The telecommunication market is consolidating to integrated players with enhanced coverage. The recent acquisition of BPL communications by Essar Teleholdings for over Rs 4400 crore (Rs 16,800 per subscriber) is another milestone towards the consolidation phase. The former has 100 per cent ownership of BPL Mobile Cellular, which offers services in Maharashtra and Goa, Tamil Nadu and Pondicherry and Kerala circles. Consequent to this deal, Hutchison Essar would have 11.06 million subscribers with 24.6% of market share in the GSM market second to Bharti Televenture's market share of 27.28% of total GSM market. Further consolidation is expected with existence of small players like Aircel (in Tamilnadu circle with subscriber base of 1.86 million) and Spice communications (in Karnataka and Punjab circle with subscriber base of 1.47 million).

9. GOVERNMENT POLICY

The industry's fate is extremely susceptible to government's policies. Although the sector was opened to private competition almost ten years back, the same is not reflected in either telephone penetration or investment in the sector due to unclear or/and frequently changing government policies as also due to anti-private sector attitude of BSNL/MTNL.

However, change-over from fixed license fees to revenue-sharing-cum-entry fee regime has taken away one of the most important obstacles to telecom growth in India as the high license fees quoted by the players under the earlier regime had made projects of most of them totally unviable. The New Telecom Policy of 1999 has considerably eased the ground rules.

The recent opening up of long distance telephony to private sector is a milestone. Monopoly of VSNL with regards to internet services and internet gateways has already been lifted and now we have large number of ISPs and many private internet gateways.

There is significant advancement on the divestment front as well with the Tata group, the largest Indian business house, formally taking over the management control of VSNL on 13 February 2002 from the Centre by signing the shareholders agreement in Mumbai. The Tatas, presented a cheque of Rs 1,439 crore as payment towards acquiring 25% equity stake in VSNL. The Centre sold 25% of its 52.97% stake at a price of Rs 202 per share.

Earlier, the share purchase agreement between the government of India, VSNL and Panatone Finvest, as investing vehicle, and the four Tata group companies as its principals viz Tata Sons, Tata Power, Tata Iron & Steel Company and Tata Industries, was signed on 6 February 2002 for the transfer of 25% of the subscribed and paid-up capital of VSNL. The government has also indicated its plans to divest its stake in MTNL and BSNL but no time frame has been set for the divestment.

In a major initiative, the government has announced that internet telephony will be opened up from April '02, coinciding with removal of monopoly of VSNL over International long distance operations (ILDO).

In another major move, the Centre granted a licence to Reliance and a letter of intent to four other entities for providing international long distance (ILD) services. These include one Indian company - the Bharti group and three overseas companies - Internet access company Data Access, the Indian unit of Hong Kong's Pacific Century Cyberworks and Connecting Networks. The four entities would have to pay an entry fee of \$5 million each before they are granted final licences.

Also, the Centre is understood to have received three more applications for ILD telephony licences from Spice Corporation, Aircell and Satyam Infoway (Sify). With this, the total number of ILD applicants has now touched eight.

While Spice has named STT Communications as its partner, Aircell is planning to go along with Asia Tech Mauritius and the Mauritius-based Cellunet of India. Sify has named Sterling Commerce International Inc and the Government of Singapore Investment Corporation as its partners for the venture.

Earlier the government was waiting for TRAI's recommendations on ILDO. Recently, TRAI has suggested unlimited competition in the ILD services sector. It has also suggested a one time entry fee of Rs 25 cr and an unconditional bank guarantee for Rs 25 cr for fulfilling the stipulated rollout conditions. Further, the annual license fee of 15% of the gross revenue, including the universal services obligation, is also stipulated.

In a major initiative, the government has accepted all the recommendations of TRAI on ILD operations. Unlike NLD services, wherein the operator has to lay nation wide network of optical fibre cable, the ILD services can be launched by setting up gateways and entering into agreements with the ILD providers. Hence, the investment in ILD segment will be very low compared to NLD segment.

Trai functions as an independent regulatory body while the Telecom Commission is vested with executive and policy-making powers. Recently, the government also relaxed the norms of FDI into this sector. The foreign cap of 49% was raised to 74% in ISP, Internet gateways, radio paging services and end-to-end bandwidth services. In basic and cellular services, however, the sectoral cap would continue at the existing 49% level.

10. DEMAND DRIVERS

The most important factor is the abysmally poor telephone penetration of 10 lines per 100 population as against the world average of close to 15 and a very high 50-60 in some of the advanced countries. India has set for itself a stiff target to achieve a 15 by 2010. This translates to an addition of approximately 175 million lines by 2010. The rural tele-density has been targeted at 4 by 2010 with reliable telecom facilities in all villages.

Government's massive investment plans amounting to Rs 832.50 billion for infrastructure is another factor. As the government opens up long distance telephony, a dozen corporations has plans for Rs 36,000 crore investment in the sector.

Growing cellular market due to aggressive marketing by companies will get a boost with the increasing demand with changing lifestyles in metros, mini-metros and other select pockets of the country. The cost of mobile calls and the handsets are falling fast after the entry of MTNL. The availability of limited mobile services based on wireless in local loop technology will further expand the market for mobile services as these services are perceived to be far cheaper than the existing GSM-based mobile services.

Government is seriously considering reduction in excise and customs duties for telecom products. Latest budget has already reduced the import duty on cellular handsets to 5% from 25%. The growth and spread of Internet and other IT-enabled services are also strong demand drivers for the telecom sector.

11. STRATEGIC IMPERATIVES

The sector being capital intensive, government was the only player so far. Though private players are now permitted, only large players with deep pockets can enter and operate successfully in this field. Smaller players are likely to sell out or merge with larger players. Again, the industry is very technology-intensive and hence the chances of obsolescence are immense for different modes of communication. In advanced countries this has already changed the dynamics and the structure of the industry.

Digital revolution is fast catching up and companies that remain alert to changes and adapt accordingly in no time can only survive. The buzz word is broadband and integrated services encompassing basic, ISP, STD/ISD, mobile and other value-added services under one roof or through consortium and alliances.

The earnings in the sector hinge on government policies to a great extent. Cellular service is a classic example. Role of Trai in tariff fixation is a clear indication. In fact, one of the key issues in the telecom sector since liberalisation has been the regulatory framework. However, the reconstitution of the Trai and the creation of the Telecom Dispute Settlement and Appellate Tribunal (TDSAT) are significant steps and will strengthen the regulatory mechanism and provide an expeditious mechanism to resolve disputes.

The earnings of operators in basic service depend directly on the number of DELs it is metered per the number of calls made. Higher utilization implies higher earnings. The entry of private sector will take some business away from MTNL. Hughes Ispat is targeting the lucrative commercial sector with incentives and sops. About 10% of MTNL's clients (the commercial users) contribute to over 70% of its revenue points to this type of risk. The prospective reduction in tariffs would increase the number of call minutes. As local calls are subsidized by long distance calls, the recent tariff hike announced by Trai for local calls may impact usage especially residential, but reduction in STD/ISD rates may increase the overall usage.

Despite the spurt in cellular subscriptions, operator's finances are worst due to huge license fees and low talk time records. MTN'LS entry is putting pressure on to other operators in Mumbai and Delhi as it has priced its services lower than the existing service providers. Similarly, with BSNL launching cellular services nationwide shortly, the competition is bound to intensify further which in all likelihood will lead to lower realisation on account of price war.

As the world is increasingly getting connected with the advent of Internet and its different value-additions, telecom industry's prospects are probably the best. With a tele density of 2.9 telephone lines per 100 inhabitants against a world average of 15, the potential for growth is enormous in this sector. Besides, the government has targeted 15 lines per 100 people by the year 2010. With deregulation and entry of large number of private basic service providers, the industry's growth potential has skyrocketed. The demand for telecom services in India is not limited to basic telephone services but also to value-added services like cellular, radio paging, Internet and global mobile communication by satellite services.

The telecommunications service market is forecast to grow 24% annually over the next three years and more than double in value to Rs 77,000 crore (\$16.1 billion) by 2004/05 from the current Rs 32,500 crore in 2000-01, as per market researcher CRIS INFAC.

It forecast the Indian market for basic telecom services will grow 18.5% per year over to double in value to Rs 53,200 crore in the year to March 2005, from Rs 27,000 crore in the year 2000-01.

The number of phone lines over the same period is expected to nearly double to 59.3 million from 32.2 million. CRIS INFAC expects the demand to increase at an average annual rate of 13.9% in the "A" category circles, till March 2005. During the period March 2001 to March 2005, demand is expected to increase by 15.8% in the "B" category circles and 22.7% in the "C" category circles.

The waiting list for telephone lines is expected to decline 8.2% of demand by end-March 2001 to 4.7% of demand by end-March 2005.

According to a study by Deutsche Bank, though the number of cellular subscribers is expected to increase, the cellular operators' revenue is estimated to increase by a lower rate. The growth in subscriber base is not fully reflected in the growth in revenues as the average revenue per user (ARPU) is expected to fall.

Further, the study predicts that by 2004-05, the cellular subscriber base would shoot up to 24 million and the cellular operators' revenue will zoom to Rs 137 billion while the ARPU would be Rs 5623. Also, the share of pre-paid cards in the subscriber base will shoot up to 58% in 2004-05 from a mere 23% in 2000-01. The share of pre-paid cards is expected to be 38% in 2001-02 and to 50% in 2002-03. The study further reveals that, the revenues from pre-paid card segment is estimated to increase from Rs 11 billion in FY 2001-02 to Rs 70 billion by 2004-05. During the same period, revenues from post paid connections will increase from Rs 37 billion to Rs 67 billion.

In another study by research firm Gartner, the number of cellular connections in India is expected to touch 70 million by 2007, as cut-throat price war lures consumers. The market is projected to grow at a CAGR of 39% to notch up a base of 70 million subscribers by 2007.

A recent research by Gartner indicates that the number of cellular connections in Asia Pacific would increase to 797.8 million by 2007 while cellular services revenue would touch US\$142.9 billion.

A strategic research by Frost & Sullivan estimates that the Indian basic telecommunications equipment market will reach a level of \$ 8 billion by 2003 which was just \$ 0.9 billion during 1996-97. The transmission equipment

industry and, more so, the WLL, though currently it is not being manufactured in India, is expected to generate revenues of \$1.423 billion during 2002-2003. The convergence of entertainment, media and telecom would again only increase the need for more telecommunication facilities.

The changes are expected to bring in an investment of \$ 37 billion (Rs 1,72,400 crore) by 2005 and \$ 69 billion (Rs 3,21,500 crore) by 2010.

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CHAPTER – 5
DATA ANALYSIS
OF
RESPONSES
OF
CUSTOMERS

CHAPTER – 5

DATA ANALYSIS OF RESPONSES **OF CUSTOMERS**

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CHAPTER – 5

The researcher has presented Age wise Analysis of the Respondents, Sex wise Analysis of the Respondents, Education wise Analysis of the Respondents, Educational Stream wise Analysis of the Respondents, Income wise Analysis of the Respondents, Profession wise Analysis of the Respondents, Experience wise Analysis of the Respondents, Service Provider wise Analysis of the Respondents, Connection Type wise Analysis of the Respondents, Years of Experience of Mobile Usage wise Analysis of the Respondents, Analysis of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents, Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents of Hutch Brand, Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents of Idea Brand, Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents of Airtel Brand, Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents of Reliance Brand, Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents of Tata Brand, Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents of BSNL Brand, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter the Best Operating Network, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Effective Pricing Strategy, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Wider Network Coverage, Analysis of

the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Efficient Information Sharing Process, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Highness of Brand Loyalty of Respondent, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Effective Handling during Peak Load, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Good Customer Service, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Professional Approach for Services, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Comparatively Low Cost, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Very Good Billing System, Analysis of the Opinion about the Present Mobile Phone Service Provider of Respondents for parameter Bill Collection Facility and Analysis of Agreement Levels of various service parameters of various mobile phone service providing companies and hypotheses testing thereof as below,

5.1 Age wise Analysis of the Respondents:

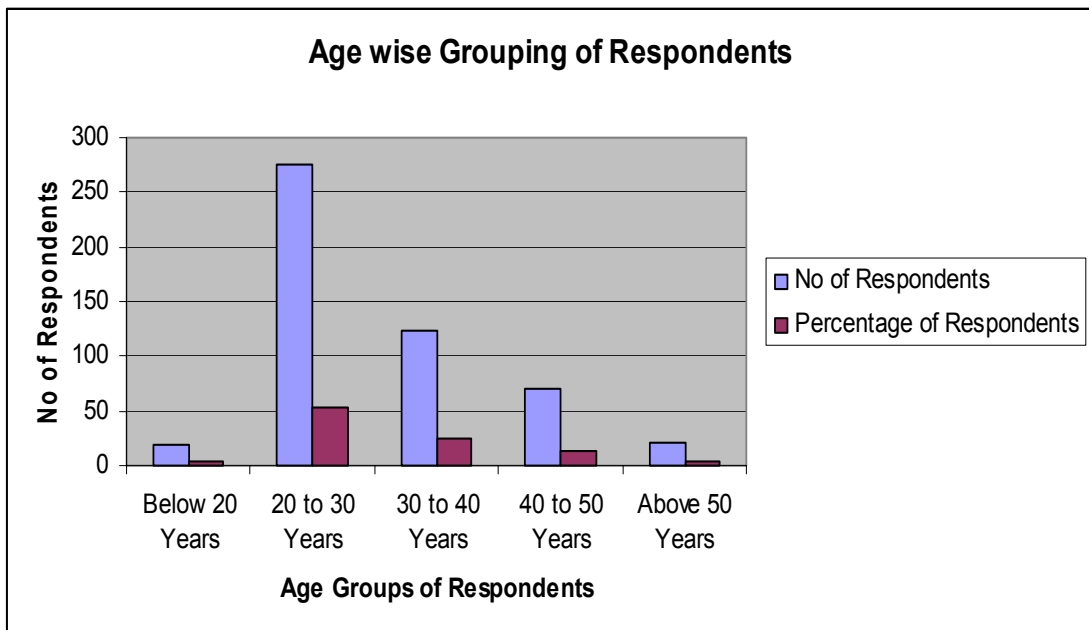
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The age wise grouping of respondents is shown in below mentioned table 5.1 and chart 5.1,

Table 5.1

Age wise Analysis of the Respondents

Sr No	Age Group	No of Respondents	Percentage of Respondents
1	Below 20 Years	19	3.7
2	20 to 30 Years	276	54.1
3	30 to 40 Years	124	24.3
4	40 to 50 Years	70	13.7
5	Above 50 Years	21	4.1
	Total	510	100

Chart 5.1



Out of 510 respondents replied to the researcher, 19 respondents were having age of below 20 years, 276 respondents were having age of 20 to 30 years, 124 respondents were having age of 30 to 40 years, 70 respondents were having age of 40 to 50 years and 21 respondents were having age of

above 50 years. Percentages of respondents according to their age were 3.7 % of respondents in below 20 years of age group, 54.1 % of respondents in between 20 to 30 years of age group, 24.3 % of respondents in between 30 to 40 years of age group, 13.7 % of respondents in between 40 to 50 years of age group and 4.1 % of respondents in above 50 years of age group.

5.2 Sex wise Analysis of the Respondents:

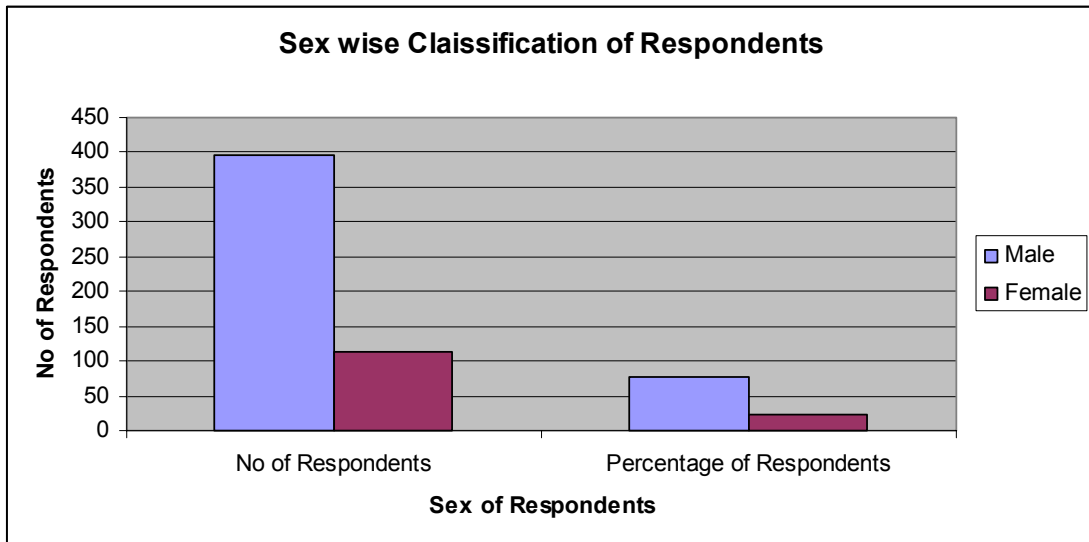
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The sex wise grouping of respondents is shown in below mentioned table 5.2 and chart 5.2,

Table 5.2

Sex wise Analysis of the Respondents

Sr No	Sex	No of Respondents	Percentage of Respondents
1	Male	396	77.6
2	Female	114	22.4
	Total	510	100

Chart 5.2



Out of 510 respondents replied to the researcher, 396 were male respondents and 114 were female respondents. Percentages of respondents according to their sex were 77.6 % of respondents in male group and 22.4 % of respondents in female group.

5.3 Education wise Analysis of the Respondents:

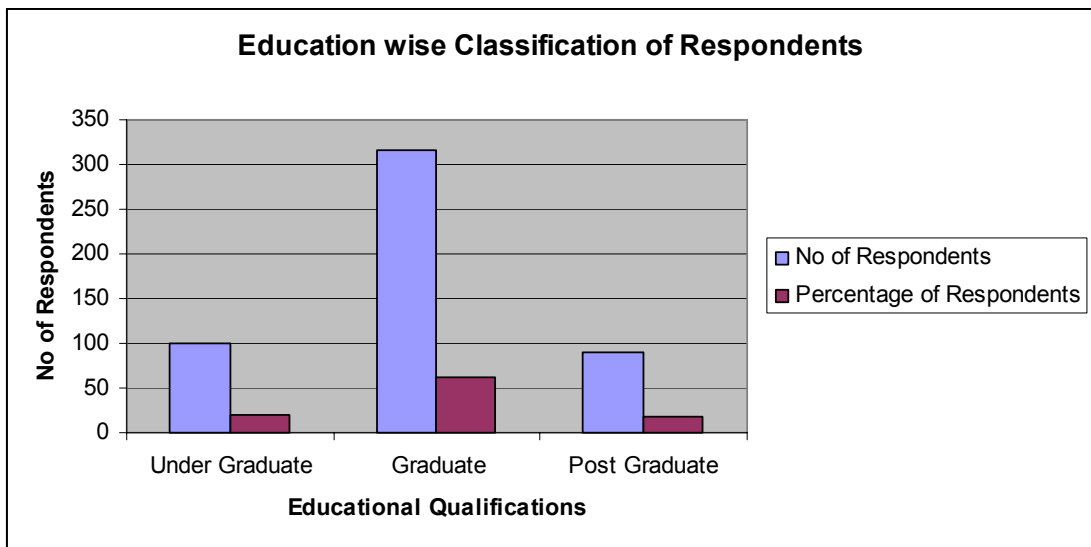
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The education wise grouping of respondents is shown in below mentioned table 5.3 and chart 5.3,

Table 5.3

Education wise Analysis of the Respondents

Sr No	Educational Qualifications	No of Respondents	Percentage of Respondents
1	Under Graduate	101	19.9
2	Graduate	316	62.3
3	Post Graduate	90	17.8
	Total	510	100

Chart 5.3



Out of 510 respondents replied to the researcher, 101 respondents were under graduate, 316 respondents were graduates and 90 respondents were post graduate. Percentages of respondents according to their educational qualification were 19.9 % of respondents in under graduate group, 62.3 % of respondents in graduate group and 17.8 % of respondents in post graduate group.

