CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION
The cellular telephony in India has started long back in 1990s. In 1994 government had issued licenses for cellular mobile services only for metropolitan cities: Delhi, Mumbai, Kolkata & Chennai. India has shown tremendous growth in past few years in telecommunication sector. The change in technology has change the consumer mind. From fixed lines to wireless lines the number of subscribers have shown remarkable growth.

Earlier the concept of quality was very limited and was restricted to manufacturing & production industries only. The goal was maximum production. At that time the customer requirements and consistency of quality was not taken into consideration. Service area was not considered as an area to be evaluated from quality assurance point of view.

With change in technology, approach, customer perception and with industrial growth the quality concept was incorporated even with service industry also. Authorities have framed several quality standards in order to meet the quality of delivered service. In 1997 the Telecom Regulatory Authority of India was set up to support the service quality.

With the awareness of quality, today’s customer is more demanding and so the industrial growth has been forced to listen to the voice of customer. The change in technology has brought the quality awareness among customers.
2.2 ABOUT QUALITY AND QUALITY CONTROL

The dictionary meaning of Quality is getting Excellency. When some system, product or service gives the outstanding result then we can say that the respective system is of good quality.

In general Quality means$^2$

- Fitness for use
- Conformance to standards
- Conformance to requirements
- Works as per our requirement

Quality desires the consistency & reliability in the end result. Some of the quality attributes are – Consistency, reliability, lack of errors & defects. In case of mass production quality becomes a critical issue & so forces the parent body for imposing the proper Quality Control. Quality Control is a mechanism in order to control the quality by measuring the variations. The main aim of Quality Control is to get the Quality with zero effect as a goal. Zero effect means getting near about zero defects & so increasing the productivity.

The Service Quality can be defined from both the customer perspective as well as service provider perspective. From service provider’s perspective, service quality can be defined as the degree to which the service features meet the service specifications & standards. But from the customer perspective the service quality is defined as that how much the customer is satisfied with the delivered service and how well these services meet the customer expectations. Higher the quality higher will be the satisfaction & vice-versa from customer perspective as well as service provider perspective.
Quality has to measure the variations. **Statistical Process Control (SPC)** is used with control charts to track variations & to identify its causes. A Qualitative process is one, which has minimum, or no variations.

As stated by Levin in *Statistics for Management*

“If the process is out of control because there is still some special cause variation present, identify and correct the cause of that variation. If the process is brought in-control, then quality can be improved by redesigning the process to reduce its inherent variability.”³

Various control charts used in Statistical Process Control are⁴:

a) **X bar charts** – Control charts for process means

b) **p charts** – Control charts for Attributes

c) **R charts** – Control charts for Process Variability

**Control Chart** is a plot of some parameters of interest as (x bar, p, R) over time. They are used to identify assignable variables & accordingly to make adjustments to the process being monitored. Control chart uses control limits, which are nothing but upper & lower limits on control charts. Such limits are used to ensure that all observations must fall within the limits for the process under control.

Quality of system depends on its various attributes & parameters. The performance & quality of system can refer to measurable characteristics as well as non-measurable characteristics. To assess the quality of product, quality attributes are arranged to form quality metrics. These metrics could be size-oriented metrics, Function oriented metrics, LOC
& FP metrics, Object oriented metrics, Use case oriented metrics, Web engineering metrics etc.

In the 1940’s and 1950’s W. Edwards Deming, had proposed an innovative approach towards the quality management. Deming had stressed on the importance of the "voice of the customer". Later on, during 1950 it was observed that in US the companies were concerned with profit & so started compromising with quality unknowingly. But this had created a huge gap between the companies & the customer, which resulted in loss for companies. But during the same period Japanese had gained as they had taken in to consideration the customer’s opinion while formulating the business strategies. This had brought the concept that customer opinion should be included in order to satisfy the end users. This was the major movement towards the quality improvement & this was when Taguchi method was introduced in market.

Taguchi & Deming both share a common goal of increasing the Quality by considering the voice of customer. Taguchi\(^5\) basically uses the Kaizen concept, which means continuous improvement with the involvement of every one. As mentioned earlier that the basic goal of both Taguchi & Deming is to improve the quality. They define the quality in terms of the Customer Satisfaction. And so they had stressed on the need of understanding the customer need thoroughly. Taguchi methods help in improving the quality & uses Kaizen concept, which helps in continual change and improvement.

