

A STUDY ON SERVICE QUALITY EXPECTATIONS AND PERCEPTIONS OF TELECOMMUNICATION SECTOR IN INDIA

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ABSTRACT

The phenomenal success of IT and Telecommunication would not have been possible without any effective management framework. The management technologies have also been maturing with evolution of IT & Telecom. In this paper, we trace out some important traditional and current telecommunications management technologies in terms of their strengths and limitations. We analyze them in order to draw lessons and guidelines for emerging research in this field.

Telecommunication networks have been growing with exponential pace, each day brings with it a new innovation in technologies & services that put more demands for appropriate handling of such a large amount of information. Telecom Network Management frame work was relied by many operators and service providers to fulfill their needs for efficient network operation. It is defined in the M.3000, M.3010 and other related documents by ITU-T [3]. ITU-T selected OSI Management standards for TMN framework.

KEYWORD : *Traditional , Current telecommunication , technologies.*

INTRODUCTION

Telecommunication management is a fundamental factor in successfully operating networks and services. It provides various functions such as operation & maintenance (O&M), administration, performance, provisioning, accounting and security. Without it, neither a user can enjoy the benefits of any services nor can the business keep running smoothly. Traditionally the management frameworks were designed keeping in view the demands of specific technology or network. These traditional schemes such as SNMP (Simple Management Network Protocol) and TMN (Telecommunication Management Network) were more technology specific, network centric, centralized and/or weakly distributed management schemes.

History of telecommunication industry:

India is the world's fastest growing industry in the world in terms of number of wireless connections after China, with 811.59 million mobile phone subscribers. According to the world telecommunications industry, India will have 1.200 billion mobile subscribers by 2013. Furthermore projections by several leading global consultancies indicate that the total number of subscribers in India will exceed the total subscriber count in the China by 2013.

In 1851, it was opened for the use of the British East India Company. Subsequently construction of telegraph started throughout India. A separate department was opened to the public in 1854. Dr. William O'Shaughnessy, who pioneered the telegraph and telephone in India, belonged to the Public Works Department, and worked towards the development of telecom. Calcutta or the-then Kolkata was chosen as it was the capital of British India. In early 1881, Oriental Telephone Company Limited of England opened telephone exchanges at Calcutta (Kolkata), Bombay (Mumbai), Madras (Chennai) and Ahmadabad. On the 28th January 1882 the first formal telephone service was established with a total of 93 subscribers. From the year 1902 India drastically changes from cable telegraph to wireless telegraph, radio telegraph, radio telephone, trunk dialing. Trunk dialing used in India for more than a decade, were system allowed subscribers to dial calls with operator assistance.

OBJECTIVES OF THE STUDY

- The primary objective of the project is to identify the right telecom network management system for the organization
- To study the different telecom network management techniques
- To analyse the necessary security tool to save the data for the organization
- To analyse the existing network system and suggest the pros and cons
- To suggest the new and client accepting telecom network management techniques

SCOPE OF THE STUDY

- The study was restricted to the single company so the sample was bounded to a limit
- Do not expect vast knowledge about the techniques from the respondents.

STATEMENT OF PROBLEM

The main problem of the study is to analyse about the telecom network management in TELECOMMUNICATION COMPANIES. The network management is to make the errors occurred in the network industry and also in the company.

INDUSTRIAL PROFILE:

The primary regulator of telecommunications in India is the Telecom Regulatory Authority of India (TRAI). It closely regulates all of the industries mentioned below with the exception of newspapers and the Internet service provider industry. The telecommunications industry in India is dominated by private-sector and two state-run businesses. Most companies were formed by a recent revolution and restructuring launched within a decade, directed by Ministry of Communications and IT, Department of Telecommunications and Minister of Finance. Since then, most companies gained 2G, 3G and 4G licenses and engaged fixed-line, mobile and internet business in India. On landlines, intra-circle calls are considered local calls while inter-circle are considered long distance calls.