5.4 Educational Stream wise Analysis of the Respondents:

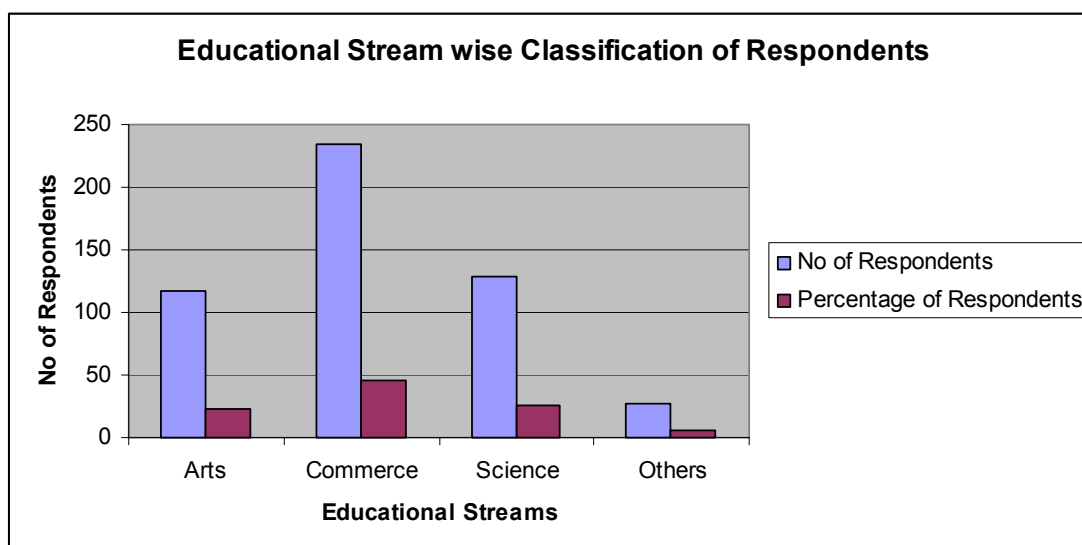
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The educational stream wise grouping of respondents is shown in below mentioned table 5.4 and chart 5.4,

Table 5.4

Educational Stream wise Analysis of the Respondents

Sr No	Educational Steams	No of Respondents	Percentage of Respondents
1	Arts	117	23.1
2	Commerce	235	46.4
3	Science	128	25.2
4	Others	27	5.3
	Total	510	100

Chart 5.4



Out of 510 respondents replied to the researcher, 117 respondents were from arts educational stream, 235 respondents were from commerce educational stream, 128 respondents were from science educational stream and 27 respondents were from other educational streams. Percentages of respondents according to their educational stream were 23.1 % of respondents in arts stream, 46.4 % of respondents in commerce stream, 25.2 % of respondents in science stream and 5.3 % of respondents in other educational streams.

5.5 Income wise Analysis of the Respondents:

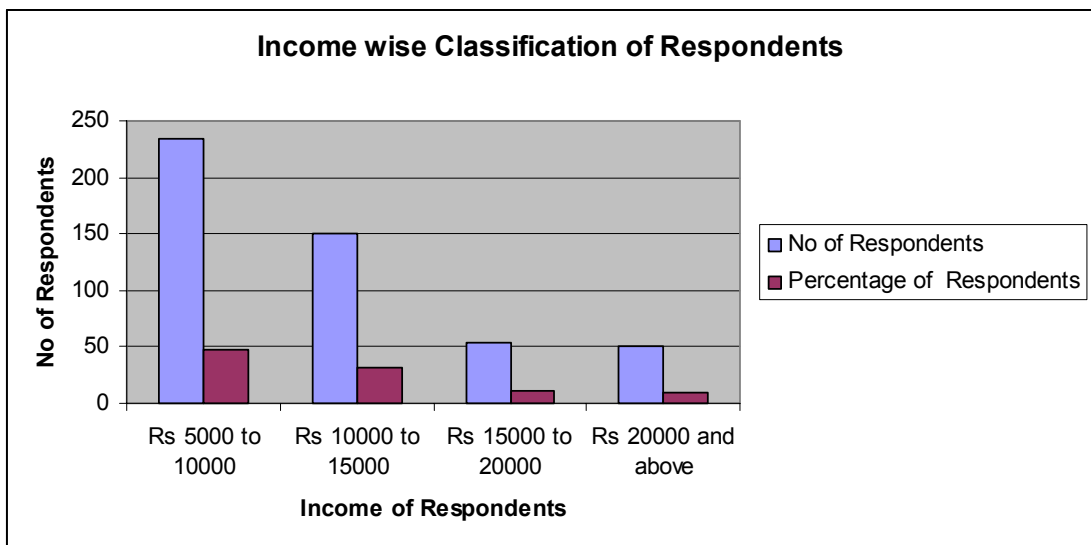
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The income wise grouping of respondents is shown in below mentioned table 5.5 and chart 5.5,

Table 5.5

Income wise Analysis of the Respondents

Sr No	Income Groups	No of Respondents	Percentage of Respondents
1	Rs 5000 to 10000	234	47.9
2	Rs 10000 to 15000	151	30.9
3	Rs 15000 to 20000	54	11.0
4	Rs 20000 and above	50	10.2
	Total	489	100

Chart 5.5



Out of 510 respondents replied to the researcher, 489 respondents have given the details of their income out of them 233 respondents were in income group of Rs 5000 to 10000, 151 respondents were in income group of Rs 10000 to 15000, 54 respondents were in income group of Rs 15000 to 20000 and 50 respondents had income more than Rs 20000. Percentages of

respondents according to their income were 47.9 % of respondents in income group of Rs 5000 to 10000, 30.9 % of respondents in income group of Rs 10000 to 15000, 11.0 % of respondents in income group of Rs 15000 to 20000 and 10.2 % of respondents having income more than Rs 20000.

5.6 Profession wise Analysis of the Respondents:

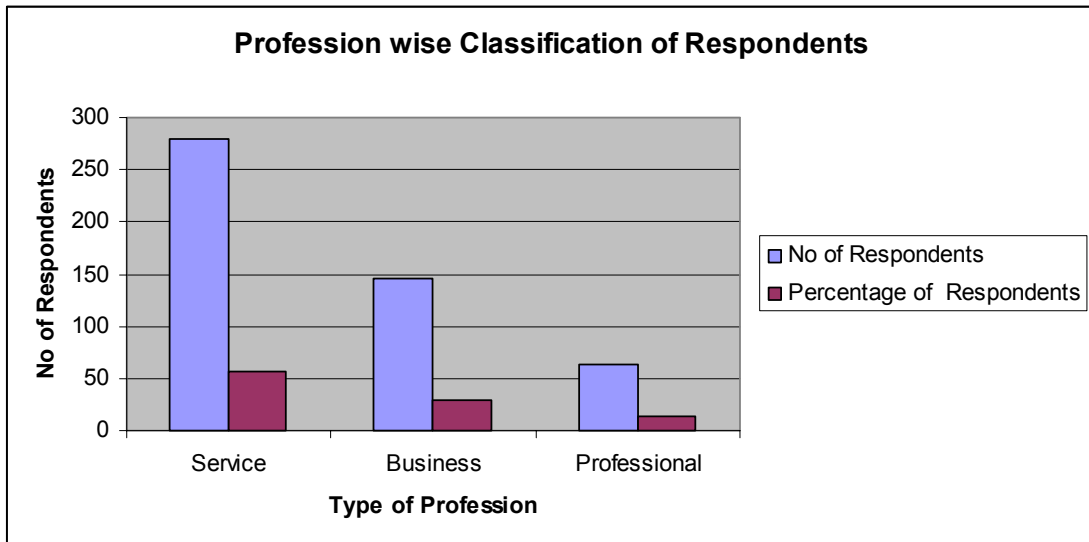
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The profession wise grouping of respondents is shown in below mentioned table 5.6 and chart 5.6,

Table 5.6

Profession wise Analysis of the Respondents

Sr No	Profession	No of Respondents	Percentage of Respondents
1	Service	280	57.3
2	Business	145	29.7
3	Professional	64	13.1
	Total	489	100

Chart 5.6



Out of 510 respondents replied to the researcher, 489 respondents have given the details of their profession out of them 280 respondents were in service group, 145 respondents were in business group and 64 respondents were in professional group. Percentages of respondents according to their profession were 57.3 % of respondents in service group, 29.7 % of respondents in business group and 13.1 % of respondents in professional group.

5.7 Experience wise Analysis of the Respondents:

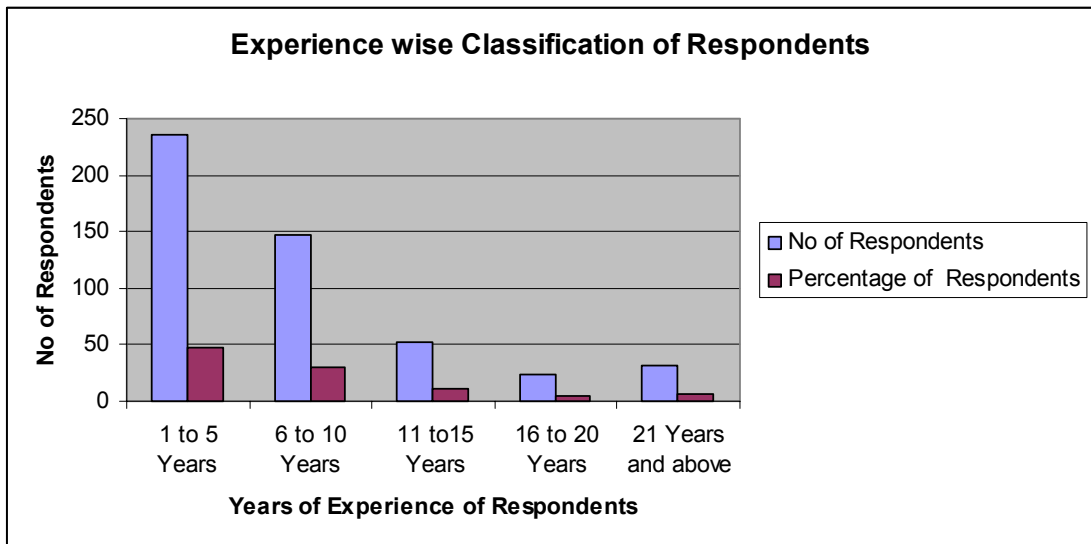
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The experience wise grouping of respondents is shown in below mentioned table 5.7 and chart 5.7,

Table 5.7

Experience wise Analysis of the Respondents

Sr No	Range of Experience	No of Respondents	Percentage of Respondents
1	1 to 5 Years	235	48.1
2	6 to 10 Years	147	30.1
3	11 to 15 Years	53	10.8
4	16 to 20 Years	23	4.7
5	21 Years and above	31	6.3
	Total	489	100

Chart 5.7



Out of 510 respondents replied to the researcher, 489 respondents have given the details of their experience in their respective profession, out of them 235 respondents were having 1 to 5 years of experience, 147 respondents were having 6 to 10 years of experience, 53 respondents were

having 11 to 15 years of experience, 23 respondents were having 16 to 20 years of experience and 31 respondents were having more than 21 years of experience. Percentages of respondents according to their experience in their respective professional were 48.1 % of respondents in 1 to 5 years experience group, 30.1 % of respondents in 6 to 10 years experience group, 10.8 % of respondents in 11 to 15 years experience group, 4.7 % of respondents in 16 to 20 years experience group and 6.3 % of respondents having more than 21 year experience in their respective profession.

5.8 Service Provider wise Analysis of the Respondents:

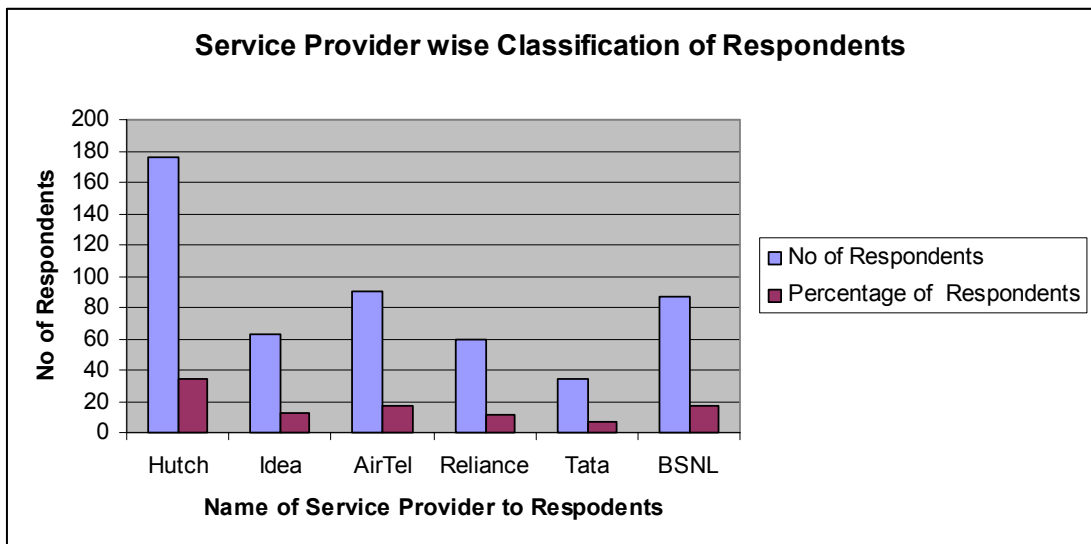
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The service provider wise grouping of respondents is shown in below mentioned table 5.8 and chart 5.8,

Table 5.8

Service Provider wise Analysis of the Respondents

Sr No	Name of Service Provider	No of Respondents	Percentage of Respondents
1	Hutch	176	34.5
2	Idea	63	12.4
3	Airtel	90	17.6
4	Reliance	60	11.8
5	Tata	34	6.7
6	BSNL	87	17.1
	Total	510	100

Chart 5.8



Out of 510 respondents replied to the researcher, 176 respondents were having Hutch brand as service provider, 63 respondents were having Idea brand as service provider, 90 respondents were having Airtel brand as

service provider, 60 respondents were having Reliance brand as service provider, 34 respondents were having Tata brand as service provider and 87 respondents were having BSNL brand as service provider. Percentages of respondents according to their service provider were 34.5 % of respondents with Hutch as service provider, 12.4 % of respondents with Idea as service provider, 17.6 % of respondents with Airtel as service provider, 11.8 % of respondents with Reliance as service provider, 6.7 % of respondents with Tata as service provider and 17.1 % of respondents with BSNL as service provider.

5.9 Connection Type wise Analysis of the Respondents:

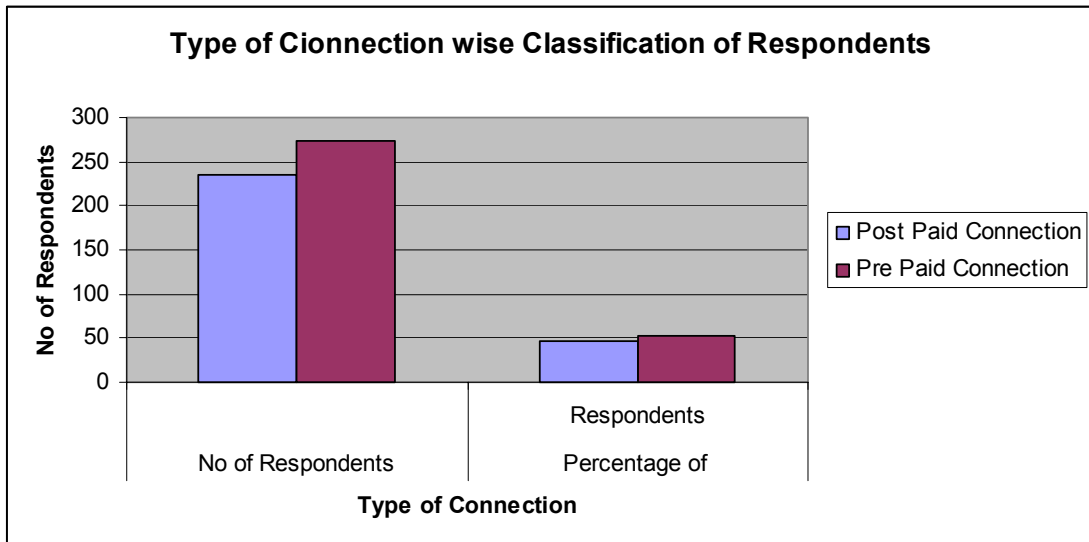
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The type of connection wise grouping of respondents is shown in below mentioned table 5.9 and chart 5.9,

Table 5.9

Connection Type wise Analysis of the Respondents

Sr No	Type of Connection	No of Respondents	Percentage of Respondents
1	Post Paid Connection	236	46.3
2	Pre Paid Connection	274	53.7
	Total	510	100

Chart 5.9



Out of 510 respondents replied to the researcher, 236 respondents were having post paid mobile connection and 274 respondents were having pre paid mobile connection. Percentages of respondents according to type of connection were 46.3 % of respondents with post paid connection and 53.7 % of respondents with pre paid connection.