Quality Function Definition (QFD) :
A quality system is necessary for every organization in order to increase their respective market share & satisfying the customer. QFD, Quality Function Definition is one way of monitoring the quality system. As
defined by Terninko “QFD focuses on delivering values by understanding the customer's wants & needs and then deploying these expectations throughout the development process.”

This forces the service provider to understand the customer requirements before the start of development process & then by implementing those needs throughout the process can enhance the quality considerably. The inclusion of QFD concept decreases the introductory cost but increases the profit as market share grows because of satisfied customers.

QFD implementation with various functional units (F1, F2, F3 etc) is beneficial because:

- QFD facilitates proper communication & cooperation among various functions of an organization.
QFD aligns the entire organizational functions with the customer’s perspective. This is possible, as this approach understands the customer requirements before the start of the process & later implement them during the process.

By everyone’s efforts, QFD involves all of the organization’s functions in the design process & allows every one to concentrate on the customer's needs.

This promotes the consistency in process.

With QFD the initial investment of resources are more and which gradually reduces later-on but the traditional allocation of resources starts with low and increases in terms of staff time and money later-on with the occurrence of major problems.

Quality is highly correlated with customer satisfaction & customer satisfaction is affected by the number of errors in service assured by the service provider. If an employee during testing or inspection detects any error/ fault then it will add cost to the service provider. But if customer finds the errors, then it leads to dissatisfaction, which ultimately turns to loss of customer confidence & may loose customers themselves.

2.3 EXCELLENCY IN SERVICE QUALITY
Customer perception relates with customer satisfaction & service quality. Customers perceive services in terms of the Quality of Services. But service Quality & customer satisfaction are two different terms. Service quality is affected by the service quality attributes like reliability, assurance, responsiveness, & understanding. Customer satisfaction is
affected by the customer expectation & customer perception, which may change from person to person.

To bring out the Quality Excellence in cellular mobile services the need is to meet the customer demand. As shown in figure 2.2 customer satisfaction is affected by several parameters including service quality. Service providers are trying to achieve their goal by claiming as the consistent performance & with high service quality. But the question is had they really considered the quality parameters to achieve & claim the stated quality? Meeting & maintaining the satisfaction level among present customers requires the effective & efficient service quality from service provider companies. Effectiveness comes through the goal achievement, which is mainly the fulfillment of customer requirements, & efficiency reflects the utilization of resources.

To raise the satisfaction level the need is to focus the several existing service parameters considered by these service providers & their effect on quality from customer satisfaction point of view.
The main objective of Quality Assurance & Quality Control is to discover gaps between ‘Customer Requirements’ & to be ‘Delivered Product’. Quality of mobile phones can be measured in terms of Quality of Service performance parameters and Network Performance parameters. As defined by International Telecommunication Union the Network performance is the ability of a network or network portion to provide the functions related to communications between users. Quality of service is defined as the collective effect of service performance, which determines the degree of satisfaction of a user. The Quality of Service parameters considered in study are Customer Care, Billing Information, Connectivity and Call Drops. The Network Performance Parameters are like: bandwidth, speed, etc.

TRAI is receiving various complaints form customers regarding poor quality of service. The Press Release from time to time on the site of Telecom Regulatory Authority of India was considered as the main source of literature. Benchmarks are obtained from TRAI site against several quality parameters from customer service point of view. The information and updated news releases available on Cellular Operators Association of India was studied to obtain the status of service providers in India. IBM includes several parameters for measuring the customer satisfaction like capability, functionality, usability, performance, reliability, documentation, service & overall impact. HP includes parameters like Functionality, reliability, and service etc.  

As per the Telecom Regularity Authority of India (TRAI) study on service of cellular mobile services report, TRAI is receiving a number of complaints from consumers regarding the poor quality of performance and services.  