Foreign Direct Investment policy which increased the foreign ownership cap from 49% to 74%. Currently Government is working to integrate the whole country in one telecom circle. For long distance calls, the area code prefixed with a zero is dialed first which is then followed by the number (i.e. to call Delhi, 011 would be dialed first followed by the phone number). For international calls, "00" must be dialed first followed by the country code, area code and local phone number. The country code for India is 91. Several international fiber-optic links include those to Japan, South Korea, Hong Kong, Russia, and Germany. Some major telecom operators in India include Airtel, Vodafone, Idea, Aircel, BSNL, MTNL, Reliance Communications, TATA Teleservices, Infotel, MTS, Uninor, TATA DoCoMo, Videocon, Augere, Tikona Digital.

RESEARCH METHODOLOGY

A research process consists of stages or steps that guide the project from its conception through the final analysis, recommendations and ultimate actions. The research process provides a systematic, planned approach to the research project and ensures that all aspects of the research project are consistent with each other. Research studies evolve through a series of steps, each representing the answer to a key question.

INTRODUCTION

This chapter aims to understand the research methodology establishing a framework of evaluation and revaluation of primary and secondary research. The techniques and concepts used during primary research in order to arrive at findings; which are also dealt with and lead to a logical deduction towards the analysis and results.

RESEARCH DESIGN

I propose to first conduct a intensive secondary research to understand the full impact and implication of the industry, to review and critique the industry norms and reports, on which certain issues shall be selected, which I feel remain unanswered or liable to change, this shall be further taken up in the next stage of exploratory research. This stage shall help me to restrict and select only the important question and issue, which inhabit growth and segmentation in the industry.

The various tasks that I have undertaken in the research design process are:

- Defining the information need
- Design the exploratory, descriptive and causal research

EXPLORATORY RESEARCH

The method I used for exploratory research was

- Primary Data
- Secondary data

PRIMARY DATA

New data gathered to help solve the problem at hand. As compared to secondary data which is previously gathered data. An example is information gathered by a questionnaire. Qualitative or quantitative data that are newly collected in the course of research, Consists of original information that comes from people and includes information gathered from surveys, focus groups, independent observations and test results. Data gathered by the researcher in the act of conducting research. This is contrasted to secondary data, which entails the use of data

gathered by someone other than the researcher information that is obtained directly from first-hand sources by means of surveys, observation or experimentation. Primary data is basically collected by getting questionnaire filled by the respondents.

SECONDARY DATA

Information that already exists somewhere, having been collected for another purpose Sources include census reports, trade publications, and subscription services. There are two types of secondary data: Internal and external secondary data. Information compiled inside or outside the organization for some purpose other than the current investigation Researching information, which has already been published? Market information compiled for purposes other than the current research effort; it can be internal data, such as existing sales-tracking information, or it can be research conducted by someone else, such as a market research company or the U.S. government. Secondary source of data used consists of books and websites

DATA COLLECTION

Data collection took place with the help of filling of questionnaires. The questionnaire method has come to the more widely used and economical means of data collection. The common factor in all varieties of the questionnaire method is this reliance on verbal responses to questions, written or oral. I found it essential to make sure the questionnaire was easy to read and understand to all spectrums of people in the sample. It was also important as researcher to respect the samples time and energy hence the questionnaire was designed in such a way, that its administration would not exceed 4-5 mins. These questionnaires were personally administered. The first-hand information was collected by making the people fill the questionnaires. The primary data collected by directly interacting with the people. The respondents were contacted at shopping malls, markets, places that were near to showrooms of the consumer durable products etc. The data was collected by interacting with 120 respondents who filled the questionnaires and gave me the required necessary information. The respondents consisted of housewives, students, businessmen, professionals etc. The required information was collected by directly interacting with these respondents.

DETERMINATION THE SAMPLE PLAN AND SAMPLE SIZE

TARGET POPULATION

It is a description of the characteristics of that group of people from whom a course is intended. It attempts to describe them as they are rather than as the describer would like them to be. Also called the audience the audience to be served by our project includes key demographic information (i.e.; age, sex etc.).The specific population intended as beneficiaries of a program. This will be either all or a subset of potential users, such as adolescents, women, rural residents, or the residents of a particular geographic area. Topic areas: Governance, Accountability and Evaluation, Operations Management and Leadership. A population to be reached through some action or intervention; may refer to groups with specific demographic or geographic characteristics. The group of people you are trying to reach with a particular strategy or activity. The target population is the population I want to make conclude an ideal situation; the sampling frames to matches the target population. A specific resource set that is the object or target of investigation. The audience defined in age, background, ability, and preferences, among other things, for which a given course of instruction is intended.