5.10 Years of Experience of Mobile Usage wise

Analysis of the Respondents:

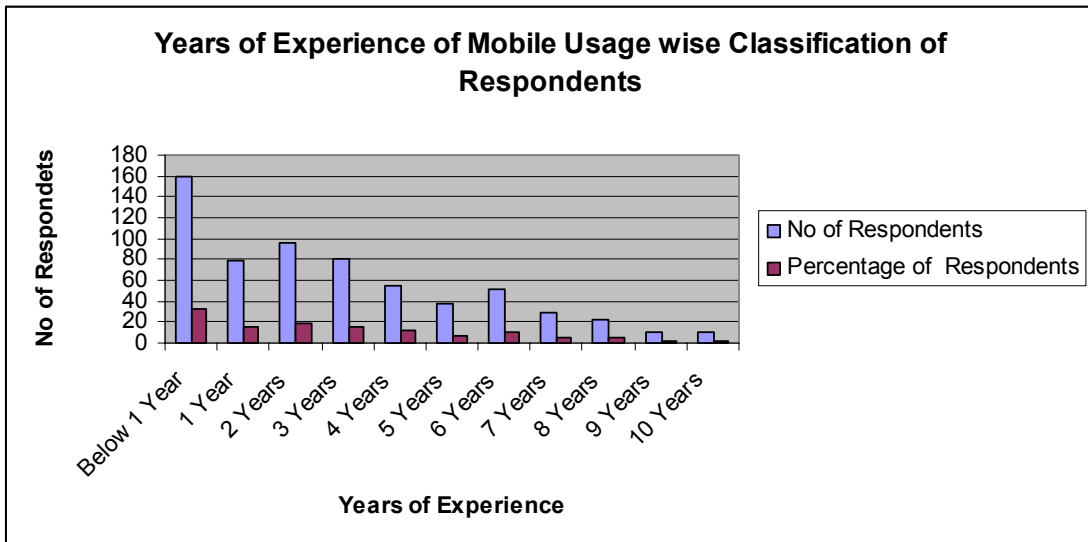
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The years of experience of mobile usage wise grouping of respondents is shown in below mentioned table 5.10 and chart 5.10,

Table 5.10

Years of Experience of Mobile Usage wise Analysis of the Respondents

Sr No	Years of Experience	No of Respondents	Percentage of Respondents
1	Below 1 Year	160	33.3
2	1 Year	79	16.0
3	2 Years	96	19.5
4	3 Years	80	16.2
5	4 Years	55	11.2
6	5 Years	37	7.5
7	6 Years	52	10.5
8	7 Years	29	5.9
9	8 Years	22	4.5
10	9 Years	10	2.0
11	10 Years	10	2.0
	Total	493	100

Chart 5.10



Out of 510 respondents replied to the researcher, 493 respondents have given the details of their experience of their mobile usage, out of them 23 respondents were having below 1 year experience of mobile usage, 79 respondents were having 1 year experience of mobile usage, 96 respondents were having 2 year experience of mobile usage, 80 respondents were having 3 years experience of mobile usage, 55 respondents were having 4 years experience of mobile usage, 37 respondents were having 5 years experience of mobile usage, 52 respondents were having 6 years experience of mobile usage, 29 respondents were having 7 years experience of mobile usage, 22 respondents were having 8 years experience of mobile usage, 10 respondents were having 9 years experience of mobile usage and 10 respondents were having 10 years experience of mobile usage. Percentages of respondents according to their experience of mobile usages were 4.7 % of respondent with below 1 year experience of mobile usage, 16 % of respondents with 1 year experience of mobile usage, 19.5 % of respondents with 2 year experience of mobile usage, 16.2 % of respondents with 3 years

experience of mobile usage, 11.2 % of respondents with 4 years experience of mobile usage, 7.5 % of respondents with 5 years experience of mobile usage, 10.5 % of respondents with 6 years experience of mobile usage, 5.9 % of respondents with 7 years experience of mobile usage, 22 % of respondents with 8 years experience of mobile usage, 2 % of respondents with 9 years experience of mobile usage and 2 % of respondents with 10 years experience of mobile usage.

5.11 Analysis of the Overall Opinion about the Present

Mobile Phone Services Provider of Respondents:

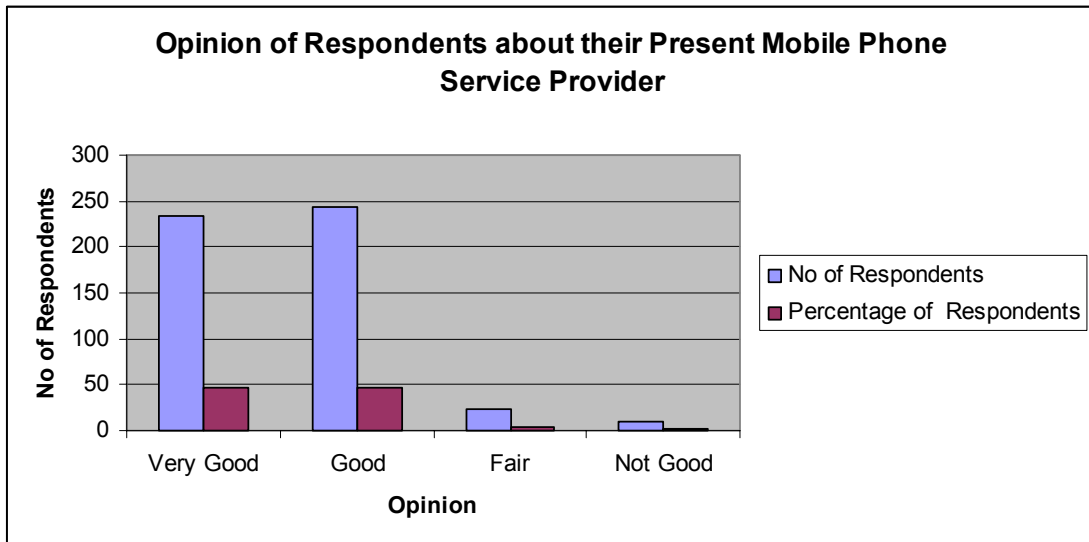
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents is shown in below mentioned table 5.11 and chart 5.11,

Table 5.11

Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents

Sr No	Opinion	No of Respondents	Percentage of Respondents
1	Very Good	234	45.9
2	Good	243	47.6
3	Fair	24	4.7
4	Not Good	9	1.8
	Total	510	100

Chart 5.11



Out of 510 respondents replied to the researcher, 234 respondents were having very good opinion about their present Mobile Phone Services provider, 243 respondents were having good opinion about their present Mobile Phone Services provider, 24 respondents were having fair opinion about their present Mobile Phone Services provider and 9 respondents were having not good opinion about their present Mobile Phone Services provider. Percentages of respondents according to their opinion about their present Mobile Phone Services provider were 45.9 % of respondents with very good opinion about their present Mobile Phone Services provider, 47.6 % of respondents with good opinion about their present Mobile Phone Services provider, 4.7 % of respondents with fair opinion about their present Mobile Phone Services provider and 1.8 % of respondents with not good opinion about their present Mobile Phone Services provider.

5.11.1 Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Hutch Brand:

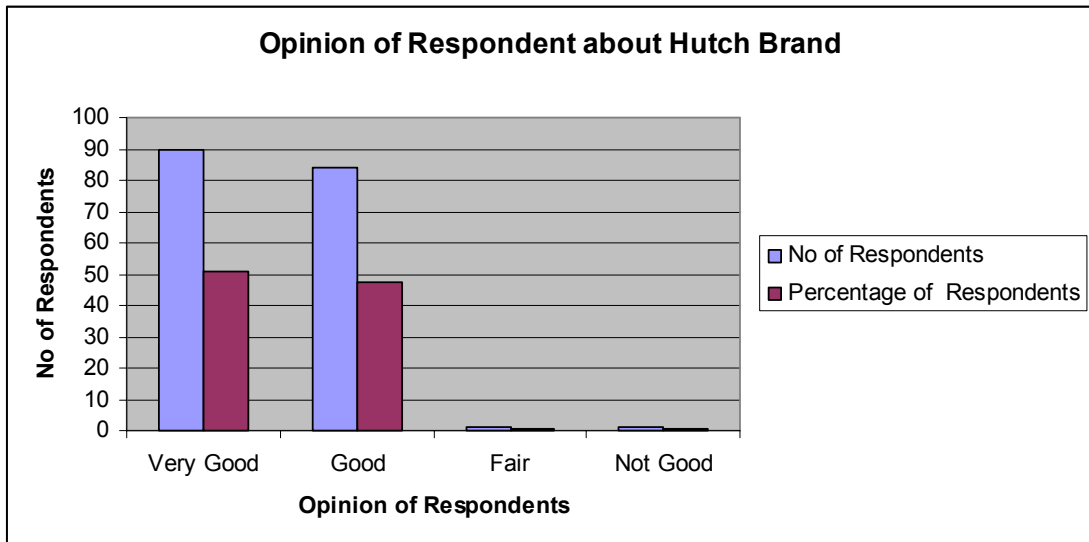
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in perfectly filled up form. The opinion of the present Mobile Phone Services provider of respondents of Hutch brand is shown in below mentioned table 5.11.1 and chart 5.11.1,

Table 5.11.1

Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Hutch Brand

Sr No	Opinion	No of Respondents	Percentage of Respondents
1	Very Good	90	51.1
2	Good	84	47.7
3	Fair	1	0.6
4	Not Good	1	0.6
	Total	176	100

Chart 5.11.1



Out of 510 respondents replied to the researcher, 176 respondents were using Hutch brand of mobile service out of them 90 respondents were having very good opinion about their present Mobile Phone Services provider i.e. Hutch Brand, 84 respondents were having good opinion about their present Mobile Phone Services provider i.e. Hutch Brand, 1 respondent was having fair opinion about their present Mobile Phone Services provider i.e. Hutch Brand and 1 respondent was having not good opinion about their present Mobile Phone Services provider i.e. Hutch Brand. Percentages of respondents according to their opinion about their present Mobile Phone Services provider i.e. Hutch Brand were 51.1 % of respondents with very good opinion about their present Mobile Phone Services provider i.e. Hutch Brand, 47.7 % of respondents with good opinion about their present Mobile Phone Services provider i.e. Hutch Brand, 0.6 % of respondents with fair opinion about their present Mobile Phone Services provider i.e. Hutch Brand and 0.6 % of respondents with not good opinion about their present Mobile Phone Services provider i.e. Hutch Brand.

5.11.2 Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Idea Brand:

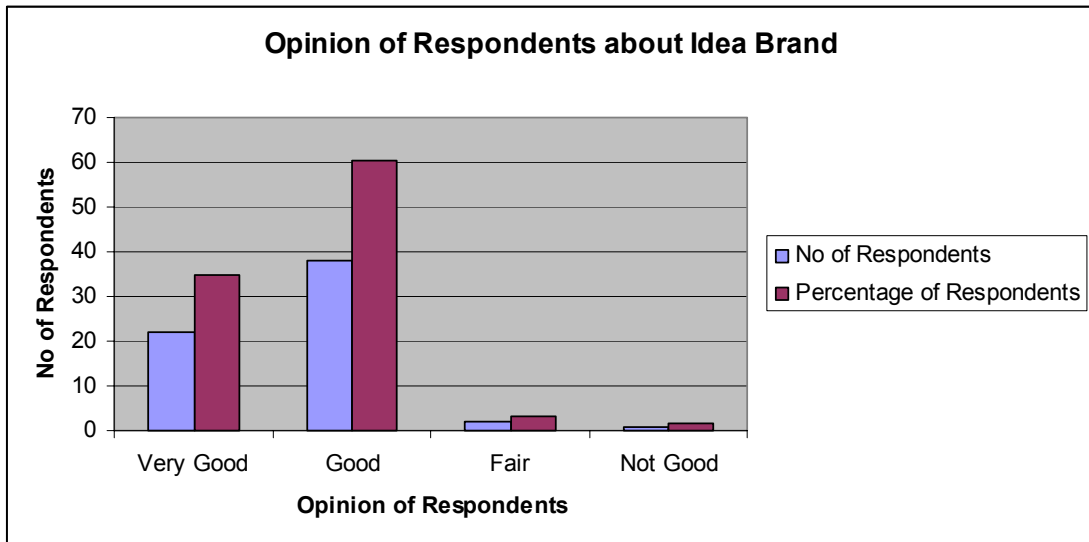
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents of Idea brand is shown in below mentioned table 5.11.2 and chart 5.11.2,

Table 5.11.2

Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Idea Brand

Sr No	Opinion	No of Respondents	Percentage of Respondents
1	Very Good	22	34.9
2	Good	38	60.3
3	Fair	2	3.2
4	Not Good	1	1.6
	Total	63	100

Chart 5.11.2



Out of 510 respondents replied to the researcher, 63 respondents were using Idea brand of mobile service out of them 22 respondents were having very good opinion about their present Mobile Phone Services provider i.e. Idea Brand, 38 respondents were having good opinion about their present Mobile Phone Services provider i.e. Idea Brand, 2 respondents were having fair opinion about their present Mobile Phone Services provider i.e. Idea Brand and 1 respondent was having not good opinion about their present Mobile Phone Services provider i.e. Idea Brand. Percentages of respondents according to their opinion about their present Mobile Phone Services provider i.e. Idea Brand were 34.9 % of respondents with very good opinion about their present Mobile Phone Services provider i.e. Idea Brand, 60.3 % of respondents with good opinion about their present Mobile Phone Services provider i.e. Idea Brand, 3.2 % of respondents with fair opinion about their present Mobile Phone Services provider i.e. Idea Brand and 1.6 % of respondents with not good opinion about their present Mobile Phone Services provider i.e. Idea Brand.

5.11.3 Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Airtel Brand:

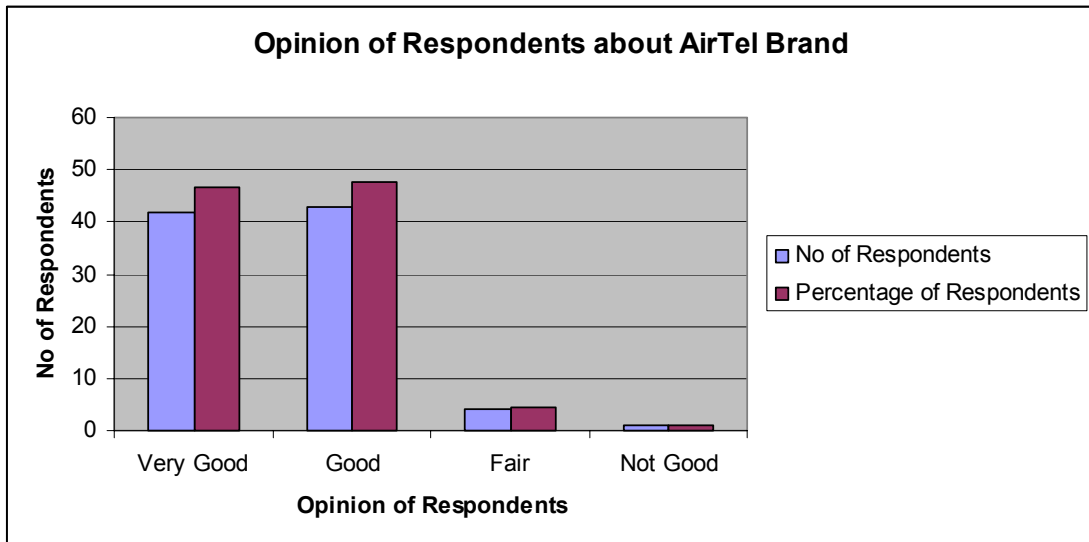
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents of Airtel brand is shown in below mentioned table 5.11.3 and chart 5.11.3,

Table 5.11.3

Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Airtel Brand

Sr No	Opinion	No of Respondents	Percentage of Respondents
1	Very Good	42	46.7
2	Good	43	47.8
3	Fair	4	4.4
4	Not Good	1	1.1
	Total	90	100

Chart 5.11.3



Out of 510 respondents replied to the researcher, 90 respondents were using Airtel brand of mobile service out of them 42 respondents were having very good opinion about their present Mobile Phone Services provider i.e. Airtel Brand, 43 respondents were having good opinion about their present Mobile Phone Services provider i.e. Airtel Brand, 4 respondents were having fair opinion about their present Mobile Phone Services provider i.e. Airtel Brand and 1 respondent was having not good opinion about their present Mobile Phone Services provider i.e. Airtel Brand. Percentages of respondents according to their opinion about their present Mobile Phone Services provider i.e. Airtel Brand were 46.7 % of respondents with very good opinion about their present Mobile Phone Services provider i.e. Airtel Brand, 47.8 % of respondents with good opinion about their present Mobile Phone Services provider i.e. Airtel Brand, 4.4 % of respondents with fair opinion about their present Mobile Phone Services provider i.e. Airtel Brand and 1.1 % of respondents with not good opinion about their present Mobile Phone Services provider i.e. Airtel Brand.

5.11.4 Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Reliance Brand:

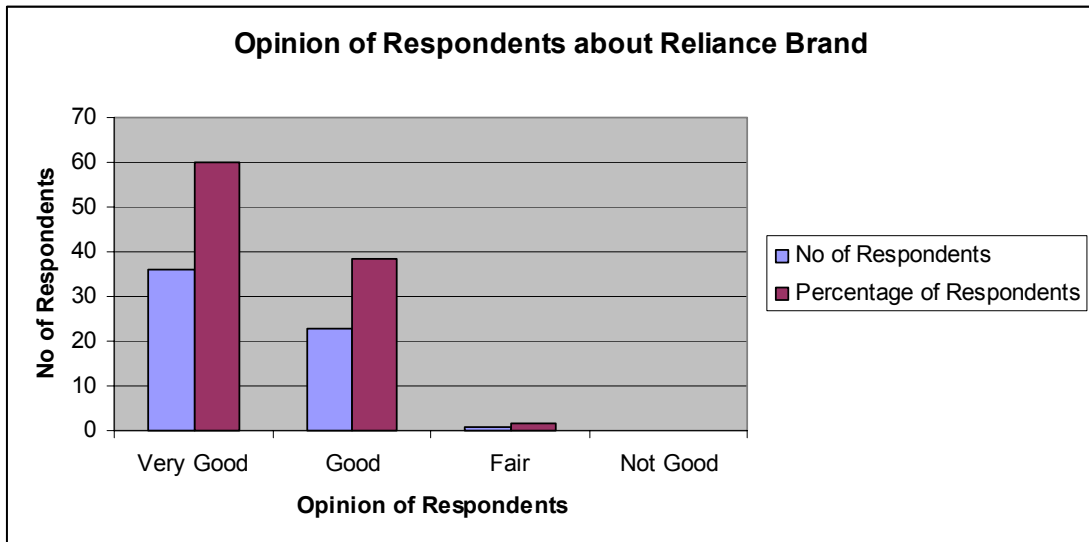
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents of Reliance brand is shown in below mentioned table 5.11.4 and chart 5.11.4,

Table 5.11.4

Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Reliance Brand

Sr No	Opinion	No of Respondents	Percentage of Respondents
1	Very Good	36	60
2	Good	23	38.3
3	Fair	1	1.7
4	Not Good	0	0.0
	Total	60	100

Chart 5.11.4



Out of 510 respondents replied to the researcher, 60 respondents were using Reliance brand of mobile service out of them 36 respondents were having very good opinion about their present Mobile Phone Services provider i.e. Reliance Brand, 23 respondents were having good opinion about their present Mobile Phone Services provider i.e. Reliance Brand, 1 respondent was having fair opinion about their present Mobile Phone Services provider i.e. Reliance Brand and no respondent was having not good opinion about their present Mobile Phone Services provider i.e. Reliance Brand. Percentages of respondents according to their opinion about their present Mobile Phone Services provider i.e. Reliance Brand were 60.0 % of respondents with very good opinion about their present Mobile Phone Services provider i.e. Reliance Brand, 38.3 % of respondents with good opinion about their present Mobile Phone Services provider i.e. Reliance Brand, 1.7 % of respondents with fair opinion about their present Mobile Phone Services provider i.e. Reliance Brand and 0.0 % of respondents with

not good opinion about their present Mobile Phone Services provider i.e. Reliance Brand.