A Study of Mobile Services From Customers’ Perspective
a number of complaints from consumers regarding call drops, poor coverage, not getting range, poor service from providers etc.\(^9\)

As defined by the TRAI for the Quality of Service the desired key parameters for customer satisfaction measurement are:\(^{10}\)

(i) Provision of service  
(ii) Billing performance  
(iii) Help services  
(iv) Network performance, reliability and availability  
(v) Maintainability  
(vi) Customer satisfaction with offered supplementary services  
(vii) Overall customer satisfaction

Study has taken in to consideration the following Service Quality parameters to observe their impact on Customer satisfaction:

- Network Coverage, Billing Services, Customer care, Call Drop, & Multimedia (Value Added service)

### 2.4 CUSTOMER SATISFACTION INDICES

![Customer Satisfaction Diagram]

Satisfaction relates with achieving the expected results. If customer meets the expected demand then we can say that the satisfaction is high. Customer Satisfaction is evaluated with respect to the fulfillment of customer needs. If service providers do not meet the customer need
then dissatisfaction increases. A cell phone user requires better network connectivity without any network problem, reduced tariff, immediate positive response from the customer care, along with various effective & efficient value added services.

Customer satisfaction is influenced by several parameters like: service features, customer feelings & emotions, competing environment, monetary value & customer Perception. Customer perception changes from person to person. The age, gender, economic condition, and profession influence it. Perceptions are always considered relative to expectations, which are dynamic in nature.¹¹

In order to maintain the quality the need is to measure it & then compare with the set benchmark. To measure the customer satisfaction companies use the Customer Satisfaction Indexes. Customer Satisfaction index is used basically to get the overall quality. Several such indexes are¹²:

2) American Customer Satisfaction Index (ACSI) in US in 1994
3) Swiss Index of Customer Satisfaction (SWICS)
4) Deutsche Kundenbarometer of Germany in 1992

**2.4.1 AMERICAN CUSTOMER SATISFACTION INDEX**

The American Customer Satisfaction Index¹³ (ACSI) is an economic indicator that measures the satisfaction of consumers across the U.S. economy. The National Quality Research Center (NQRC) at the University of Michigan in Ann Arbor, Michigan produces it. The ACSI was based on a model originally implemented in 1989 in Sweden called the Swedish Customer Satisfaction Barometer (SCSB). It is a measure
of service quality as experienced by the consumer. **ACSI measures a score after interviewing a number of customers on their perceptions towards quality, their expectations, complaints, & satisfaction.**\(^{14}\)

Customer satisfaction is affected by service quality. To measure the customer satisfaction the need is to understand the service quality dimensions. **Five service quality dimensions as defined by A. Parasuraman, Valerie Zeithaml and Leonard Berry** are \(^{15}\):

a) **Reliability** – It is the Ability to perform the promised service dependably, accurately & consistently for a long period of time.

b) **Responsiveness** – Responding to customer as & when required. In other word it requires Good customer care service with willingness to help.

c) **Assurance** – Knowledge, Courtesy, Trust & Confidence. This builds a tight & positive bonding between the customer & the service provider.

d) **Empathy** – Empathy means understanding. The service provider must have a clear-cut understanding that what customer requires. Service providers must be Caring, & should provide individual attention to customers

e) **Tangibles** – Appearance of physical facilities, equipment, personnel, documents etc (i.e. any touchable thing).

These service quality dimensions are applicable to any service whether it is network coverage, Customer care, Billing or Value Added Service and service providers should follow them to enhance the service quality.
2.5 EXISTING SERVICE QUALITY MODELS

Today the concept of quality has been changed due to the voice of the customer & customer awareness. And so service providers are required to evaluate the quality level from customer requirement & satisfaction benchmark point of view.

Several quality models are introduced to reduce the gap between customer & service providers. With the help of these quality models, the service provider can understand customer requirements from quality perception in a better way. Some of the models which are taken in to consideration during the study are :

- Service Triangle Management Model
- Cause-Effect Model
- Servqual Model
- Kano Model
- Service Expectation Model
- Service Profit Chain Model

Such models help to maintain the quality level by reducing the gap between customer & service provider.

2.5.1 Impact of service quality model on mobile services

The researcher had gone through the basic concepts of all these models & then fit them in the study.