I have selected the sample through Simple random Sampling

SAMPLE SIZE:

This involves figuring out how many samples one need.

The numbers of samples you need are affected by the following factors:

- Project goals
- How you plan to analyse your data
- How variable your data are or are likely to be
- How precisely you want to measure change or trend
- The number of years over which you want to detect a trend
- How many times a year you will sample each point
- How much money and manpower you have

SAMPLE SIZE

I have targeted 120 people in the age group above 21 years for the purpose of the research. The target population influences the sample size. The target population represents the Delhi regions. . The people were from different professional backgrounds. The details of our sample are explained in chapter named primary research where the divisions are explained in demographics section.

ERRORS IN THE STUDY

Interviewer error

There is interviewer bias in the questionnaire method. Open-ended questions can be biased by the interviewer's views or probing, as interviewers are guiding the respondent while the questionnaire is being filled out. The attitudes the interviewer reveals to the respondent during the interview can greatly affect their level of interest and willingness to answer openly. As interviewers, probing and clarifications maximize respondent understanding and yield complete answers, these advantages are offset by the problems of prestige seeking, social desirability and courtesy biases.

Questionnaire error

The questionnaire designing has to be careful so that only required data is concisely revealed and there is no redundant data generated. The questions have to be worded carefully so that the questions are not loaded and does not lead to a bias in the respondents mind

Respondent error

The respondents selected to be interviewed were not always available and willing to co operate also in most cases the respondents were found to not have the knowledge, opinion, attitudes or facts required additionally uninformed response errors and response styles also led to survey error.

Sampling error

We have taken the sample size of 150, which cannot determine the buying behaviour of the total population. The sample has been drawn from only National Capital Region.

RESEARCH DESIGN

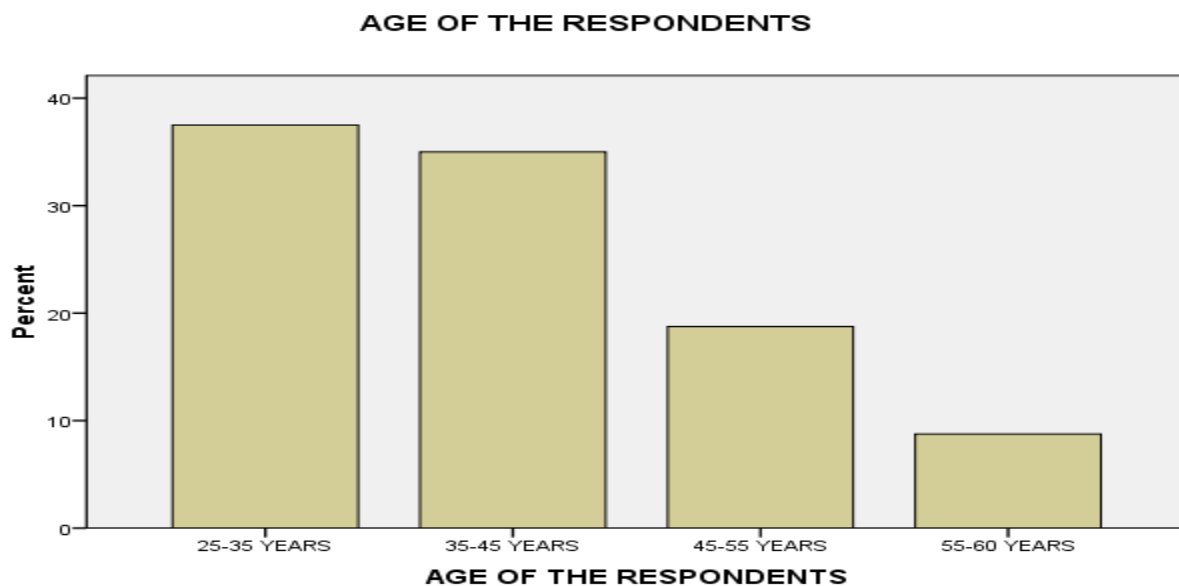
Research design is a conceptual structure within which research was conducted. A research design is the detailed blueprint used to guide a research study towards its objective. It is a series of advanced decision taken together comprising a master plan or a model for conducting the research in consonance with the research objectives. Research design is needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximum information with the minimum effort, time and money.