5.11.5 Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Tata Brand:

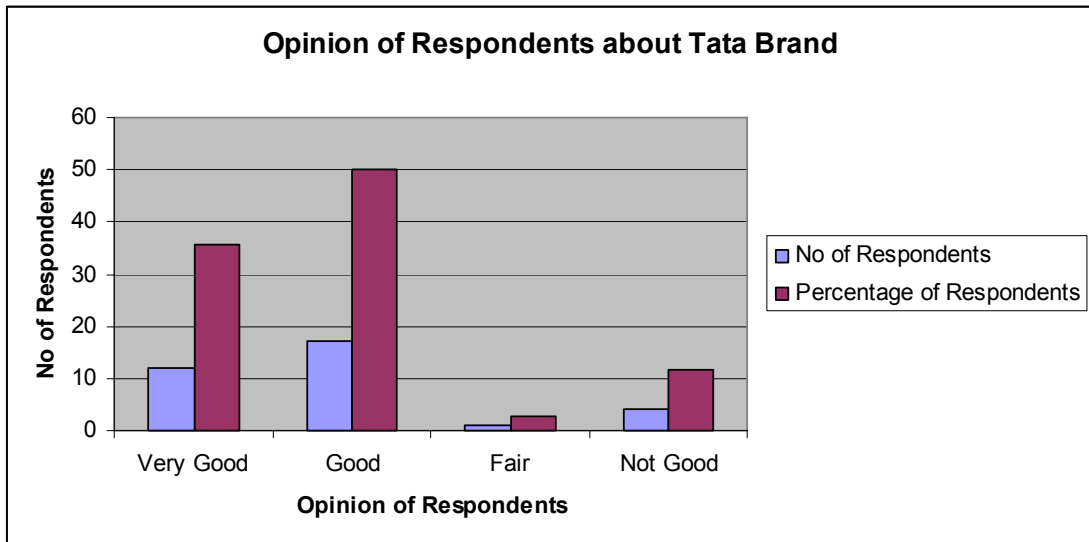
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents of Tata brand is shown in below mentioned table 5.11.5 and chart 5.11.5,

Table 5.11.5

Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Tata Brand

Sr No	Opinion	No of Respondents	Percentage of Respondents
1	Very Good	12	35.7
2	Good	17	50.0
3	Fair	1	2.9
4	Not Good	4	11.8
	Total	34	100

Chart 5.11.5



Out of 510 respondents replied to the researcher, 34 respondents were using Tata brand of mobile service out of them 12 respondents were having very good opinion about their present Mobile Phone Services provider i.e. Tata Brand, 17 respondents were having good opinion about their present Mobile Phone Services provider i.e. Tata Brand, 1 respondent was having fair opinion about their present Mobile Phone Services provider i.e. Tata Brand and 4 respondents were having not good opinion about their present Mobile Phone Services provider i.e. Tata Brand. Percentages of respondents according to their opinion about their present Mobile Phone Services provider i.e. Tata Brand were 35.3 % of respondents with very good opinion about their present Mobile Phone Services provider i.e. Tata Brand, 50.0 % of respondents with good opinion about their present Mobile Phone Services provider i.e. Tata Brand, 2.9 % of respondents with fair opinion about their present Mobile Phone Services provider i.e. Tata Brand and 11.8 % of

respondents with not good opinion about their present Mobile Phone Services provider i.e. Tata Brand.

5.11.6 Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of BSNL Brand:

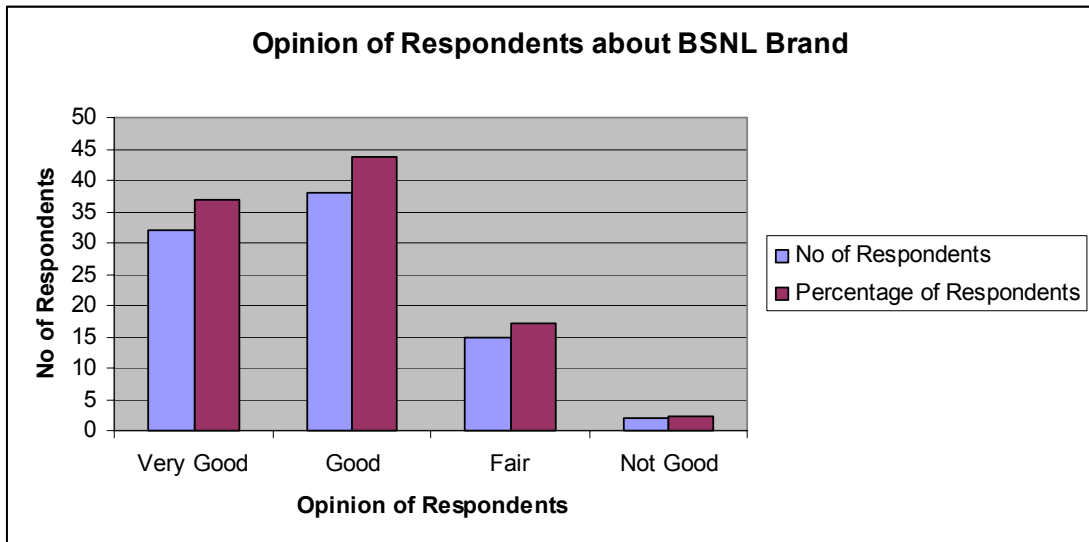
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents of BSNL brand is shown in below mentioned table 5.11.6 and chart 5.11.6,

Table 5.11.6

Brand wise Analysis of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of BSNL Brand

Sr No	Opinion	No of Respondents	Percentage of Respondents
1	Very Good	32	36.8
2	Good	38	43.7
3	Fair	15	17.2
4	Not Good	2	2.3
	Total	87	100

Chart 5.11.6



Out of 510 respondents replied to the researcher, 87 respondents were using BSNL brand of mobile service out of them 32 respondents were having very good opinion about their present Mobile Phone Services provider i.e. BSNL Brand, 38 respondents were having good opinion about their present Mobile Phone Services provider i.e. BSNL Brand, 15 respondents were having fair opinion about their present Mobile Phone Services provider i.e. BSNL Brand and 2 respondents were having not good opinion about their present Mobile Phone Services provider i.e. BSNL Brand. Percentages of respondents according to their opinion about their present Mobile Phone Services provider i.e. BSNL Brand were 36.8 % of respondents with very good opinion about their present Mobile Phone Services provider i.e. BSNL Brand, 43.7 % of respondents with good opinion about their present Mobile Phone Services provider i.e. BSNL Brand, 17.2 % of respondents with fair opinion about their present Mobile Phone Services provider i.e. BSNL Brand and 2.3 % of respondents with not good opinion about their present Mobile Phone Services provider i.e. BSNL Brand.

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in perfectly filled up form. The part – II of the questionnaire contained the parameters of Mobile Phone Services in which the respondents have to tick their opinion for their agreement level. The analysis of the same is done below.

5.12 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter the Best Operating Network:

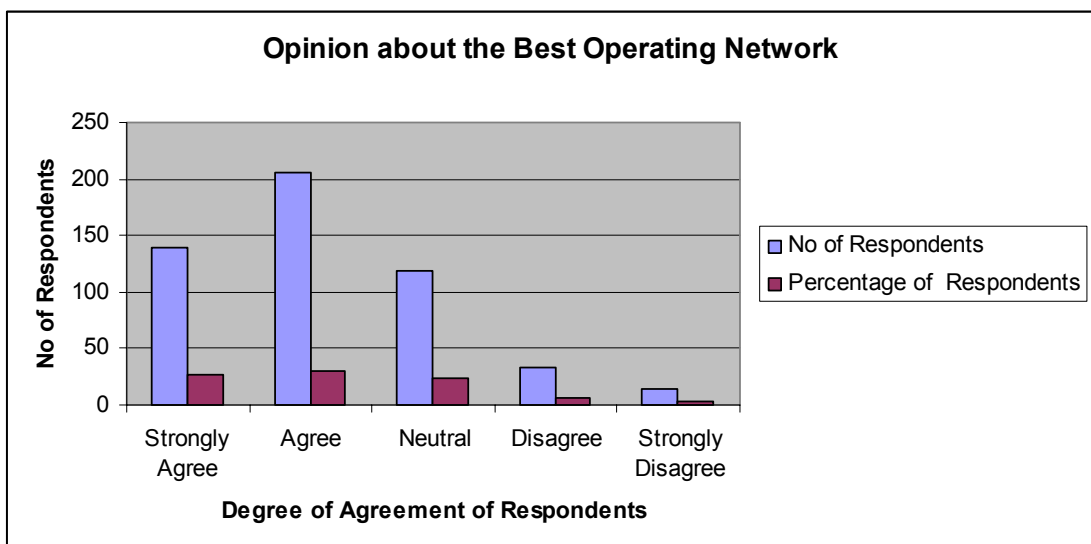
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the best operating network is shown in below mentioned table 5.12 and chart 5.12,

Table 5.12

Analysis of the Opinion about the Present Mobile Phone Services
Provider of Respondents for parameter the Best Operating
Network

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	140	27.5
2	Agree	203	29.8
3	Neutral	119	23.3
4	Disagree	34	5.7
5	Strongly Disagree	14	2.7
	Total	510	100

Chart 5.12



Out of 510 respondents replied to the researcher, 140 respondents were strongly agree with that their present Mobile Phone Services provider provides the best operating network, 203 respondents were agree with that their present Mobile Phone Services provider provides the best operating network, 119 respondents were neutral with that their present Mobile Phone Services provider provides the best operating network, 34 respondents were disagree with that their present Mobile Phone Services provider provides the best operating network and 14 respondents were strongly disagree with that their present Mobile Phone Services provider provides the best operating network. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for the parameter the best operating network were 27.5 % of respondents with strongly agree opinion that their present Mobile Phone Services provider provides the best operating network, 39.8 % of respondents with agree opinion that their present Mobile Phone Services provider provides the best operating network, 23.3 % of respondents with neutral opinion that their present Mobile Phone Services provider provides the best operating network, 6.7 % of respondents with disagree opinion that their present Mobile Phone Services provider provides the best operating network and 2.7 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider provides the best operating network.

5.13 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Effective Pricing Strategy:

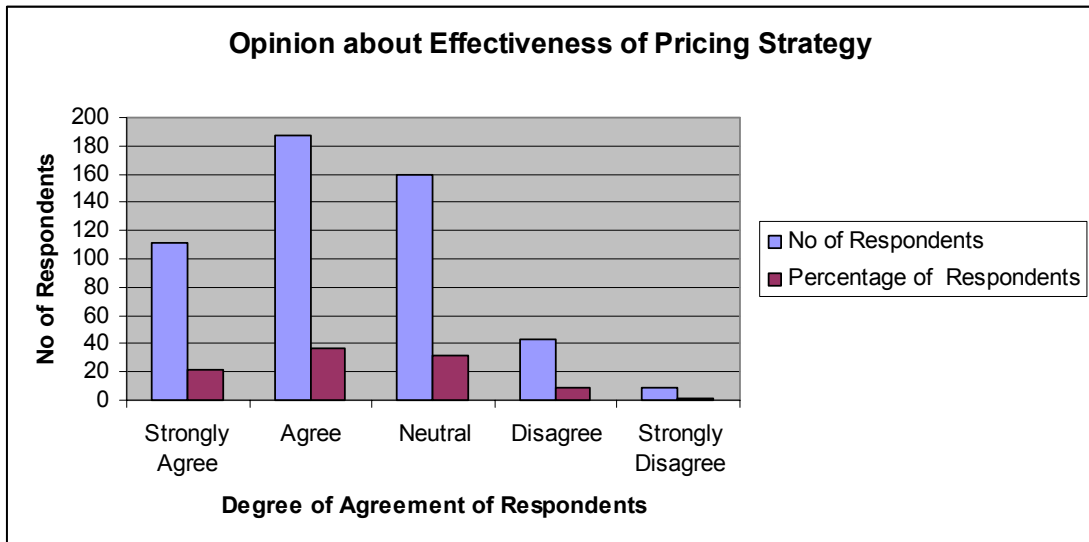
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the effective pricing strategy is shown in below mentioned table 5.13 and chart 5.13,

Table 5.13

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Effective Pricing Strategy

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	112	22.0
2	Agree	187	36.7
3	Neutral	159	31.2
4	Disagree	43	8.4
5	Strongly Disagree	9	1.8
	Total	510	100

Chart 5.13



Out of 510 respondents replied to the researcher, 112 respondents were strongly agree with that their present Mobile Phone Services provider has effective pricing strategy, 187 respondents were agree with that their present Mobile Phone Services provider has the effective pricing strategy, 159 respondents were neutral with that their present Mobile Phone Services provider has the effective pricing strategy, 43 respondents were disagree with that their present Mobile Phone Services provider has the effective pricing strategy and 9 respondents were strongly disagree with that their present Mobile Phone Services provider has the effective pricing strategy. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for the parameter the effective pricing strategy were 22.0% of respondents with strongly agree opinion that their present Mobile Phone Services provider has the effective pricing strategy, 36.7 % of respondents with agree opinion that their present Mobile Phone Services provider has the effective pricing strategy, 31.2 % of respondents with neutral opinion that their present Mobile Phone Services provider has the

effective pricing strategy, 8.4 % of respondents with disagree opinion that their present Mobile Phone Services provider has the effective pricing strategy and 1.8 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider has the effective pricing strategy.

5.14 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Wider Network Coverage:

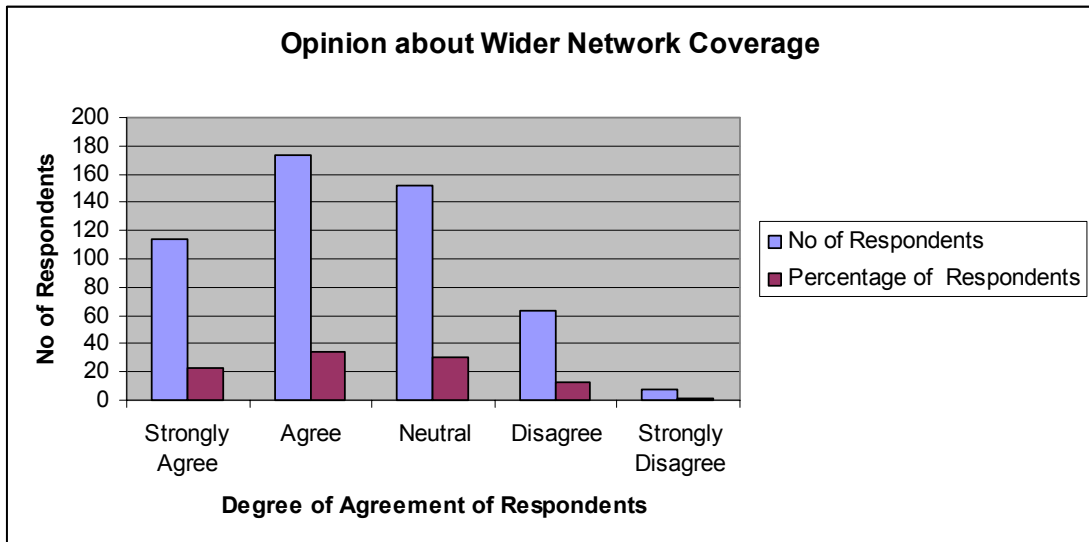
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the wider network coverage is shown in below mentioned table 5.14 and chart 5.14,

Table 5.14

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Wider Network Coverage

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	114	22.4
2	Agree	174	34.1
3	Neutral	152	29.8
4	Disagree	63	12.4
5	Strongly Disagree	7	1.4
	Total	510	100

Chart 5.14



Out of 510 respondents replied the researcher, 114 respondents were strongly agree with that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider, 174 respondents were agree with that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider, 152 respondents were neutral with that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider, 63 respondents were disagree with that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider and 7 respondents were strongly disagree with that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for the parameter wider network coverage than the other Mobile Phone Services provider were 22.4% of respondents with strongly agree opinion that their present Mobile Phone Services provider has wider

network coverage than the other Mobile Phone Services provider, 34.1 % of respondents with agree opinion that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider, 29.8 % of respondents with neutral opinion that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider, 12.4 % of respondents with disagree opinion that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider and 1.4 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider has wider network coverage than the other Mobile Phone Services provider.

5.15 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Efficient Information Sharing Process:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the efficient information sharing process is shown in below mentioned table 5.15 and chart 5.15,

Table 5.15

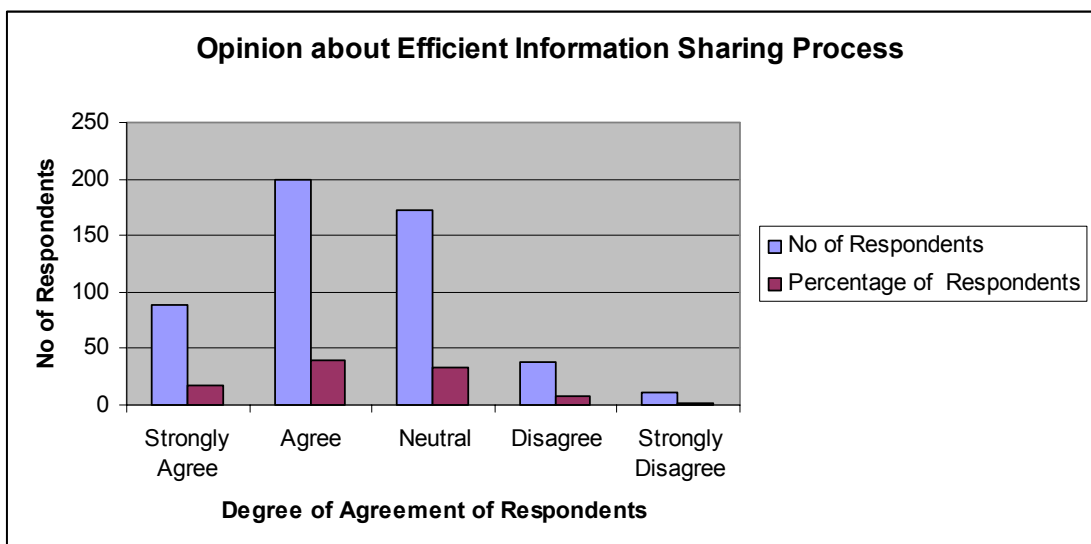
Analysis of the Opinion about the Present Mobile Phone Services

Provider of Respondents for parameter Efficient Information

Sharing Process

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	89	17.5
2	Agree	200	39.2
3	Neutral	172	33.7
4	Disagree	38	7.5
5	Strongly Disagree	11	2.2
	Total	510	100

Chart 5.15



Out of 510 respondents replied to the researcher, 89 respondents were strongly agree with that their present Mobile Phone Services provider has the efficient information sharing process, 200 respondents were agree with that their present Mobile Phone Services provider has the efficient information sharing process, 172 respondents were neutral with that their present Mobile Phone Services provider has the efficient information sharing process, 38 respondents were disagree with that their present Mobile Phone Services provider has the efficient information sharing process and 11 respondents were strongly disagree with that their present Mobile Phone Services provider has the efficient information sharing process. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for the efficient information sharing process were 17.5 % of respondents with strongly agree opinion that their present Mobile Phone Services provider has the efficient information sharing process, 39.2 % of respondents with agree opinion that their present Mobile Phone Services provider has the efficient information sharing process, 33.7 % of respondents with neutral opinion that their present Mobile Phone Services provider has the efficient information sharing process, 7.5 % of respondents with disagree opinion that their present Mobile Phone Services provider has the efficient information sharing process and 2.2 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider has the efficient information sharing process.