2.5.1.1. Service triangle management model\textsuperscript{16}

This model focuses on the three basic groups of the service industry & shows their impact on the service which customer receives.
- The service strategy of service providers
- People involved in providing various services to customer
- Organization’s system (service provider’s system)

![Service Triangle Management Model](image)

**Fig. 2.3 : Service Triangle Management Model**

*Source : Karl Albrecht & Ron Zemke, service America in services Marketing by C. Bhattacharjee pg 58*

Here the edges reflect six different relationships of service providers with customer satisfaction. :

1. Customer should know the service provider’s policy & strategies.
2. Customer must have transparent communication with service provider.
3. Impact of organization’s system in terms of services offered to customer on customer satisfaction.
4. Awareness of Service providers strategies to Employees.
5. Need of consistency between the service provider’s policies & the actual system, which they are implementing in day to day operations.

6. Impact of organization’s system in terms of services offered to customer on internal employees of service provider.

2.5.1.2 Cause Effect Model
The Cause Effect model basically helps to understand the causal relationships\textsuperscript{17} &/or association among different sets of variable considered under study. It shows the relationship among, dependent, independent, intervening and extraneous variables.

Causal analysis basically highlights the major impact of various service factors on the service quality. This model shows different attributes & their corresponding effects on the service characteristics. The effect highlights that there are several other factors exist, which may play important role in bringing change in quality factors & so may affect the customer satisfaction. Here the service quality has become the cause for which the assumed effect is the fulfillment of customer needs that means the customer satisfaction. Through this model researcher is trying to show the relevant factors from customer perception point of view, which may affect the customer satisfaction and so could hamper the service quality. The service quality is a cause, which is good if the satisfaction level of customer is high. That’s why the assumed effect of service quality is the customer satisfaction.
Industrial service quality is a study of customer satisfaction and loyalty in relation to service providers. SERVQUAL takes into account the perceptions of customers of the relative importance of service attributes. This allows an organization to prioritize and use its resources to improve the most critical service attributes. In order to measure the customer satisfaction, several quality dimensions are required to be considered. David A. Garvin and Parasuraman, Valerie Zeithaml, and Leonard Berry (had defined several service quality dimensions from customer perception point of

Fig. 2.4: Causal Model for Mobile Services

Explanation of these different variables with reference to mobile services as given in figure 2.4 are explained in chapter 3 under section 3.7.

2.5.1.3 Servqual Model

SERVQUAL takes into account the perceptions of customers of the relative importance of service attributes. This allows an organization to prioritize and use its resources to improve the most critical service attributes. In order to measure the customer satisfaction, several quality dimensions are required to be considered. David A. Garvin and Parasuraman, Valerie Zeithaml, and Leonard Berry (had defined several service quality dimensions from customer perception point of
view, some of which are included in table 2.1 along with their relevancy with the mobile services.¹⁸

<table>
<thead>
<tr>
<th>Quality Dimensions</th>
<th>Meaning</th>
<th>Relevancy with Mobile services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tangibles</td>
<td>These are the physical facilities available with appearance</td>
<td>Mobile handset</td>
</tr>
<tr>
<td>2 Reliability</td>
<td>It is the ability to perform the promised service consistently with full accuracy</td>
<td>Network service, billing, VAS, customer care</td>
</tr>
<tr>
<td>3 Responsiveness</td>
<td>It is the ability of willingness to help customers and provide prompt service</td>
<td>Customer Care service</td>
</tr>
<tr>
<td>4 Competence</td>
<td>Possession of required skill and knowledge to perform service</td>
<td>Service provider personnel</td>
</tr>
<tr>
<td>5 Courtesy</td>
<td>Politeness, consideration respect, and friendliness of contact personnel</td>
<td>Service provider personnel</td>
</tr>
<tr>
<td>6 Credibility</td>
<td>Trustworthiness, believability, honesty of service provider</td>
<td>Better network connectivity, reduced tariff</td>
</tr>
<tr>
<td>7 Feel secure</td>
<td>Freedom from danger, risk, or doubt</td>
<td>Confidentiality, Secured transaction</td>
</tr>
<tr>
<td>8 Access</td>
<td>Approachable and easy of contact</td>
<td>Effective Customer care</td>
</tr>
<tr>
<td>9 Communication</td>
<td>Listens to customers &amp; acknowledges their comments</td>
<td>Effective Customer care</td>
</tr>
<tr>
<td>10 Understanding the customer</td>
<td>Making efforts to know customers and their needs</td>
<td>Effective Customer care</td>
</tr>
</tbody>
</table>

With reference to these parameters the Parashuraman, Zeithaml defined the Servqual model in terms of Gap Model. The gap model of service quality highlights the customer focus. With the involvement of customer expectation and customer perception the service quality excels in a structured and practical way.¹⁹
In Servqual model given by Parasuraman, Valerie Zeithaml, and Leonard Berry, there exists gap between the services delivered & services received by the customer. There is a gap in understanding the customer requirements from the service provider’s & customer’s perception. Parasuraman and Zeithaml found that service quality is a measure between service perceptions as well as expectations\(^\text{21}\).