DATA ANALYSIS AND INTERPRETATION**AGE OF THE RESPONDENTS**

PARTICULARS	NUMBER OF RESPONDENTS	PERCENTAGE OF RESPONDENTS
25-35 YEARS	30	37.5
35-45 YEARS	28	35.0
45-55 YEARS	15	18.8
55-60 YEARS	7	8.8
Total	80	100.0

INTERPRETATION:

The above table shows the age of the respondents took part in the survey. 37.5% of the respondents belong to age group of 25-35 years and that is the maximum number of percentage, 35% of the respondents belong to the age group of 35-45 years and only 8.8% of the respondents are senior executives with the age of 55 and above.

AGE OF THE RESPONDENTS

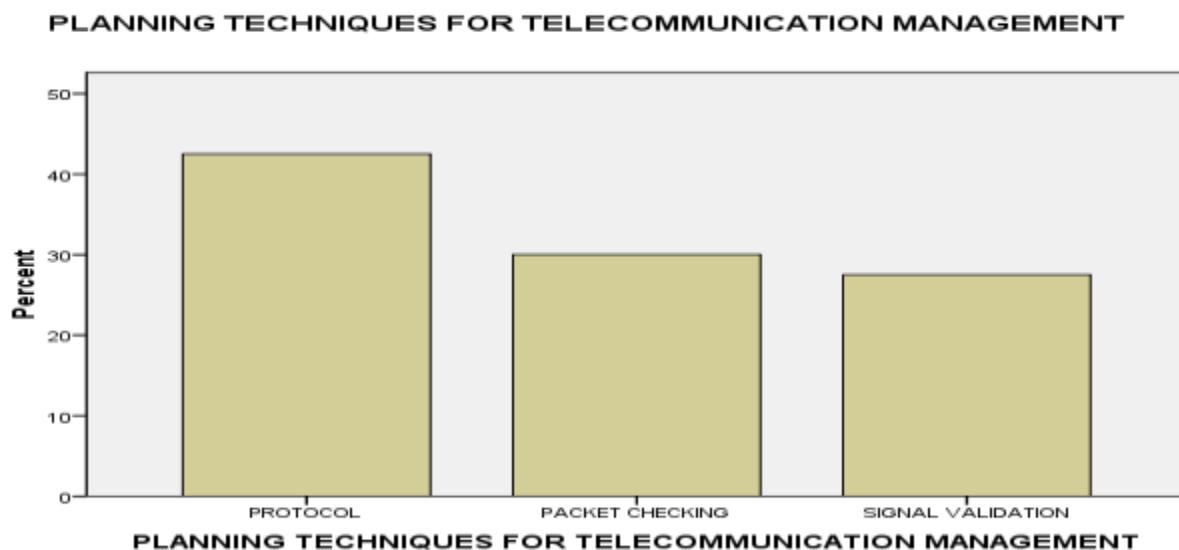
OPINION OF RESPONDENTS ON PLANNING TECHNIQUES FOR TELECOMMUNICATION MANAGEMENT

PARTICULARS	NUMBER OF RESPONDENTS	PERCENTAGE OF RESPONDENTS
Protocol	34	42.5
Packet checking	24	30.0
Signal validation	22	27.5
Total	80	100.0

INTERPRETATION:

The above table shows the opinion of the respondents on planning techniques for telecommunication management. Most of the respondents say protocol designing is the most important planning technique for telecommunication management. 42.5% of the respondents vote for that option. Second option is the packet checking 30% of the respondents opted for the packet checking. 27.5% of the respondents opted for the option signal validation.