5.16 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Highness of Brand Loyalty of Respondent:

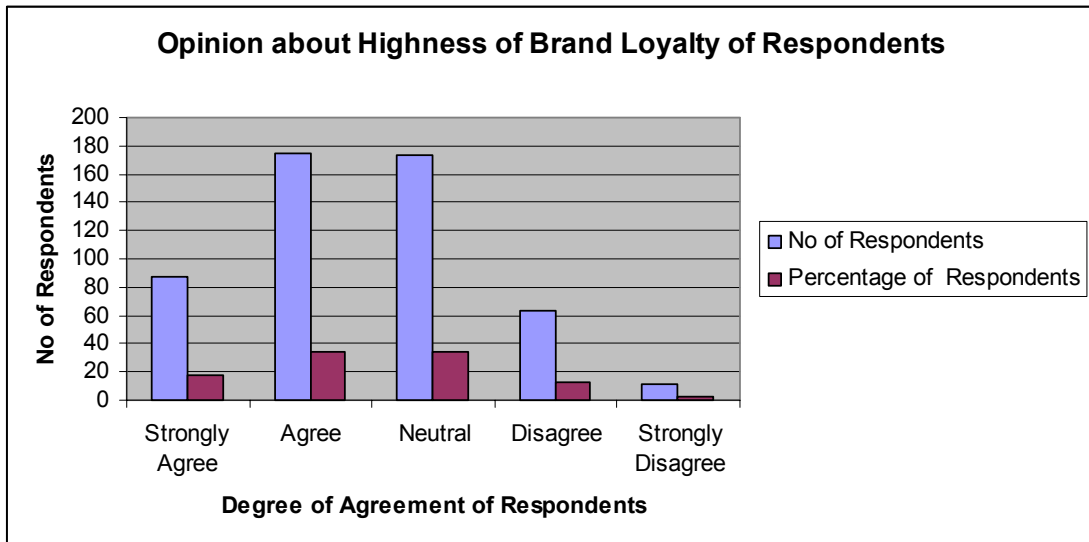
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the highness of brand loyalty of respondents is shown in below mentioned table 5.16 and chart 5.16,

Table 5.16

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Highness of Brand Loyalty of Respondent

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	87	17.1
2	Agree	175	34.3
3	Neutral	174	34.1
4	Disagree	63	12.4
5	Strongly Disagree	11	2.2
	Total	510	100

Chart 5.16



Out of 510 respondents replied to the researcher, 87 respondents were strongly agree with that they are loyal to brand of their present Mobile Phone Services provider, 175 respondents were agree with that they are loyal to brand of their present Mobile Phone Services provider, 174 respondents were neutral with that they are loyal to the brand of their present Mobile Phone Services provider, 63 respondents were disagree with that they are loyal to brand of their present Mobile Phone Services provider and 11 respondents were strongly disagree with that they are loyal to brand of their present Mobile Phone Services provider. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for highness of brand loyalty were 17.1 % of respondents with strongly agree opinion that they are loyal to brand of their present Mobile Phone Services provider, 34.3 % of respondents with agree opinion that they are loyal to brand of their present Mobile Phone Services provider, 34.1 % of respondents with neutral opinion that they are loyal to brand of their present Mobile Phone Services provider, 12.4 % of respondents with disagree opinion that they are loyal to

brand of their present Mobile Phone Services provider and 2.2 % of respondents with strongly disagree opinion that they are loyal to brand of their present Mobile Phone Services provider.

5.17 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Effective Handling during Peak Load:

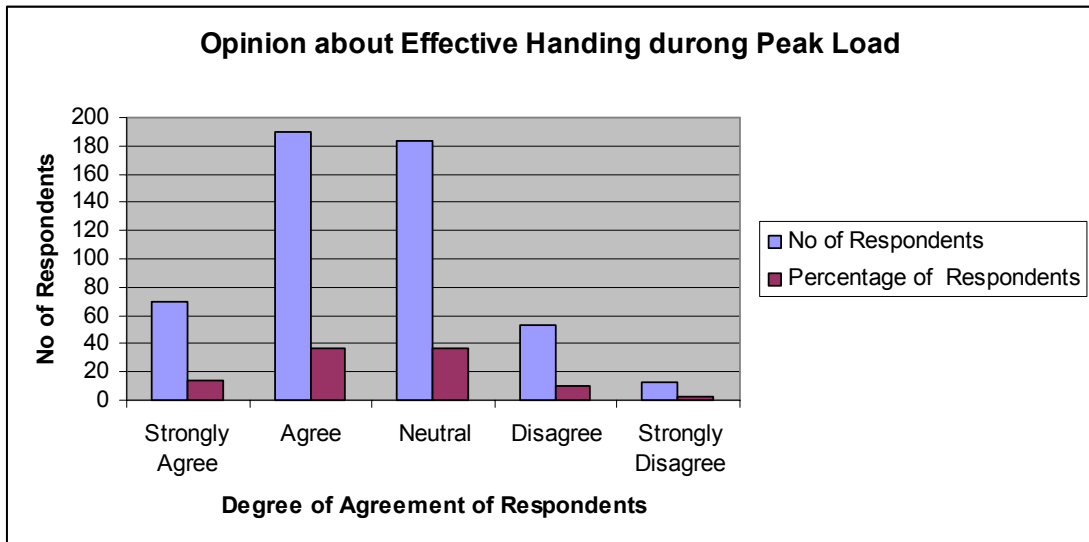
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the effective handing during peak load in below mentioned table 5.17 and chart 5.17,

Table 5.17

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Effective Handling during Peak Load

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	70	13.7
2	Agree	190	37.3
3	Neutral	184	36.1
4	Disagree	53	10.4
5	Strongly Disagree	13	2.5
	Total	510	100

Chart 5.17



Out of 510 respondents replied to the researcher, 70 respondents were strongly agree with that their present Mobile Phone Services provider handles call effectively during peak load, 190 respondents were agree with that their present Mobile Phone Services provider handles call effectively during peak load, 184 respondents were neutral with that their present Mobile Phone Services provider handles call effectively during peak load, 53 respondents were disagree with that their present Mobile Phone Services provider handles call effectively during peak load and 13 respondents were strongly disagree with that their present Mobile Phone Services provider handles call effectively during peak load. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for handling call effectively during peak load were 13.7 % of respondents with strongly agree opinion that their present Mobile Phone Services provider handles call effectively during peak load, 37.3 % of respondents with agree opinion that their present Mobile Phone Services provider handles call effectively during peak load, 36.1 % of respondents with neutral opinion that their present

Mobile Phone Services provider handles call effectively during peak load, 10.4 % of respondents with disagree opinion that their present Mobile Phone Services provider handles call effectively during peak load and 2.5 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider handles call effectively during peak load.

5.18 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Good Customer Service:

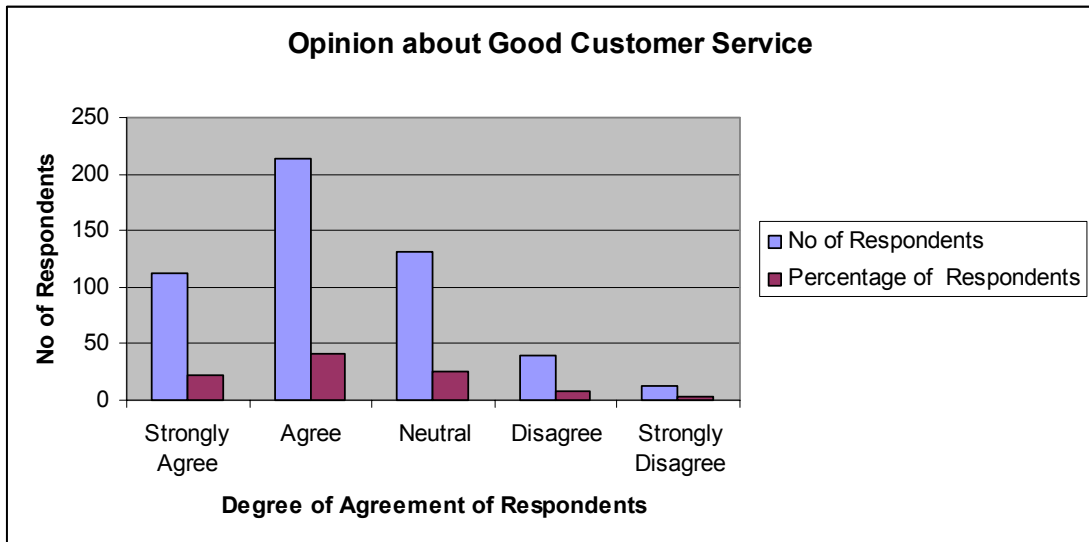
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the good customer service in below mentioned table 5.18 and chart 5.18,

Table 5.18

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Good Customer Service

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	113	22.2
2	Agree	213	41.8
3	Neutral	132	25.9
4	Disagree	40	7.8
5	Strongly Disagree	12	2.4
	Total	510	100

Chart 5.18



Out of 510 respondents replied to the researcher, 113 respondents were strongly agree with that their present Mobile Phone Services provider provides good customer service, 213 respondents were agree with that their present Mobile Phone Services provider provides good customer service, 132 respondents were neutral with that their present Mobile Phone Services provider provides good customer service, 40 respondents were disagree with that their present Mobile Phone Services provider provides good customer service and 12 respondents were strongly disagree with that their present Mobile Phone Services provider provides good customer service. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for providing good customer service were 22.2 % of respondents with strongly agree opinion that their present Mobile Phone Services provider provides good customer service, 41.8 % of respondents with agree opinion that their present Mobile Phone Services provider provides good customer service, 25.9 % of respondents with neutral opinion that their present Mobile Phone Services provider provides good

customer service, 7.8 % of respondents with disagree opinion that their present Mobile Phone Services provider provides good customer service and 2.4 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider provides good customer service.

5.19 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Professional Approach for Services:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter the professional approach for services in below mentioned table 5.19 and chart 5.19,

Table 5.19

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Professional Approach for Services

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	111	21.8
2	Agree	187	36.7
3	Neutral	150	29.4
4	Disagree	53	10.4
5	Strongly Disagree	9	1.8
	Total	510	100

Chart 5.19



Out of 510 respondents replied to the researcher, 111 respondents were strongly agree with that their present Mobile Phone Services provider has professional approach for services, 187 respondents were agree with that their present Mobile Phone Services provider has professional approach for services, 150 respondents were neutral with that their present Mobile Phone Services provider has professional approach for services, 53 respondents were disagree with that their present Mobile Phone Services provider has professional approach for services and 9 respondents were strongly disagree with that their present Mobile Phone Services provider has professional approach for services. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for professional approach for services were 21.8 % of respondents with strongly agree opinion that their present Mobile Phone Services provider has professional approach for services, 36.7 % of respondents with agree opinion that their present Mobile Phone Services provider has professional approach for services, 29.4 % of respondents with neutral opinion that their present Mobile Phone Services

provider has professional approach for services, 10.4 % of respondents with disagree opinion that their present Mobile Phone Services provider has professional approach for services and 1.8 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider has professional approach for services.

5.20 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Comparatively Low Cost:

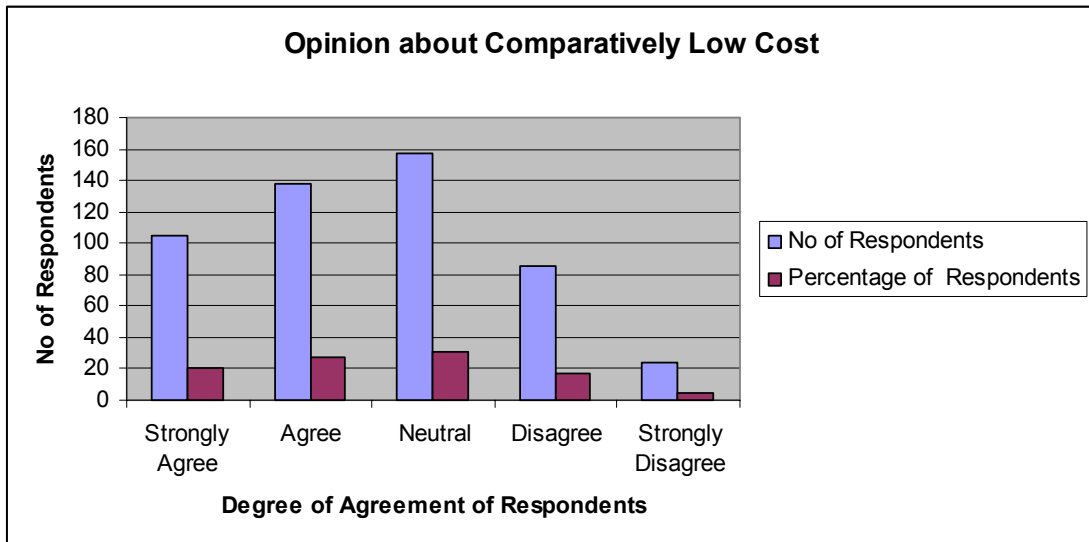
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter comparatively low cost in below mentioned table 5.20 and chart 5.20,

Table 5.20

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Comparatively Low Cost

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	105	20.6
2	Agree	138	27.1
3	Neutral	157	30.8
4	Disagree	86	16.9
5	Strongly Disagree	24	4.7
	Total	510	100

Chart 5.20



Out of 510 respondents replied to the researcher, 105 respondents were strongly agree with that their present Mobile Phone Services provider provides services at comparatively low cost, 138 respondents were agree with that their present Mobile Phone Services provider provides services at comparatively low cost, 157 respondents were neutral with that their present Mobile Phone Services provider provides services at comparatively low cost, 86 respondents were disagree with that their present Mobile Phone Services provider provides services at comparatively low cost and 24 respondents were strongly disagree with that their present Mobile Phone Services provider provides services at comparatively low cost. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for providing services at comparatively low cost were 20.6 % of respondents with strongly agree opinion that their present Mobile Phone Services provider provides services at comparatively low cost, 27.1 % of respondents with agree opinion that their present Mobile Phone Services provider provides services at comparatively low cost, 30.8 % of respondents with neutral opinion

that their present Mobile Phone Services provider provides services at comparatively low cost, 16.9 % of respondents with disagree opinion that their present Mobile Phone Services provider provides services at comparatively low cost and 4.7 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider provides services at comparatively low cost.

5.21 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Very Good Billing System:

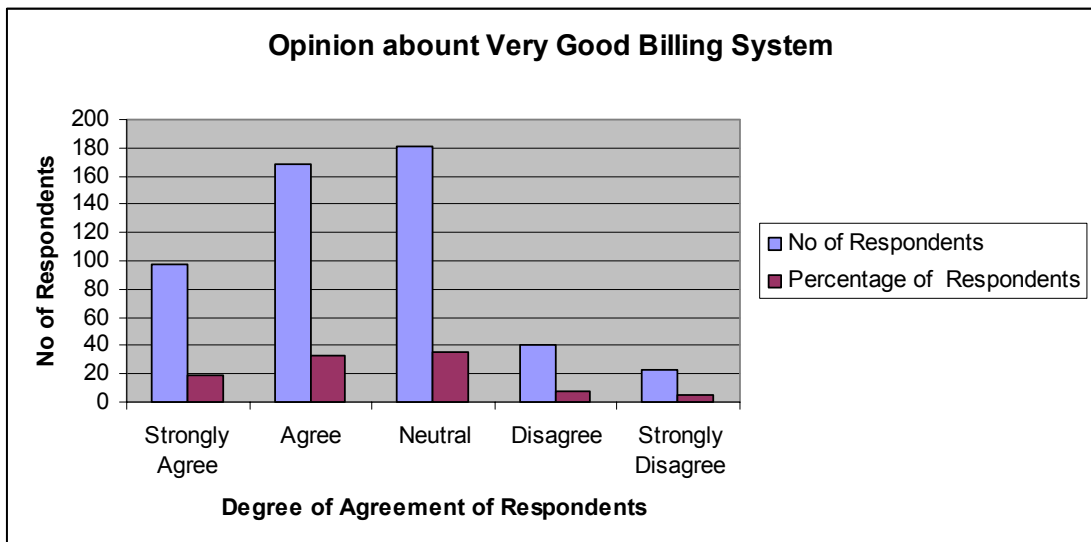
The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of respondents for parameter very good billing system in below mentioned table 5.21 and chart 5.21,

Table 5.21

Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Very Good Billing System

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	97	19
2	Agree	168	32.9
3	Neutral	181	35.5
4	Disagree	41	8.0
5	Strongly Disagree	23	4.5
	Total	510	100

Chart 5.21



Out of 510 respondents replied to the researcher, 97 respondents were strongly agree with that their present Mobile Phone Services provider has very good billing system, 168 respondents were agree with that their present

Mobile Phone Services provider has very good billing system, 181 respondents were neutral with that their present Mobile Phone Services provider has very good billing system, 41 respondents were disagree with that their present Mobile Phone Services provider has very good billing system and 23 respondents were strongly disagree with that their present Mobile Phone Services provider has very good billing system. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for very good billing system were 19.0 % of respondents with strongly agree opinion that their present Mobile Phone Services provider has very good billing system, 32.9 % of respondents with agree opinion that their present Mobile Phone Services provider has very good billing system, 35.5 % of respondents with neutral opinion that their present Mobile Phone Services provider has very good billing system, 8 % of respondents with disagree opinion that their present Mobile Phone Services provider has very good billing system and 4.5 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider has very good billing system.

5.22 Analysis of the Opinion about the Present Mobile Phone Services Provider of Respondents for parameter Bill Collection Facility:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. The opinion of the present Mobile Phone Services provider of

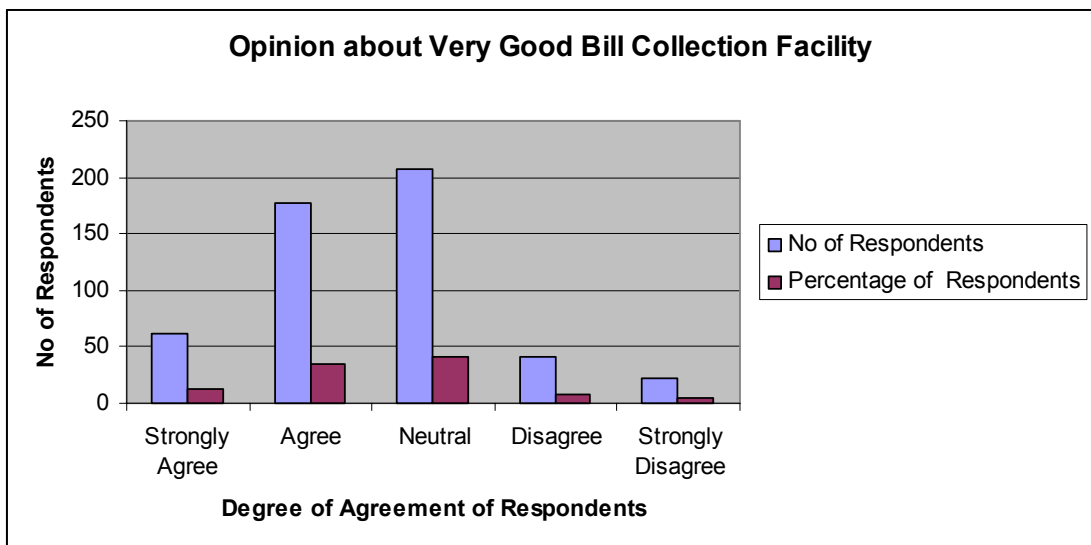
respondents for parameter bill collection facility in below mentioned table 5.22 and chart 5.22,

Table 5.22

Analysis of the Opinion about the Present Mobile Phone Services
 Provider of Respondents for parameter Bill Collection Facility

Sr No	Opinion of Respondent	No of Respondents	Percentage of Respondents
1	Strongly Agree	62	12.2
2	Agree	178	34.9
3	Neutral	207	40.6
4	Disagree	41	8.0
5	Strongly Disagree	22	4.3
	Total	510	100

Chart 5.22



Out of 510 respondents replied to the researcher, 62 respondents were strongly agree with that their present Mobile Phone Services provider has very good bill collection facility, 178 respondents were agree with that their present Mobile Phone Services provider has very good bill collection facility, 207 respondents were neutral with that their present Mobile Phone Services provider has very good bill collection facility, 41 respondents were disagree with that their present Mobile Phone Services provider has very good bill collection facility and 22 respondents were strongly disagree with that their present Mobile Phone Services provider has very good bill collection facility. Percentages of respondents according to their opinion about their present Mobile Phone Services provider for very good bill collection facility were 12.2 % of respondents with strongly agree opinion that their present Mobile Phone Services provider has very good bill collection facility, 34.9 % of respondents with agree opinion that their present Mobile Phone Services provider has very good bill collection facility, 40.6 % of respondents with neutral opinion that their present Mobile Phone Services provider has very good bill collection facility, 8.0 % of respondents with disagree opinion that their present Mobile Phone Services provider has very good bill collection facility and 4.3 % of respondents with strongly disagree opinion that their present Mobile Phone Services provider has very good bill collection facility.