Gap 1 : customer expectations & mgt. perceptions  
Gap 2 : Mgt. Perceptions & Service Specifications  
Gap 3 : Service Deliveries & External Communications.  
Gap 4 : customer expectations & mgt. perceptions  
**Gap 5 : customer expectations & Experience**
Service quality can be measured by measuring the gap between two different areas. Wider is the gap will indicate the poor service quality. And the small value of gap will indicate the better service quality.

There exists a big gap (Gap 5 in diagram) between what customer expects from service provider regarding mobile services and what they actually receives. SERVQUAL model says that to improve the service quality, the need is that every service provider should close this gap and so can increase the customer satisfaction level. As pointed out in this model the customer gap (Gap 5) is caused by the totality of all Provider Gaps:

\[
\text{Gap 5} = \text{Gap 1} + \text{Gap 2} + \text{Gap 3} + \text{Gap 4}
\]

Customer Gap can be reduced if the service provider could control & reduce its four gaps.

The high quality service requires that service provider should understand the customer need & their expectation thoroughly. But if the service provider understands the customer expectation from service provider perception then there exists a gap (Gap 1 in fig. 2.5). Once the service provider understands the customer expectation properly (from Customer perception also) then these expectations are molded into customer oriented service designs and standards. If service provider does not understand the customer perception clearly then it will leads to another gap, which is Gap2 in Gap model diagram. This improper design and standard may further lead to improper service delivery, which emerged Gap 3 in diagram.
Usually when service provider promises some of the services to customer regarding the delivered and if the service provider fails in fulfilling those promises then this may further lead to customer dissatisfaction. This lack of fulfillment leads to Gap 4 in diagram.

To increase the overall customer satisfaction among mobile service customers the need is of increasing the overall service equality from customer perception. That means mobile service provider must try to reduce the Gap 5 which can be less if Gap1, Gap2, Gap3 & Gap4 are minimum. This shows that service provider should understand the expectations of mobile user regarding network connectivity, billing services, Activation of card, Customer care in response to complaints, call drop, Efficient Value Added Services in order to minimize the Gap5.

2.5.1.4 The KANO Model

Kano gave the satisfaction model after considering three basic factors, which influences the customer satisfaction. Kano model divides the customer requirements in three broad categories: the normal requirements which must be fulfilled by the service providers, the exciting requirements which helps in increasing the service value and the expected requirement which will make customer as happy if provided by the service provider.

1. **Basic Factors.** (Normal Requirements are like Dissatisfiers, which Must have) – These are the minimum requirements, which will cause dissatisfaction if they are not fulfilled, but do not cause customer satisfaction if they are fulfilled (or are exceeded). In case of mobile services the customer perception focuses on the good network coverage otherwise the customer dissatisfaction level
starts increasing. Better network coverage without any network related problem is the basic requirement of customer, which causes dissatisfaction if service provider fails to provide as desired by the customer.

2. **Excitement Factors.** (Exciting Requirements) (Satisfiers. Attractive.) - Such factor increases customer satisfaction if delivered but do not cause dissatisfaction if they are not delivered. These factors surprise the customer and generate ‘delight’. Using these factors, a company can really distinguish itself from its competitors in a positive way. By receiving special discounts in bills, new multimedia features or even special billing offers will always make the mobile user happy and so will increase the satisfaction level if provided. But if these additional schemes are not available then it won’t increase the customer dissatisfaction level.