OPINION OF RESPONDENTS ON PLANNING TECHNIQUES FOR TELECOMMUNICATION MANAGEMENT



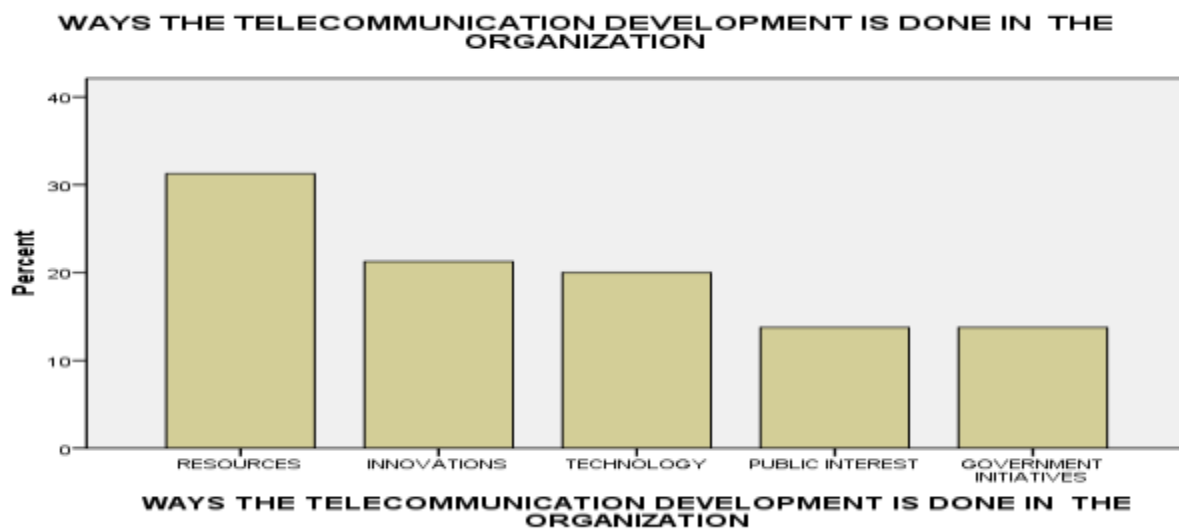
WAYS THE TELECOMMUNICATION DEVELOPMENT IS DONE IN THE ORGANIZATION

PARTICULARS	NUMBER OF RESPONDENTS	PERCENTAGE OF RESPONDENTS
Resources	25	31.2
Innovations	17	21.2
Technology	16	20.0
Public interest	11	13.8
Government initiatives	11	13.8
Total	80	100.0

INTERPRETATION:

The above table shows the ways of telecommunication development is done in the organization. Among 80 respondents 31.2% of them say it is done through resources, 21.2% says innovations, 20% says technology, 13.8% says public interest and 13.8% says government initiatives for same.

WAYS THE TELECOMMUNICATION DEVELOPMENT IS DONE IN THE ORGANIZATION



RESPONDENTS OPINION ABOUT PLANNING THE NETWORK FOR TELECOMMUNICATION MANAGEMENT

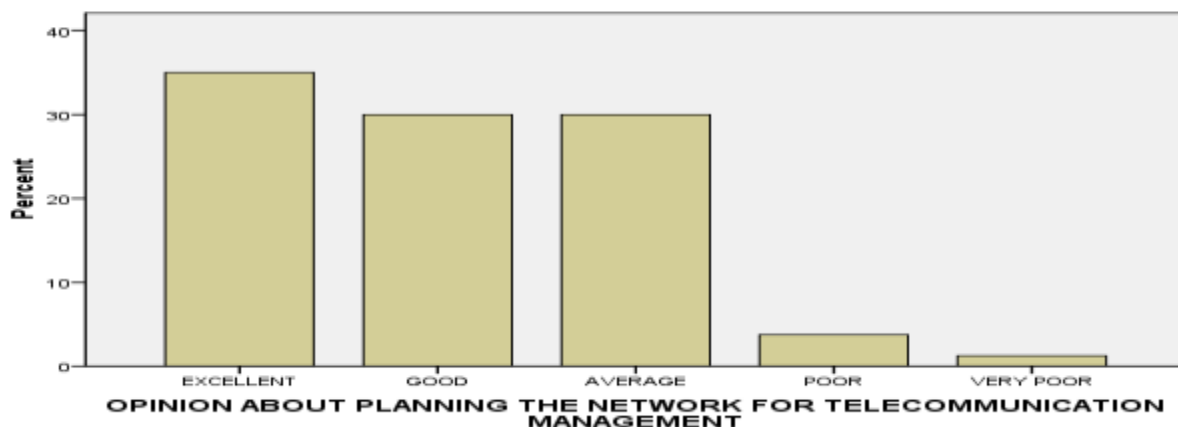
PARTICULARS	NUMBER OF RESPONDENTS	PERCENTAGE OF RESPONDENTS
Excellent	28	35.0
Good	24	30.0
Average	24	30.0
Poor	3	3.8
Very poor	1	1.2
Total	80	100.0