**5.23 Calculation of Individual Average, Rank and
Combined Average for Questions of Section – II
of Questionnaire:**

Table 5.23 to 5.33

Appendix – I

5.24 Analysis of Rank awarded based on the Combined Average to Question No 1 to 11 of Section – II:

The researcher has calculated Combined Average for Questions of Section – II of Questionnaire. The rank has been awarded to the each question of section – II of the questionnaire based on their combined average in ascending order in Table 5.34.

Table 5.34

Rank awarded based on the Combined Average to Question No 1 to 11 of Section – II

Sr No	Question	Combined Average	Rank
1	I believe that my company provides best operating network	3.83	1.00
2	Pricing strategy is very effective	3.69	3.00
3	Network coverage is wider than other companies	3.64	5.00
4	Information sharing process is efficient	3.62	6.00
5	My brand loyalty is very high	3.52	8.00
6	Effective handling during peak load	3.49	9.00
7	Good customer services	3.74	2.00
8	Company's approach is professional for services	3.66	4.00
9	Cost is comparatively low	3.42	11.00
10	Billing system is very good	3.54	7.00
11	Company provides bill collection facility	3.43	10.00

Here rank has been awarded to the each question of section – II of the questionnaire based on their combined average in ascending order. Analyzing the above table it is found that:

- 1) The First rank has been awarded to the question no 1 – I believe that my company provides best operating network, based on the combined average, hence most of the customers believe that their company provides best operating network. The highest combined average (3.83) of this question also indicates that the operating network is a prime parameter in Mobile Phone Services and customers are very much aware and conscious about the operating network.
- 2) The Second rank has been awarded to the question no 7 – Good customer services, based on the combined average, hence the majority of customers believe that their company provides good customer services. The second highest combined average (3.74) of this question also indicates that the customer services is an important factor in Mobile Phone Services and customers are very much aware and conscious about the customer services.
- 3) The Third rank has been awarded to the question no 3 – Pricing strategy is very effective, based on the combined average, hence the customers believe that their company has very effective pricing strategy. The third highest combined average (3.69) of this question also indicates that the pricing strategy should formulated very carefully in Mobile Phone Services Providing Companies since it affects large number customers who are aware market conditions.

- 4) The Fourth rank has been awarded to the question no 8 – Company's approach is professional for services, based on the combined average, hence customers like company's professional approach for services. The fourth highest combined average (3.66) of this question also indicates that the company should have professional approach for service since customers consider the approach of company for long lasting relation.
- 5) The Fifth rank has been awarded to the question no 3 – Network coverage is wider than other companies, based on the combined average, hence average numbers of the customers believe that their company has wider operating network than other companies. The fifth highest combined average (3.64) of this question also indicates that the wider operating network of the other company is not important for the customers but they are conscious about the operating network of their respective companies.
- 6) The Sixth rank has been awarded to the question no 6 – Information sharing process is efficient, based on the combined average, hence customers are not very concerned with the efficiency of information sharing process of the company. The sixth highest combined average (3.62) of this question also indicates that companies give due important to information sharing but customers are not very much interested in information provided by the companies.
- 7) The Seventh rank has been awarded to the question no 7 – Billing system is very good, based on the combined average, hence customers give important to billing system since they want to know

components of charges indicated in bill. The seventh highest combined average (3.54) of this question also indicates that the customer like good billing system since it creates transparency in transaction which in turn beneficial for company for creating loyal customers.

- 8) The Eighth rank has been awarded to the question no 5 – My brand loyalty is very high, based on the combined average, hence the customers are not very much loyal to their companies. The eighth highest combined average (3.52) of this question also indicates that companies have failed to create brand loyal customers due to cut throat competition in the market.
- 9) The Ninth rank has been awarded to the question no 6 – Effective handling during peak load, based on the combined average, hence customers are not very much conscious for effective call handling during the peak load. The ninth highest combined average (3.49) of this question also indicates that the effective handling of call during peak load is not an important factor in Mobile Phone Services.
- 10) The Tenth rank has been awarded to the question no 11 – Company provides bill collection facility based on the combined average, hence customers give little importance to bill collection facility provided by company. The tenth highest combined average (3.43) of this question also indicates that even if customer give little important to this service provided by the company, the company give weigtage to this facility.
- 11) The Eleventh rank has been awarded to the question no 9 – Cost is comparatively low based on the combined average, hence the customers give negligible attention to the prices offered by other

companies. The eleventh highest combined average (3.42) of this question also indicates that the companies are offering similar prices to the customers.

5.25 Analysis of ranks awarded based on Individual Average to Questions of Section – II and Question No 13 of Questionnaire:

The researcher has calculated individual average of responses of the customers for each question of section – II of questionnaire. The rank has been awarded to each Mobile Phone Services Providing Companies based on individual average.

Table 5.35

Individual Average and Rank of Question No 1 of Section – II

Question No (1): I believe that my company provides best operating network.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.89	2.50
2	Idea	3.57	6.00
3	Airtel	3.71	4.00
4	Reliance	4.13	1.00
5	Tata	3.59	5.00
6	BSNL	3.89	2.50

Going through above table, it is found that the customers have given first rank to Reliance, second rank to Hutch and BSNL, fourth rank to Airtel, fifth rank to Tata and sixth rank to Idea Mobile Phone Services for providing best operating network.

Table 5.36

Individual Average and Rank of Question No 2 of Section – II

Question No (2): Pricing strategy is very effective.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.67	3.00
2	Idea	3.46	6.00
3	Airtel	3.63	4.00
4	Reliance	3.53	5.00
5	Tata	3.74	2.00
6	BSNL	4.06	1.00

Going through above table, it is found that the customers have given first rank to BSNL, second rank to Tata, third rank to Hutch, fourth rank to Airtel, fifth rank to Reliance and sixth rank to Idea Mobile Phone Services for very effective pricing strategy.

Table 5.37

Individual Average and Rank of Question No 3 of Section – II

Question No (3): Network coverage is wider than other companies.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.79	2.00
2	Idea	3.37	5.00
3	Airtel	3.41	4.00
4	Reliance	3.75	3.00
5	Tata	3.29	6.00
6	BSNL	3.82	1.00

Going through above table, it is found that the customers have given first rank to BSNL, second rank to Hutch, third rank to Reliance, fourth rank to Airtel, fifth rank to Idea and sixth rank to Tata Mobile Phone Services for having wider network coverage than other companies.

Table 5.38

Individual Average and Rank of Question No 4 of Section – II

Question No (4): Information sharing process is efficient.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.70	2.00
2	Idea	3.62	3.00
3	Airtel	3.56	4.00
4	Reliance	3.88	1.00
5	Tata	3.38	6.00
6	BSNL	3.45	5.00

Going through above table, it is found that the customers have given first rank to Reliance, second rank to Hutch, third rank to Idea, fourth rank to Airtel, fifth rank to BSNL and sixth rank to Tata Mobile Phone Services for efficient information sharing process.

Table 5.39

Individual Average and Rank of Question No 5 of Section – II

Question No (5): My brand loyalty is very high.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.57	3.00
2	Idea	3.51	4.00
3	Airtel	3.50	5.00
4	Reliance	3.56	2.00
5	Tata	3.03	6.00
6	BSNL	3.59	1.00

Going through above table, it is found that the customers have given first rank to BSNL, second rank to Reliance, third rank to Hutch, fourth rank to Idea, fifth rank to Airtel and sixth rank to Tata Mobile Phone Services for their high brand loyalty.

Table 5.40

Individual Average and Rank of Question No 6 of Section – II

Question No (6): Effective handling during peak load.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.54	3.00
2	Idea	3.60	2.00
3	Airtel	3.43	5.00
4	Reliance	3.75	1.00
5	Tata	3.50	4.00
6	BSNL	3.20	6.00

Going through above table, it is found that the customers have given first rank to Reliance, second rank to Idea, third rank to Hutch, fourth rank to Tata, fifth rank to Airtel and sixth rank to BSNL Mobile Phone Services for effective handling of call during the peak load.

Table 5.41

Individual Average and Rank of Question No 7 of Section – II

Question No (7): Good customer services.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.79	3.00
2	Idea	3.56	6.00
3	Airtel	3.68	4.00
4	Reliance	3.93	1.00
5	Tata	3.91	2.00
6	BSNL	3.61	5.00

Going through above table, it is found that the customers have given first rank to Reliance, second rank to Tata, third rank to Hutch, fourth rank to Airtel, fifth rank to BSNL and sixth rank to Idea Mobile Phone Services for good customer services.

Table 5.42

Individual Average and Rank of Question No 8 of Section – II

Question No (8): Company's approach is professional for services.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.81	3.00
2	Idea	3.48	5.00
3	Airtel	3.44	6.00
4	Reliance	3.85	1.50
5	Tata	3.85	1.50
6	BSNL	3.53	4.00

Going through above table, it is found that the customers have given first rank to Tata and Reliance, third rank to Hutch, fourth rank to BSNL, fifth rank to Idea and sixth rank to Airtel Mobile Phone Services for company's professional approach for services.

Table 5.43

Individual Average and Rank of Question No 9 of Section – II

Question No (9): Cost is comparatively low.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.25	4.00
2	Idea	3.30	3.00
3	Airtel	3.14	6.00
4	Reliance	3.20	5.00
5	Tata	3.74	2.00
6	BSNL	4.16	1.00

Going through above table, it is found that the customers have given first rank to BSNL, second rank to Tata, third rank to Idea, fourth rank to Hutch, fifth rank to Reliance and sixth rank to Airtel Mobile Phone Services for having comparatively low cost.

Table 5.44

Individual Average and Rank of Question No 10 of Section– II

Question No (10): Billing system is good.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.49	4.00
2	Idea	3.30	6.00
3	Airtel	3.51	3.00
4	Reliance	3.47	5.00
5	Tata	3.65	2.00
6	BSNL	3.84	1.00

Going through above table, it is found that the customers have given first rank to BSNL, second rank to Tata, third rank to Airtel, fourth rank to Hutch, fifth rank to Reliance and sixth rank to Idea Mobile Phone Services for having good billing system.

Table 5.45

Individual Average and Rank of Question No 11 of Section– II

Question No (11):Company provides bill collection facility.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.55	1.00
2	Idea	3.30	5.00
3	Airtel	3.41	3.50
4	Reliance	3.18	6.00
5	Tata	3.41	3.50
6	BSNL	3.45	2.00

Going through above table, it is found that the customers have given first rank to Hutch, second rank to BSNL, third rank to Airtel and Tata, fifth rank to Idea and sixth rank to Reliance Mobile Phone Services for providing bill collection facility.

Table 5.46

Individual Average and Rank of Question No 13: Opinion about present Mobile Phone Services provider of customer.

Sr No	Name of Mobile Phone Services Providing Companies	Individual Average	Rank
1	Hutch	3.49	2.00
2	Idea	3.29	4.00
3	Airtel	3.40	3.00
4	Reliance	3.58	1.00
5	Tata	3.09	6.00
6	BSNL	3.15	5.00

Going through above table, it is found that the customers have given first rank to Reliance, second rank to Hutch, third rank to Airtel, fourth rank to Idea, fifth rank to BSNL and sixth rank to Tata Mobile Phone Services for over all opinion about Mobile Phone Services provider.

5.26 Analysis of Agreement Levels of various service parameters of various mobile phone service providing companies and hypotheses testing thereof.

The researcher has analyzed agreement levels of various service parameters of various mobile phone services providing companies. The researcher has also framed hypotheses for each of the service parameter and tested the same by using Single Factor ANOVA.

5.26.1 Agreement level of respondents with parameter operating network of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of service parameter operating network of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.47

Calculation of agreement level of respondents with operating network of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	53	7	20	28	4	28	140	265	35	100	140	20	140	700
AGREE	69	32	35	18	16	33	203	276	128	140	72	64	132	812
NEUTRAL	40	16	26	9	11	17	119	120	48	78	27	33	51	357
DISAGREE	9	6	7	4	2	6	34	18	12	14	8	4	12	68
STRONGLY DISAGREE	5	2	2	1	1	3	14	5	2	2	1	1	3	14
TOTAL	176	63	90	60	34	87	510	684	225	334	248	122	338	1951
INDIVIDUAL AVERAGE								3.89	3.57	3.71	4.13	3.59	3.89	
RANK								2.50	6.00	4.00	1.00	5.00	2.50	
COMBINED AVERAGE														3.83

Above table indicates the various agreement levels about operating network of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for operating network service with Reliance followed by BSNL, Hutch and Airtel. Regarding the overall agreement for the operating network among the all the companies, combined average remains 3.83. It shows that the network is good but customers expect better network services from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the operating network services provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the operating network services provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

$$H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

$$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$$

Table 5.47-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	86722.13	4	21680.53	7.280151	2.75871
Within Groups	74450.83	25	2978.033		
Total	161173	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 7.28 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference regarding efficiency of the operating network provided by various companies to the customers.

5.26.2 Agreement level of respondents with pricing strategy of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of pricing strategy of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.48

Calculation of agreement level of respondents with pricing strategy of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	41	6	18	9	10	28	112	205	30	90	45	50	140	560
AGREE	57	24	32	22	11	41	187	228	96	128	88	44	164	748
NEUTRAL	56	26	32	22	9	14	159	168	78	96	66	27	42	477
DISAGREE	20	7	5	6	2	3	43	40	14	10	12	4	6	86
STRONGLY DISAGREE	1	0	3	1	2	1	8	1	0	3	1	2	1	8
TOTAL	175	63	90	60	34	87	509	642	218	327	212	127	353	1879
INDIVIDUAL AVERAGE								3.67	3.46	3.63	3.53	3.74	4.06	
RANK								3.00	6.00	4.00	5.00	2.00	1.00	
COMBINED AVERAGE														3.69

Above table indicates the various agreement levels about pricing strategy of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for effective pricing strategy with BSNL followed by Tata and Hutch. Regarding the overall agreement for the pricing strategy among the all the companies, combined average remains 3.69. It shows that the pricing strategy is effective but customers expect more effective pricing strategy from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the affectivity of pricing strategy of Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the affectivity of pricing strategy of Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

$$H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

$$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$$

Table 5.48-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	66994.13	4	16748.53	7.331849	2.75871
Within Groups	57108.83	25	2284.353		
Total	124103	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 7.33 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference regarding affectivity of pricing strategy of various companies.

5.26.3 Agreement level of respondents with parameter network coverage of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of service parameter network coverage of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.49

Calculation of agreement level of respondents with network coverage of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS							
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT	
STRONGLY AGREE	47	8	11	20	2	26	114	235	40	55	100	10	130	570	
AGREE	61	21	33	16	12	31	174	244	84	132	64	48	124	696	
NEUTRAL	52	21	30	15	15	19	152	156	63	90	45	45	57	456	
DISAGREE	16	12	14	7	4	10	63	32	24	28	14	8	20	126	
STRONGLY DISAGREE	0	1	2	2	1	1	7	0	1	2	2	1	1	7	
TOTAL	176	63	90	60	34	87	510	667	212	307	225	112	332	1855	
INDIVIDUAL AVERAGE								3.79	3.37	3.41	3.75	3.29	3.82		
RANK								2.00	6.00	4.00	3.00	6.00	1.00		
								COMBINED AVERAGE							3.64

Above table indicates the various agreement levels about network coverage of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for wide network coverage with BSNL followed by Hutch and Reliance. Regarding the overall agreement for the network coverage among the all the companies, combined average remains 3.64. It shows that the network coverage is wide but customers expect wider network coverage from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the Mobile Phone Services Providing Companies having wider network coverage than other companies and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the Mobile Phone Services Providing Companies having wider network coverage than other companies and agreement level of respondents regarding it.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

$$H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

$$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$$

Table 5.49-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	57495.33	4	14373.83	5.347024	2.75871
Within Groups	67204.83	25	2688.193		
Total	124700.2	29			

Above table indicate the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 5.34 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference regarding network coverage services of various companies.

5.26.4 Agreement level of respondents with parameter information sharing process of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of service parameter efficiency of information sharing process of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

**Table 5.50
Calculation of agreement level of respondents with information sharing process of various mobile phone services providing companies**

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	32	8	20	15	2	12	89	160	40	100	75	10	60	445
AGREE	77	27	24	25	15	32	200	308	108	96	100	60	128	800
NEUTRAL	52	24	36	18	13	29	172	156	72	108	54	39	87	516
DISAGREE	13	4	6	2	2	11	38	26	8	12	4	4	22	76
STRONGLY DISAGREE	2	0	4	0	2	3	11	2	0	4	0	2	3	11
TOTAL	176	63	90	60	34	87	510	652	228	320	233	115	300	1848
INDIVIDUAL AVERAGE								3.70	3.62	3.56	3.88	3.38	3.45	
RANK								2.00	3.00	4.00	1.00	6.00	5.00	
COMBINED AVERAGE														3.62

Above table indicates the various agreement levels about efficiency in information sharing process of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for efficiency in information sharing process with Reliance followed by Hutch and Idea. Regarding the overall agreement for the information sharing process among the all the companies, combined average remains 3.62. It shows that the information sharing process is efficient but customers expect even more efficient information sharing process from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the efficient information sharing process and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the efficient information sharing process and agreement level of respondents regarding it.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

$$H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

$$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$$

Table 5.50-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	71192.87	4	17798.22	7.194532	2.75871
Within Groups	61846.33	25	2473.853		
Total	133039.2	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 7.19 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in efficiency of information sharing process of various companies.

5.26.5 Agreement level of respondents with parameter brand loyalty of customers of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of parameter brand loyalty of customer of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.51
Calculation of agreement level of respondents with brand loyalty of customers of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	31	8	13	14	1	20	87	155	40	65	70	5	100	435
AGREE	65	25	29	18	11	27	175	260	100	116	72	44	108	700
NEUTRAL	57	21	39	19	12	26	174	171	63	117	57	36	78	522
DISAGREE	19	9	8	7	8	12	63	38	18	16	14	16	24	126
STRONGLY DISAGREE	4	0	1	2	2	2	11	4	0	1	2	2	2	11
TOTAL	176	63	90	60	34	87	510	628	221	315	215	103	312	1794
INDIVIDUAL AVERAGE								3.57	3.51	3.50	3.58	3.03	3.59	
RANK								3.00	4.00	5.00	2.00	6.00	1.00	
COMBINED AVERAGE														3.52

Above table indicates the various agreement levels about brand loyalty of customers of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly loyal with BSNL followed by Reliance and Hutch. Regarding the overall agreement for the brand loyalty among the all the companies, combined average remains 3.52. It shows that the brand loyalty is good but companies should make more efforts make their customer more loyal.