3. **Performance Factors** (Expected Requirement). These are the expected factors, which cause satisfaction if the performance of such factors is high, and they cause dissatisfaction if the performance is low. Such attributes are like customer-care, handling bills or information from mobile service providers. If the customers get the updated information from time to time then it increases the performance & so is the satisfaction level. In case of mobile services the customer perception says that customer requires minimum or no call drop, good and efficient customer care service, frequent billing updates etc. these are the expected requirements for mobile
customer and so if service provider fulfills the customer expectation as they want then the customer satisfaction will be high otherwise it will be low.

Fig. 2.6 : Kano Model for Mobile services

2.5.1.5 : Service Profit Chain Model

If we look towards the service profit chain as given by James L. Heskett, W. Earl Sasser Jr. & Leonard A. Schlesinger, it shoes that the profit & the growth of service organization depends upon the customer loyalty which is linked with the customer satisfaction. If the customer is dependent on some particular service & if they receive that service then customer may be satisfied but this customer satisfaction is linked with the service quality. Whatever customer wants if they receive but of no use then it will lead to the poor quality & so definitely with such
service customer will not be satisfied. But if the delivered service quality is good then it will increase the customer satisfaction.

![Service-Profit Chain Diagram](image)

Higher customer satisfaction increases the customer loyalty and this will help service providers in retaining the old subscribers as well as in adding the new customers.

### 2.5.1.6 The Expected Service Model

Customer satisfaction with reference to the mobile services can be measured through their expectation, their selection factor, the mode of use & the basic use of service, which may differ from customer to customer. These attributes & their values are directly affected by the customer perception, which varies from customer to customer. Survey
shows that the actual perception of users differs compared to their expectations. Meeting to perception is referred as achievement of service quality & meeting to expectation is referred as service satisfaction. So as per Service Expectation Model the customer satisfaction can be measured by evaluating the user's expectation. The survey shows that the user expects the basic service requirements like good network coverage, easy to use, good after sales services minimum & uniform roaming charges, up-to-date billing information from time to time, prompt response from customer care etc. from mobile service providers.

Considered Service Parameters

Customer Satisfaction

Mobile Service Quality

Customer Perception about Mobile Services

Customer Expectation about Mobile Services

Network Coverage

Call Drop

Billing

Customer Care

Value Added Services

The customer expectations include:

- 100% network coverage
- No call drops
- Fair billing services
Effective & efficient customer care
Value Added Services
No voice problem
No unwanted messages
Free roaming & uniformity in Number

But what customer receives?
Poor network coverage
Partial call drop outside region
Call charges are high
Frequent unwanted messages
Poor communication from customer care.
No Billing updates

The key parameters upon which customer satisfaction is measured through this survey are:

- Billing performance
- Help services – Customer Care
- Network Connectivity & Coverage, Call drop
- Customer satisfaction with offered supplementary services (Value Added Services)

2.6 VOICE OF CUSTOMER

Voice of the customer (VOC)\textsuperscript{25} is a term used in business to describe the process of capturing a customer's requirements. This is a powerful research technique which helps to extract the customer wants and needs, organize them in hierarchical structured manner & then prioritized those needs according to their relative importance and satisfaction with current alternatives. They are generally conducted at
the start of any new product, process, or service design initiative in order to understand the customer’s wants and needs. This involves the well-planed in-depth interviews with customer, which focuses on the customers’ experiences with current services. Such gathered information is filtered out to get the actual need & then the customer prioritizes these filtered needs.

**Voice of Customer helps in**

a. Having a detailed understanding of the customer’s requirements.

b. It provides a common platform for the working team for going forward.

c. It provides the key inputs for the setting of appropriate specifications & benchmarks for the new product or service.

Gathering information through the voice of customer is very effective, but has certain loopholes. Since the customer expectations are dynamic in nature & so may change frequently. Further, it is usually human tendency that the one who is answering to some one will prefer to give the answer that is what the listener expects. This may lead to somewhat biased information. And so may not provide the correct requirements. VOC data can be Proactive if it is combined with the sales forecasting.

**2.7 SIGNIFICANCE OF THE STUDY**

Here the researcher would like to elaborate the important service quality parameters for cell phone service from customer perception. Using these parameters the customer satisfaction & service quality metrics will be designed. This will help the service providers to know their critical pain areas from customer point of view.
As per Total Quality Management (TQM) concept, service should always be customer centric with Customer focus. The objective of TQM is to achieve the total customer satisfaction by delighting the customer. It says that by delighting the customer means providing the customer with more than what customer wants. Customer focus includes studying customer needs and wants, gathering customer requirements, understanding them from customer perception point of view and then measuring the customer satisfaction.