INTERPRETATION:

The above table shows the respondents opinion on quality of planning the network for the telecommunication management. 35% and 30% of the respondents said excellent and good quality on planning the network. Another 30% of the respondents say average on the quality of planning. Only 1.2% of the respondents say quality of planning is very poor.

RESPONDENTS OPINION ABOUT PLANNING THE NETWORK FOR TELECOMMUNICATION MANAGEMENT

OPINION ABOUT PLANNING THE NETWORK FOR TELECOMMUNICATION MANAGEMENT



CHI SQUARE TEST**RELATIONSHIP BETWEEN AGE AND PLANNING TECHNIQUES FOR TELE COMMUNICATION MANAGEMENT**

Ho: There is no significant relationship between demographic profile and planning techniques for telecommunication management

H1: There is significant relationship between demographic profile and planning techniques for telecommunication management

AGE OF THE RESPONDENTS * PLANNING TECHNIQUES FOR TELECOMMUNICATION MANAGEMENT					
Count					
		PLANNING TECHNIQUES FOR TELECOMMUNICATION MANAGEMENT			Total
		PROTOCOL	PACKET CHECKING	SIGNAL VALIDATION	
AGE OF THE RESPONDENTS	25-35 YEARS	12	13	5	30
	35-45 YEARS	11	7	10	28
	45-55 YEARS	7	4	4	15
	55-60 YEARS	4	0	3	7
Total		34	24	22	80

From the above table, there is no significant relationship between demographic profile and planning techniques for telecommunication management.

FINDINGS

- 37.5% of the respondents belong to age group of 25-35 years and that is the maximum number of percentage, 35% of the respondents belong to the age group of 35-45 years and only 8.8% of the respondents are senior executives with the age of 55 and above
- Most of the respondents nearly 42.5% say protocol designing is the most important planning technique for telecommunication management. 30% of the respondents opted packet checking. 27.5% say signal validation.

SUGGESTIONS:

- Most of the respondents recommend M.3000ITU for effective performance, very least respondents recommends M.3010ITU and others recommend M.3013ITU. Most of the respondents suggest the previous version of the module. So that is to be considered at most.
- The satisfaction level on the recommendations applied. 40% says highly satisfied, 38.8% of them satisfied, 15% of them neutral, 5% of them dissatisfied and 1.2% of them highly dissatisfied

CONCLUSION:

I conclude the project by stating the telecom management network is the tedious and high technical concept, those concepts are highly complicated to understand and judge the understanding of the respondents on this topic. This system is the key to the organization; every organization should maintain the TMN as accurate as possible. Here the company should activate the TMN on the respondents suggestions and the satisfaction.

REFERENCES

- ☐ ITU-T Recommendation M.3010: "Principles for a Telecommunications management network"
- ☐ "Telecommunications and Internet converged Services and Protocols for Advanced Networks (TISPAN); Network Management; NGN Management standards; Overview and gap analysis"

QUESTIONNAIRE

- 1) Age
 a) 25-35 years ☐ b) 35-45 years ☐ c) 45-55 years ☐ d) 55-60 years ☐
- 2) What is your opinion on planning techniques for telecommunication management?
 a) protocol ☐ b) packet checking ☐ c) signal validation ☐
- 3) What is your opinion on when does planning of telecommunication management is done?
 a) disaster period ☐ b) emergency period ☐ c) casual period ☐

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