Hypotheses

H₀: There would be no significant difference in relation to the high brand loyalty of customers and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the high brand loyalty of customers and agreement level of respondents regarding it.

H₀: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H₁: $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$

Table 5.51-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	54003.13	4	13500.78	6.257354	2.75871
Within Groups	53939.67	25	2157.587		
Total	107942.8	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 6.25 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in brand loyalty of customers of various companies.

5.26.6 Agreement level of respondents with parameter effective handling during peak load of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of parameter effective handling of call during peak load of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.52

Calculation of agreement level of respondents with parameter effective handling during peak load of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	28	8	8	12	4	10	70	140	40	40	60	20	50	350
AGREE	65	28	30	26	13	28	190	260	112	120	104	52	112	760
NEUTRAL	60	22	47	18	13	24	184	180	66	141	54	39	72	552
DISAGREE	20	4	3	3	4	19	53	40	8	6	6	8	38	106
STRONGLY DISAGREE	3	1	2	1	0	6	13	3	1	2	1	0	6	13
TOTAL	176	63	90	60	34	87	510	623	227	309	225	119	278	1781
INDIVIDUAL AVERAGE								3.54	3.60	3.43	3.75	3.50	3.20	
RANK								3.00	2.00	5.00	1.00	4.00	6.00	
COMBINED AVERAGE														3.49

Above table indicates the various agreement levels about effective handling of call during peak load of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for effective handling of call during peak load with Reliance followed by Airtel and Hutch. Regarding the overall agreement for the effective handling of call during peak load among the all the companies, combined average remains 3.49. It shows that the companies are effective in handling calls during peak load but customer expects better efficiency in handling calls during peak load from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the effective handling during peak load and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the effective handling during peak load and agreement level of respondents regarding it.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

$$H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

$$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$$

Table 5.52-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	63636.13	4	15909.03	7.939775	2.75871
Within Groups	50092.83	25	2003.713		
Total	113729	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 6.93 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in effective handling of calls during peak load by various companies.

5.26.7 Agreement level of respondents with parameter customer services various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of parameter customer services of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.53

Calculation of agreement level of respondents with parameter customer services of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	39	9	23	18	8	16	113	195	45	115	90	40	80	565
AGREE	77	29	27	25	17	38	213	308	116	108	100	68	152	852
NEUTRAL	47	16	30	13	8	18	132	141	48	90	39	24	54	396
DISAGREE	10	6	8	3	0	13	40	20	12	16	6	0	26	80
STRONGLY DISAGREE	3	3	2	1	1	2	12	3	3	2	1	1	2	12
TOTAL	176	63	90	60	34	87	510	667	224	331	236	133	314	1905
INDIVIDUAL AVERAGE								3.79	3.56	3.68	3.93	3.91	3.61	
RANK								3.00	6.00	4.00	1.00	2.00	5.00	
COMBINED AVERAGE														3.74

Above table indicates the various agreement levels about customer services of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for good customer services with Reliance followed by Tata and Hutch. Regarding the overall agreement for the good customer service among the all the companies, combined average remains 3.74. It shows that the companies provide good customer services but customer expects better services from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the good customer services and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the good customer services and agreement level of respondents regarding it.

H₀: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H₁: $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$

Table 5.53-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	80447.33	4	20111.83	8.043425	2.75871
Within Groups	62510.17	25	2500.407		
Total	142957.5	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 8.04 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in customer services provided by various companies to the customers.

5.26.8 Agreement level of respondents with parameter professional approach for services various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of parameter professional approach for services of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.54

Calculation of agreement level of respondents with parameter professional approach for services of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	47	6	18	19	8	13	111	235	30	90	95	40	65	555
AGREE	66	27	25	16	15	38	187	264	108	100	64	60	152	748
NEUTRAL	45	23	30	22	9	21	150	135	69	90	66	27	63	450
DISAGREE	18	5	13	3	2	12	53	36	10	26	6	4	24	106
STRONGLY DISAGREE	0	2	4	0	0	3	9	0	2	4	0	0	3	9
TOTAL	176	63	90	60	34	87	510	670	219	310	231	131	307	1868
INDIVIDUAL AVERAGE								3.81	3.48	3.44	3.85	3.85	3.53	
RANK								3.00	5.00	6.00	1.50	1.50	4.00	
COMBINED AVERAGE														3.66

Above table indicates the various agreement levels about professional approach for services of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for professional approach for services with Reliance and Tata followed by Hutch and BSNL. Regarding the overall agreement for the professional approach for services among the all the companies, combined average remains 3.66. It shows that the companies have professional approach for services but customer expects more professional approach for services from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the professional approach of the Mobile Phone Services Providing Companies for services and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the professional approach of the Mobile Phone Services Providing Companies for services and agreement level of respondents regarding it.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

$$H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

$$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$$

Table 5.54-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	63910.2	4	15977.55	6.252987	2.75871
Within Groups	63879.67	25	2555.187		
Total	127789.9	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 6.25 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in professional approach for services of various companies.

5.26.9 Agreement level of respondents with parameter cost of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of parameter cost of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.55

Calculation of agreement level of respondents with parameter cost of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	31	6	12	6	11	39	105	155	30	60	30	55	195	525
AGREE	41	22	21	16	8	30	138	164	88	84	64	32	120	552
NEUTRAL	57	22	31	25	10	12	157	171	66	93	75	30	36	471
DISAGREE	35	11	20	10	5	5	86	70	22	40	20	10	10	172
STRONGLY DISAGREE	12	2	6	3	0	1	24	12	2	6	3	0	1	24
TOTAL	176	63	90	60	34	87	510	572	208	283	192	127	362	1744
INDIVIDUAL AVERAGE								3.25	3.30	3.14	3.20	3.74	4.16	
RANK								4.00	3.00	6.00	5.00	2.00	1.00	
COMBINED AVERAGE														3.42

Above table indicates the various agreement levels about cost of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for low cost with BSNL followed by Reliance and Idea. Regarding the overall agreement for the low cost among the all the companies, combined average remains 3.42. It shows that the companies have low cost but customer expects lower cost from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the comparative low cost and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the comparative low cost and agreement level of respondents regarding it.

H₀: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H₁: $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$

Table 5.55-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	37337.13	4	9334.283	4.592348	2.75871
Within Groups	50814.33	25	2032.573		
Total	88151.47	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 4.59 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in cost of various companies.

5.26.10 Agreement level of respondents with parameter billing system of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of parameter billing system of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.56

Calculation of agreement level of respondents with parameter billing system of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	31	7	17	10	10	22	97	155	35	85	50	50	110	485
AGREE	60	21	25	17	8	37	168	240	84	100	68	32	148	672
NEUTRAL	60	24	38	25	12	22	181	180	72	114	75	36	66	543
DISAGREE	15	6	7	7	2	4	41	30	12	14	14	4	8	82
STRONGLY DISAGREE	10	5	3	1	2	2	23	10	5	3	1	2	2	23
TOTAL	176	63	90	60	34	87	510	615	208	316	208	124	334	1805
INDIVIDUAL AVERAGE								3.49	3.30	3.51	3.47	3.65	3.84	
RANK								4.00	6.00	3.00	5.00	2.00	1.00	
COMBINED AVERAGE														3.54

Above table indicates the various agreement levels about billing system of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for good billing system with BSNL followed by Tata and Airtel. Regarding the overall agreement for the billing system among the all the companies, combined average remains 3.54. It shows that the companies have good billing system but customer expects better billing system from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the very good billing system and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the very good billing system and agreement level of respondents regarding it.

H₀: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H₁: $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$

Table 5.56-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	56217.67	4	14054.42	6.96032	2.75871
Within Groups	50480.5	25	2019.22		
Total	106698.2	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 6.96 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in billing system of various companies.

5.26.11 Agreement level of respondents with parameter bill collection facility of various mobile phone services providing companies and hypotheses testing thereof:

The respondents have been asked about agreement of parameter bill collection facility of concern mobile phone service provider. The calculations of total score of various degrees of agreements are mention in table as below,

Table 5.57

Calculation of agreement level of respondents with parameter bill collection facility of various mobile phone services providing companies

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	26	5	11	6	3	11	62	130	25	55	30	15	55	310
AGREE	68	22	33	15	11	29	178	272	88	132	60	44	116	712
NEUTRAL	66	27	33	26	17	38	207	198	81	99	78	51	114	621
DISAGREE	9	5	8	10	3	6	41	18	10	16	20	6	12	82
STRONGLY DISAGREE	7	4	5	3		3	22	7	4	5	3	0	3	22
TOTAL	176	63	90	60	34	87	510	625	208	307	191	116	300	1747
INDIVIDUAL AVERAGE								3.55	3.30	3.41	3.18	3.41	3.45	
RANK								1	5	3.5	6	3.5	2	
COMBINED AVERAGE														3.43

Above table indicates the various agreement levels about bill collection facility of various companies which includes Hutch, Idea, Airtel, Reliance, Tata and BSNL. Out of these six companies, respondents are strongly agreed for good bill collection facility with Hutch followed by BSNL, Airtel and Tata. Regarding the overall agreement for the billing system among the all the companies, combined average remains 3.43. It shows that the companies offer good bill collection facility but customer expects even better bill collection facility from various companies.

Hypotheses

H₀: There would be no significant difference in relation to the bill collection facility provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

H₁: There would be significant difference in relation to the bill collection facility provided by Mobile Phone Services Providing Companies and agreement level of respondents regarding it.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$$

$$H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$$

$$\mu_1 = \text{Hutch}, \mu_2 = \text{Idea}, \mu_3 = \text{Airtel}, \mu_4 = \text{Reliance}, \mu_5 = \text{Tata}, \mu_6 = \text{BSNL}$$

Table 5.57-A: Single Factor ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>F crit</i>
Between Groups	64248.53	4	16062.13	7.238217	2.75871
Within Groups	55476.83	25	2219.073		
Total	119725.4	29			

Above table indicates the one way analysis of variances among the various companies in various levels opinion of the respondents. The calculated value of F is 7.23 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. This indicates that there is significant difference in bill collection facility provided by various companies.

CHAPTER – 6

FINDINGS,

CONCLUSIONS AND

SUGGESTIONS

OF

THE STUDY

CHAPTER – 6

FINDINGS AND CONCLUSIONS

OF THE STUDY

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CHPATER – 6

The researcher has presented Findings and Conclusion based on the Overall Opinion about the Present Mobile Phone Service Provider of Respondents, Findings and Conclusion of the Overall Opinion about the Present Mobile Phone Service Provider of Respondents of all the six brand viz. Hutch, Idea, Airtel, Reliance, Tata and BSNL, Findings and Conclusion based on Individual Average and Rank of Question No 13 of questionnaire i.e. Opinion about present mobile phone service provider of customer, Findings and Conclusions based on Individual Average and Rank of Question No 1 to 11 of Section – II of Questionnaire, Findings and conclusion based on the Combined Average and Ranks of Questions of Section – II of Questionnaire and Findings and Conclusions based on Individual ANOVA of Question No 1 to 11 of Section – II of Questionnaire. The researcher has also presented suggestions.

1. Findings and Conclusion based on the Overall Opinion about the Present Mobile Phone Services Provider of Respondents:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. 45.9 % of the respondents were having very good opinion about their present Mobile Phone Services provider companies and 47.6 % of the respondents were having good opinion about their present Mobile Phone Services provider companies. Hence, it is found that the majority of respondents were happy with their present Mobile Phone Services provider

companies and it is concluded that the companies should continue their present as well as some innovative marketing strategies pertaining to customers. It is also hereby suggested that the companies should also try to find out the reasons for giving them fair and not good response.

2. Findings and Conclusion of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Hutch Brand:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. Out of the 510 respondents 176 respondents were belonging to Hutch brand. 51.1 % of the respondents were having very good opinion about the Hutch brand and 47.7 % of the respondents were having good opinion about the Hutch brand. Hence, it is found that the majority of respondents were happy with their Hutch brand and it is concluded that the company should continue their present strategy pertaining to customers.

3. Findings and Conclusion of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Idea Brand:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. Out of the 510 respondents 63 respondents were belonging to Idea brand. 34.9 % of the respondents were having very good opinion about the Idea brand and 60.3 % of the respondents were having good

opinion about the Idea brand. Hence, it is found that the majority of respondents were happy with their Idea brand and it is concluded that the company should continue their present strategy pertaining to customers.

4. Findings and Conclusion of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Airtel Brand:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. Out of the 510 respondents 90 respondents were belonging to Airtel brand. 46.7 % of the respondents were having very good opinion about the Airtel brand and 47.8 % of the respondents were having good opinion about the Airtel brand. Hence, it is found that the majority of respondents were happy with their Airtel brand and it is concluded that the company should continue their present strategy pertaining to customers.

5. Findings and Conclusion of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Reliance Brand:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. Out of the 510 respondents 60 respondents were belonging to Reliance brand. 60.0 % of the respondents were having very good opinion about the Reliance brand and 38.3 % of the respondents were having good opinion about the Reliance brand. Hence, it is found that the majority of

respondents were happy with their Reliance brand and it is concluded that the company should continue their present strategy pertaining to customers.

6. Findings and Conclusion of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of Tata Brand:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. Out of the 510 respondents 34 respondents were belonging to Tata brand. 35.3 % of the respondents were having very good opinion about the Tata brand and 50.0 % of the respondents were having good opinion about the Tata brand. Hence, it is found that the majority of respondents were happy with their Tata brand and it is concluded that the company should continue their present strategy pertaining to customers.

7. Findings and Conclusion of the Overall Opinion about the Present Mobile Phone Services Provider of Respondents of BSNL Brand:

The researcher has contacted total 700 respondents from various locations of Gujarat State and collected the data by asking them to fill up the structured questionnaire. Out of 700, 510 questionnaires have been received in filled up form. Out of the 510 respondents 87 respondents were belonging to BSNL brand. 36.8 % of the respondents were having very good opinion about the BSNL brand and 43.7 % of the respondents were having good opinion about the BSNL brand. Hence, it is found that the majority of

respondents were happy with their BSNL brand and it is concluded that the company should continue their present strategy pertaining to customers.

8. Findings and Conclusion based on Individual Average and Rank of Question No 13 of Questionnaire.

For Question No 13 “Opinion about present Mobile Phone Services provider of customer”, the customers have given first rank to Reliance, second rank to Hutch, third rank to Airtel, fourth rank to Idea, fifth rank to BSNL and sixth rank to Tata Mobile Phone Services, hence Reliance, Hutch and Airtel Mobile Phone Services can be said to be delivering the customer services as per their expectations and Idea, BSNL and Tata Mobile Phone Services are not meeting the expectations of the customers, they should therefore, try to satisfy their customers by meeting their expectations.

9. Findings and Conclusion based on Individual Average and Rank of Question No 1 of Section – II of Questionnaire.

For Question No – (1) “I believe that my company provides best operating network”, the customers have given first rank to Reliance, second rank to Hutch and BSNL, fourth rank to Airtel, fifth rank to Tata and sixth rank to Idea Mobile Phone Services providing company hence, Reliance, Hutch and BSNL Mobile Phone Services providing companies can be said to be providing best operating network and Airtel, Tata and Idea Mobile Phone Services providing companies should initiate for improvement in their operating network.

10. Findings and Conclusion based on Individual Average and Rank of Question No 2 of Section – II of Questionnaire.

For Question No (2) “Pricing strategy is very effective”, the customers have given first rank to BSNL, second rank to Tata, third rank to Hutch, fourth rank to Airtel, fifth rank to Reliance and sixth rank to Idea Mobile Phone Services providing company hence, BSNL, Tata and Hutch Mobile Phone Services providing companies can be said to be having very effective pricing strategy and Airtel, Reliance and Idea Mobile Phone Services providing companies should make efforts to make their pricing strategy more effective.

11. Findings and Conclusion based on Individual Average and Rank of Question No 3 of Section – II of Questionnaire.

For Question No (3) “Network coverage is wider than other companies”, the customers have given first rank to BSNL, second rank to Hutch, third rank to Reliance, fourth rank to Airtel, fifth rank to Idea and sixth rank to Tata Mobile Phone Services providing company hence, BSNL, Hutch and Reliance Mobile Phone Services providing companies can be said to be having wider network coverage than other companies and Airtel, Idea and Tata Mobile Phone Services providing companies should plan to widen their network coverage.

12. Findings and Conclusion based on Individual Average and Rank of Question No 4 of Section – II of Questionnaire.

For Question No (4) “Information sharing process is efficient”, the customers have given first rank to Reliance, second rank to Hutch, third rank to Idea, fourth rank to Airtel, fifth rank to BSNL and sixth rank to Tata Mobile Phone Services providing company hence, Reliance, Hutch and Idea Mobile

Phone Services providing companies can be said to be having efficient information sharing process and Airtel, BSNL and Tata Mobile Phone Services providing companies should improve their information sharing process.

13. Findings and Conclusion based on Individual Average and Rank of Question No 5 of Section – II of Questionnaire.

For Question No (5) “My brand loyalty is very high”, the customers have given first rank to BSNL, second rank to Reliance, third rank to Hutch, fourth rank to Idea, fifth rank to Airtel and sixth rank to Tata Mobile Phone Services providing company hence, the BSNL, Reliance and Hutch Mobile Phone Services providing companies can be said to be having very high brand loyalty of the customers and Idea, Airtel and Tata Mobile Phone Services providing companies should try to for building high brand loyalty of the customers.

14. Findings and Conclusion based on Individual Average and Rank of Question No 6 of Section – II of Questionnaire.

For Question No (6) “Effective handling during peak load”, the customers have given first rank to Reliance, second rank to Idea, third rank to Hutch, fourth rank to Tata, fifth rank to Airtel and sixth rank to BSNL Mobile Phone Services providing companies hence, Reliance, Idea and Hutch Mobile Phone Services providing companies can be said to be having effective handling of call during peak load and Tata, Airtel and BSNL Mobile Phone Services providing companies should try to improve the handling of call during the peak load.

15. Findings and Conclusion based on Individual Average and Rank of Question No 7 of Section – II of Questionnaire.

For Question No (7) “Good customer services”, the customers have given first rank to Reliance, second rank to Tata, third rank to Hutch, fourth rank to Airtel, fifth rank to BSNL and sixth rank to Idea Mobile Phone Services provider company hence, Reliance, Tata and Hutch Mobile Phone Services providing company can be said to be providing good customer services and Airtel, BSNL and Idea Mobile Phone Services providing company should improve their quality of customer services.

16. Findings and Conclusion based on Individual Average and Rank of Question No 8 of Section – II of Questionnaire

For Question No (8) “Company’s approach is professional for services”, the customers have given first rank to Tata and Reliance, third rank to Hutch, fourth rank to BSNL, fifth rank to Idea and sixth rank to Airtel Mobile Phone Services providing company hence, Tata, Reliance and Hutch Mobile Phone Services providing companies can be said to be having professional approach for services and BSNL, Idea and Airtel Mobile Phone Services providing companies should make efforts to build professional approach for services.