As mentioned in quality definition the service quality & customer satisfaction are two related terms. The Taguchi’s philosophy shows that the service providers can make their profit if they could offer various services to customers after incorporating their voice. This can raise the customer satisfaction & so can enhance the service quality.

2.7.1 TRAI BENCHMARKS
TRAI has set benchmarks for several service parameters in order to raise the service satisfaction level & to assess the service quality. The research study includes these service parameters from customer perception point of view. Several Press releases and reports received by TRAI indicates that mobile users are complaining regarding poor network coverage, higher tariff, frequent call drops, and poor response from customer care. So researcher has included the customer response for Network coverage, Billing, Call drop, Customer care & Value Added service to understand the perceived service from service provider. To increase the service Quality Telecom Regulatory Authority of India has set certain benchmarks for these, Quality of service parameters. But despite of setting such benchmarks, which are mandatory for every service provider to follow, mobile user is not happy.
TRAI has set up certain benchmarks against these parameters\textsuperscript{26}.

### Table 2.7.1.1 : Benchmarks set by TRAI

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Parameters</th>
<th>Set Benchmarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Percentage satisfied with the billing performance</td>
<td>&gt; 90%</td>
</tr>
<tr>
<td>2</td>
<td>Percentage satisfied with the help services</td>
<td>&gt; 90%</td>
</tr>
<tr>
<td>3</td>
<td>Percentage satisfied with the network performance</td>
<td>&gt; 95%</td>
</tr>
<tr>
<td>4</td>
<td>Percentage satisfied with the offered supplementary services (VAS)</td>
<td>&gt; 95%</td>
</tr>
<tr>
<td>5</td>
<td>Percentage satisfied with the Overall quality of service</td>
<td>&gt; 95%</td>
</tr>
</tbody>
</table>

In this study, the researcher has found that there is a huge gap between the set benchmarks for different parameters & actually what customer receives. The researcher is trying to reduce the gap between the service provider & the customer by incorporating the voice of customer through this survey.

### 2.8 WHAT IS THE DILEMMA ?

Customer satisfaction is the prime need of today’s competitive market. As we had seen that the satisfaction leads to organization’s growth & profit. To meet the customer satisfaction service providers have to meet the service quality from the customer perception point of view. The Telecom Regulatory Authority of India has set benchmarks for service parameters from customer perception but still the TRAI is receiving lot
of complaints regarding the poor quality of cellular services. Service providers are facing the basic challenge in understanding the customer needs & their expectations. Further the service expectations are dynamic & changes from person to person.

So the researcher has identified those required service parameters from customer perception and has gathered the customer expectation on those service parameters, which they want from their respective service providers. Through this survey the researcher is trying to help the service provider in understanding the customer expectation with respect to their perception, so that the customer satisfaction regarding service can be increased.
Chapter 2 : Literature Review

2.9 REFERENCES :


8. “Telecom Regulatory Authority of India (TRAI) had recently issued show cause notices to some of the biggest mobile service providers in the country”. A report published on 7th March 2006, Retrieved on 8/2/2007 from sifybroadband.techwhack.com/414-show-cause-notices-to-telecom-companies,

10. TELCOM REGULATORY AUTHORITY OF INDIA QUALITY OF SERVICE DIVISION, Gist of Comments received from various stakeholders on the consultation paper on fixing the Benchmarks pertaining to Quality of Service for Broadband published on 28th June, 2006 Retrieved on 02/01/2007 from http://www.trai.gov.in/WriteReadData/trai/Upload/Consultation Papers


32. Mike Eiklenborg, Stavros Ioannou, Gregory King II, Mark Vilcheck “Taguchi Methods for Achieving Quality”, the project report at Engineering Management San Francisco State University School of Engineering.

33. Eric Ronney (Nokia UK, Marketing Manager), Peter Olfe (Nokia Japan, Marketing Research Manager), Glenn Mazur, Japan, Business Consultants) “Gemba Research In The Japanese Cellular Phone Market” on http://www.mazur.net/works/nokia_gemba_research_in_japanese_cellular_market.pdf