17. Findings and Conclusion based on Individual Average and Rank of Question No 9 of Section – II of Questionnaire.

For Question No (9) “Cost is comparatively low”, the customers have given first rank to BSNL, second rank to Tata, third rank to Idea, fourth rank to Hutch, fifth rank to Reliance and sixth rank to Airtel Mobile Phone Services providing company hence, BSNL, Tata and Idea Mobile Phone Services providing companies can be said to be having comparatively low cost and

Hutch, Reliance and Airtel Mobile Phone Services providing companies should work to offer comparatively low cost.

18. Findings and Conclusion based on Individual Average and Rank of Question No 10 of Section – II of Questionnaire.

For Question No (10) “Billing system is good”, the customers have given first rank to BSNL, second rank to Tata, third rank to Airtel, fourth rank to Hutch, fifth rank to Reliance and sixth rank to Idea Mobile Phone Services providing company hence, BSNL, Tata and Airtel Mobile Phone Services providing companies can be said to be having good billing system and Hutch, Reliance and Idea Mobile Phone Services providing companies should improve their billing system.

19. Findings and Conclusion based on Individual Average and Rank of Question No 11 of Section – II of Questionnaire.

For Question No (11) “Company provides bill collection facility”, the customers have given first rank to Hutch, second rank to BSNL, third rank to Airtel and Tata, fifth rank to Idea and sixth rank to Reliance Mobile Phone Services providing company hence, Hutch, BSNL, Airtel and Tata Mobile Phone Services providing companies can be said to be providing good bill collection facility and Idea and Reliance Mobile Phone Services providing companies should plan improve their bill collection facility.

20. Findings and Conclusion based on Combined Average and Rank of Question No 1 to11 of Section – II of Questionnaire.

Here rank has been awarded to the each question of section – II of the questionnaire based on their combined average in ascending order. The First rank has been awarded to the question no 1 – I believe that my company

provides best operating network, the Second rank has been awarded to the question no 7 – Good customer services, the Third rank has been awarded to the question no 3 – Pricing strategy is very effective, the Fourth rank has been awarded to the question no 8 – Company's approach is professional for services, the Fifth rank has been awarded to the question no 3 – Network coverage is wider than other companies, the Sixth rank has been awarded to the question no 6 – Information sharing process is efficient, the Seventh rank has been awarded to the question no 7 – Billing system is very good, the Eighth rank has been awarded to the question no 5 – My brand loyalty is very high, the Ninth rank has been awarded to the question no 6 – Effective handling during peak load, the Tenth rank has been awarded to the question no 11 – Company provides bill collection facility, the Eleventh rank has been awarded to the question no 9 – Cost is comparatively low based on the combined average, hence Mobile Phone Services providing companies should give more importance to service parameters like 1) quality of operating network, 2) good customer services, 3) effective pricing strategy, 4) professional approach for services, 5) wider network coverage and 6) efficient information sharing process. Other service parameters like 1) billing system, 2) brand loyalty, 3) effective handling during peak hours, 4) bill collection facility and 5) comparative low cost should also be considered.

21. Findings and Conclusion based on ANOVA Test of Question No 1 of Section – II of Questionnaire.

For Question No – (1) “I believe that my company provides best operating network”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 7.28 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in the operating network provided by various companies to the customers.

22. Findings and Conclusion based on ANOVA Test of Question No 2 of Section – II of Questionnaire.

For Question No (2) “Pricing strategy is very effective”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 7.33 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference regarding affectivity of pricing strategy of various companies.

23. Findings and Conclusion based on ANOVA Test of Question No 3 of Section – II of Questionnaire.

For Question No (3) “Network coverage is wider than other companies”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows calculated value of F is 5.34 whereas table value is 2.75 which indicate that the null hypotheses

stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference regarding network coverage services of various companies.

24. Findings and Conclusion based on ANOVA Test of Question No 4 of Section – II of Questionnaire.

For Question No (4) “Information sharing process is efficient”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 7.19 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in efficiency of information sharing process of various companies.

25. Findings and Conclusion based on ANOVA Test of Question No 5 of Section – II of Questionnaire.

For Question No (5) “My brand loyalty is very high”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 6.25 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in brand loyalty of customers of various companies.

26. Findings and Conclusion based on ANOVA Test of Question No 6 of Section – II of Questionnaire.

For Question No (6) “Effective handling during peak load”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 6.93 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in effective handling of calls during peak load by various companies.

27. Findings and Conclusion based on ANOVA Test of Question No 7 of Section – II of Questionnaire.

For Question No (7) “Good customer services”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 8.04 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in customer services provided by various companies to the customers.

28. Findings and Conclusion based on ANOVA Test of Question No 8 of Section – II of Questionnaire

For Question No (8) “Company’s approach is professional for services”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 6.25 whereas table value is 2.75 which indicate that the null hypotheses stands

rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in professional approach for services of various companies.

29. Findings and Conclusion based on ANOVA Test of Question No 9 of Section – II of Questionnaire.

For Question No (9) “Cost is comparatively low”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 4.59 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in cost of various companies.

30. Findings and Conclusion based on ANOVA Test of Question No 10 of Section – II of Questionnaire.

For Question No (10) “Billing system is good”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 6.96 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in billing system of various companies.

31. Findings and Conclusion based on ANOVA Test of Question No 11 of Section – II of Questionnaire.

For Question No (11) “Company provides bill collection facility”, the one way analysis of variances among the various companies in various levels opinion of the respondents shows the calculated value of F is 7.23 whereas table value is 2.75 which indicate that the null hypotheses stands rejected and alternative hypotheses remain. Hence, it is concluded that there is significant difference in bill collection facility provided by various companies.

32. SUGGESTIONS:

Based on the above findings and conclusions of the study, the following two types of suggestions are made for the improvement in quality of services for the Mobile Phone Services providing companies under study:

A) Suggestions for individual Mobile Phone Services providing companies:

1) Tata:

- i) This Mobile Phone Services providing company is required to improve the operating network facility.
- ii) This Mobile Phone Services providing company should also plan to widen their network coverage.
- iii) This Mobile Phone Services providing company should improve their information sharing process with regard to latest information related to their services.
- iv) The switching rate of loyal customers for this Mobile Phone Services providing company is very high so the company should concentrate on quality of services to retain the existing customers at reasonable price.

2) BSNL:

- i) This Mobile Phone Services providing company should improve their information sharing process with regard to latest information related to their services.

3) Airtel:

- i) The switching rate of loyal customers for this Mobile Phone Services providing company is very high so the company should concentrate on quality of services to retain the existing customers at reasonable price.
- ii) With regard to the cost aspect, this Mobile Phone Services providing company should reduce their cost from existing level so that they can provide services at comparatively low price as compare to other Mobile Phone Services providing companies under study except Reliance.

4) Reliance:

- i) To attract the price sensitive customers, this Mobile Phone Servicesd providing company should reduce charges from the existing level.

- ii) With regard to the cost aspect, this Mobile Phone Services providing company should reduce their cost from existing level so that they can provide services at comparatively low price as compare to other Mobile Phone Services providing companies under study except Airtel.
- iii) The billing system of this Mobile Phone Services providing company is not up to the expectation of the customers; hence they should improve the services by sending details of bill by SMS to the customers.

5) Idea:

- i) This Mobile Phone Services providing company is required to improve the operating network facility.
- ii) To attract the price sensitive customers, this Mobile Phone Servicesd providing company should reduce charges from the existing level.
- iii) This Mobile Phone Services providing company should also plan to widen their network coverage.
- iv) The billing system of this Mobile Phone Services providing company is not up to the expectation of the customers; hence they should improve the services by sending details of bill by SMS to the customers.

B) General Suggestion:

Out of six Mobile Phone Services providing companies, Idea, Tata and BSNL Mobile Phone Services providing companies should try to improve the quality of services for the better satisfaction of their customers because response rate of the respondents regarding “Very Good” service was 34.9 % 35.7 % and 36.8 % respectively.

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**Appendix – I: Calculation of Individual Average, Rank and Combined Average for
Questions of Section – II of Questionnaire**

Table 5.23

Calculation of Individual Average, Rank and Combined Average for Question No 1 of Section – II

Question No (1): I believe that my company provides best operating network.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	53	7	20	28	4	28	140	265	35	100	140	20	140	700
AGREE	69	32	35	18	16	33	203	276	128	140	72	64	132	812
NEUTRAL	40	16	26	9	11	17	119	120	48	78	27	33	51	357
DISAGREE	9	6	7	4	2	6	34	18	12	14	8	4	12	68
STRONGLY DISAGREE	5	2	2	1	1	3	14	5	2	2	1	1	3	14
TOTAL	176	63	90	60	34	87	510	684	225	334	248	122	338	1951
INDIVIDUAL AVERAGE								3.89	3.57	3.71	4.13	3.59	3.89	
RANK								2.50	6.00	4.00	1.00	5.00	2.50	
COMBINED AVERAGE													3.83	

Table 5.24

Calculation of Individual Average, Rank and Combined Average for Question No 2 of Section – II

Question No (2):Pricing strategy is very effective.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	41	6	18	9	10	28	112	205	30	90	45	50	140	560
AGREE	57	24	32	22	11	41	187	228	96	128	88	44	164	748
NEUTRAL	56	26	32	22	9	14	159	168	78	96	66	27	42	477
DISAGREE	20	7	5	6	2	3	43	40	14	10	12	4	6	86
STRONGLY DISAGREE	1	0	3	1	2	1	8	1	0	3	1	2	1	8
TOTAL	175	63	90	60	34	87	509	642	218	327	212	127	353	1879
INDIVIDUAL AVERAGE								3.67	3.46	3.63	3.53	3.74	4.06	
RANK								3.00	6.00	4.00	5.00	2.00	1.00	
COMBINED AVERAGE													3.69	

Table 5.25

Calculation of Individual Average, Rank and Combined Average for Question No 3 of Section – II

Question No (3):Network coverage is wider than other companies.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	47	8	11	20	2	26	114	235	40	55	100	10	130	570
AGREE	61	21	33	16	12	31	174	244	84	132	64	48	124	696
NEUTRAL	52	21	30	15	15	19	152	156	63	90	45	45	57	456
DISAGREE	16	12	14	7	4	10	63	32	24	28	14	8	20	126
STRONGLY DISAGREE	0	1	2	2	1	1	7	0	1	2	2	1	1	7
TOTAL	176	63	90	60	34	87	510	667	212	307	225	112	332	1855
INDIVIDUAL AVERAGE								3.79	3.37	3.41	3.75	3.29	3.82	
RANK								2.00	6.00	4.00	3.00	6.00	1.00	
COMBINED AVERAGE													3.64	

Table 5.26

Calculation of Individual Average, Rank and Combined Average for Question No 4 of Section – II

Question No (4):Information sharing process is efficient.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	32	8	20	15	2	12	89	160	40	100	75	10	60	445
AGREE	77	27	24	25	15	32	200	308	108	96	100	60	128	800
NEUTRAL	52	24	36	18	13	29	172	156	72	108	54	39	87	516
DISAGREE	13	4	6	2	2	11	38	26	8	12	4	4	22	76
STRONGLY DISAGREE	2	0	4	0	2	3	11	2	0	4	0	2	3	11
TOTAL	176	63	90	60	34	87	510	652	228	320	233	115	300	1848
INDIVIDUAL AVERAGE								3.70	3.62	3.56	3.88	3.38	3.45	
RANK								2.00	3.00	4.00	1.00	6.00	5.00	
COMBINED AVERAGE													3.62	

Table 5.27

Calculation of Individual Average, Rank and Combined Average for Question No 5 of Section – II

Question No (5):My brand loyalty is very high.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	31	8	13	14	1	20	87	155	40	65	70	5	100	435
AGREE	65	25	29	18	11	27	175	260	100	116	72	44	108	700
NEUTRAL	57	21	39	19	12	26	174	171	63	117	57	36	78	522
DISAGREE	19	9	8	7	8	12	63	38	18	16	14	16	24	126
STRONGLY DISAGREE	4	0	1	2	2	2	11	4	0	1	2	2	2	11
TOTAL	176	63	90	60	34	87	510	628	221	315	215	103	312	1794
INDIVIDUAL AVERAGE								3.57	3.51	3.50	3.58	3.03	3.59	
RANK								3.00	4.00	5.00	2.00	6.00	1.00	
COMBINED AVERAGE													3.52	

Table 5.28

Calculation of Individual Average, Rank and Combined Average for Question No 6 of Section – II

Question No (6):Effective handling during peak load.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	28	8	8	12	4	10	70	140	40	40	60	20	50	350
AGREE	65	28	30	26	13	28	190	260	112	120	104	52	112	760
NEUTRAL	60	22	47	18	13	24	184	180	66	141	54	39	72	552
DISAGREE	20	4	3	3	4	19	53	40	8	6	6	8	38	106
STRONGLY DISAGREE	3	1	2	1	0	6	13	3	1	2	1	0	6	13
TOTAL	176	63	90	60	34	87	510	623	227	309	225	119	278	1781
INDIVIDUAL AVERAGE								3.54	3.60	3.43	3.75	3.50	3.20	
RANK								3.00	2.00	5.00	1.00	4.00	6.00	
COMBINED AVERAGE													3.49	

Table 5.28

Calculation of Individual Average, Rank and Combined Average for Question No 7 of Section – II

Question No (7): Good customer services.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	39	9	23	18	8	16	113	195	45	115	90	40	80	565
AGREE	77	29	27	25	17	38	213	308	116	108	100	68	152	852
NEUTRAL	47	16	30	13	8	18	132	141	48	90	39	24	54	396
DISAGREE	10	6	8	3	0	13	40	20	12	16	6	0	26	80
STRONGLY DISAGREE	3	3	2	1	1	2	12	3	3	2	1	1	2	12
TOTAL	176	63	90	60	34	87	510	667	224	331	236	133	314	1905
INDIVIDUAL AVERAGE								3.79	3.56	3.68	3.93	3.91	3.61	
RANK								3.00	6.00	4.00	1.00	2.00	5.00	
COMBINED AVERAGE													3.74	

Table 5.30

Calculation of Individual Average, Rank and Combined Average for Question No 8 of Section – II

Question No (8):Company’s approach is professional for services.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	47	6	18	19	8	13	111	235	30	90	95	40	65	555
AGREE	66	27	25	16	15	38	187	264	108	100	64	60	152	748
NEUTRAL	45	23	30	22	9	21	150	135	69	90	66	27	63	450
DISAGREE	18	5	13	3	2	12	53	36	10	26	6	4	24	106
STRONGLY DISAGREE	0	2	4	0	0	3	9	0	2	4	0	0	3	9
TOTAL	176	63	90	60	34	87	510	670	219	310	231	131	307	1868
INDIVIDUAL AVERAGE								3.81	3.48	3.44	3.85	3.85	3.53	
RANK								3.00	5.00	6.00	1.50	1.50	4.00	
COMBINED AVERAGE													3.66	

Table 5.31

Calculation of Individual Average, Rank and Combined Average for Question No 9 of Section – II

Question No (9):Cost is comparatively low.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	31	6	12	6	11	39	105	155	30	60	30	55	195	525
AGREE	41	22	21	16	8	30	138	164	88	84	64	32	120	552
NEUTRAL	57	22	31	25	10	12	157	171	66	93	75	30	36	471
DISAGREE	35	11	20	10	5	5	86	70	22	40	20	10	10	172
STRONGLY DISAGREE	12	2	6	3	0	1	24	12	2	6	3	0	1	24
TOTAL	176	63	90	60	34	87	510	572	208	283	192	127	362	1744
INDIVIDUAL AVERAGE								3.25	3.30	3.14	3.20	3.74	4.16	
RANK								4.00	3.00	6.00	5.00	2.00	1.00	
COMBINED AVERAGE													3.42	

Table 5.32

Calculation of Individual Average, Rank and Combined Average for Question No 10 of Section – II

Question No (10):Billing system is very good.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	31	7	17	10	10	22	97	155	35	85	50	50	110	485
AGREE	60	21	25	17	8	37	168	240	84	100	68	32	148	672
NEUTRAL	60	24	38	25	12	22	181	180	72	114	75	36	66	543
DISAGREE	15	6	7	7	2	4	41	30	12	14	14	4	8	82
STRONGLY DISAGREE	10	5	3	1	2	2	23	10	5	3	1	2	2	23
TOTAL	176	63	90	60	34	87	510	615	208	316	208	124	334	1805
INDIVIDUAL AVERAGE								3.49	3.30	3.51	3.47	3.65	3.84	
RANK								4.00	6.00	3.00	5.00	2.00	1.00	
COMBINED AVERAGE													3.54	

Table 5.33

Calculation of Individual Average, Rank and Combined Average for Question No 11 of Section – II

Question No (11):Company provides bill collection facility.

SCALE	NO OF RESPONDENTS							TOTAL SCORE OF RESPONDENTS						
	C1	C2	C3	C4	C5	C6	TOT	C1	C2	C3	C4	C5	C6	TOT
STRONGLY AGREE	26	5	11	6	3	11	62	130	25	55	30	15	55	310
AGREE	68	22	33	15	11	29	178	272	88	132	60	44	116	712
NEUTRAL	66	27	33	26	17	38	207	198	81	99	78	51	114	621
DISAGREE	9	5	8	10	3	6	41	18	10	16	20	6	12	82
STRONGLY DISAGREE	7	4	5	3		3	22	7	4	5	3	0	3	22
TOTAL	176	63	90	60	34	87	510	625	208	307	191	116	300	1747
INDIVIDUAL AVERAGE								3.55	3.30	3.41	3.18	3.41	3.45	
RANK								1	5	3.5	6	3.5	2	
COMBINED AVERAGE													3.43	

QUESTIONNAIRE

QUESTIONNAIRE SEEKING INFORMATION OF CUSTOMER
RELATIONSHIP APPROACH OF THEIR CONCERNED MOBILE PHONE
SERVICE PROVIDER

SECTION - I

1)Name of Customer:

2)Age:

3)Sex:M/F

4)Education:(Please Tick)

Qualification / Stream	Arts	Commerce	Science	Other
UG				
G				
PG				

5) Income:(Please Tick)

Income Range in Rupees	Tick
5000 to 10000	
10001 to 15000	
15001 to 20000	
20001 and above	

6)Occupation:(Please Tick)

Occupation Type	Tick
Service	
Business	
Professional	

7)Experience:(Please Tick)

Experience Range in Years	Tick
1 to 5	
6 to 10	
11 to 15	
16 to 20	
21 and above	

8) Your mobile phone service provider: Hutch / Idea / AirTel /
Reliance / TATA / BSNL

9)Type of your mobile connection:

Type of Connection	Tick
Post-Paid Connection	
Pre-Paid Connection	

10)Since when you are using mobile phone service:

_____Years_____Months

11)Information about available mobile phone service provider:

Name of Service Provider	Tick
Hutch	
Idea	
BSNL	
AirTel	
TATA	
Reliance	

12)Information of your present and past mobile service provider:

Present / Past Service Provider	Name of Service Provider
Present	
Past	

13)Opinion about your present service provider: (Please Tick)

Level of Satisfaction	Tick
Very Good	
Good	
Fair	
Not Good	

SECTION – II

(Please tick in appropriate box)

Sr	Question	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	I believe that my company provides best operating network					
2	Pricing strategy is very effective					
3	Network coverage is wider than other companies					
4	Information sharing process is efficient					
5	My brand loyalty is very high					
6	Effective handling during peak load					
7	Good customer services					
8	Company's approach is professional for services					
9	Cost is comparatively low					
10	Billing system is very good					
11	Company provides bill collection facility					