Chapter Three: Research Methodology
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3.1 Introduction

The earlier chapter dealt with the survey of literature in which the researcher analyzed the available literature, which also included the studies related to Telecom Services. In this chapter, researcher discusses the statement of problem, research objectives, the methodological considerations and hypotheses related to this study. It further describes survey method, instrument used to collect the primary data, universe, sampling technique and sample size. Finally, at the end scope and limitations of the study, are spelt out.

3.2 Statement of the Problem

In the light of the above it was interesting for the researcher to understand the needs of Enterprise Network Security. After getting the insights in to the High Category, Medium & Low, the based on Category of company as 1Customer Relationship- Bank, Travel Agencies, Education, Newspapers & Media, Shopping Mall, Insurance, IT Company, Motor Vehicles, the researcher has formulated following statement which best describes the statement of problem of the present study, “Enterprise Network Security Architecture Strategy Evaluation”.

3.3 Objectives of the Study

Researcher was completely aware that for any study to be effective, it must have well defined objectives framed else it would be like a football field without goalposts. Based on the insights the researcher got about importance of security in the organizations. Based on problems related to security in worldwide industries and IT Company, researcher formulated following objectives for the study.

- To see whether the Network Security is required in the various companies.
- To compare the level of security required in the various types of companies.
- To check whether the existing security system fulfills the existing needs of the companies.
- To investigate the tools used for maintaining the security.
- To see that whether the investment made towards the security system is significant.
3.4 Research Hypotheses

The researcher formulated following hypotheses related to study:

- The Enterprise Network Security is required in the various companies.
- There are various levels of Network Security required in the various types of companies.
- The existing Network Security system fulfills the needs of the companies.
- The investment made towards the Network Security system is significant.

3.5 Methodology

- Research methodology defines the systematic and scientific procedures used to arrive at the results and findings for a study; Saunders, 2008[1]. The purpose of research is a statement of what is to be accomplished by conducting research and how the results of the research can be used.

- According to the purpose, researches can be categorized into different types, where the nature of the problem, affects whether the research is exploratory, descriptive or explanatory, Yin, 1994[2]. With this background, it was evident in order to arrive at concrete findings with respect to this study; the next step was to adopt appropriate research designs, which are discussed in next section.

3.5.1 Research Design

The purpose of this study is to find out what were the various needs Enterprise Network Security with respect to Strategy Evaluation in continuously and fast changing technology. Whether the level of the security fulfills the demand of the enterprises.

In order to arrive at concrete findings for the objectives stated above, research design which would be appropriate for the given type of the study was of “Descriptive research design”, as the variables (Enterprise Network Security) for this study were well defined and it was possible to measure with the help of suitable scale. Further these would be used to find out the differences in the Strategy Evaluation expected by the provide 100% security to Enterprise.
3.5.2 Method used for Data collection: Survey Method

Survey method is the most popular method of gathering data from target participants in Enterprise Network Security Architecture Strategy Evaluation research. In present study the researcher was interested in finding exact Enterprise Network Security needs, expectations. Researchers choose method ‘Survey Method’, as the population of the study was large and the data for the study could not be easily observed.

- The common data collection methods include surveys, interviews, and observations. The methods of collecting data for descriptive research can be employed singly or in various combinations depending on the research questions. There are many different ways to conduct a survey.

- Each method can be effective if administered in the right situation. It is proved by various researchers in their research that, when population is large and the data for the study cannot be easily observed when data pertains to; opinions, attitudes, beliefs and feelings of the respondents, ‘survey coupled with questionnaire’ is the most appropriate method to collect the data.

- Survey method is the most popular method of gathering data from target participants in marketing research. In present study the researcher was interested in finding customer needs, their wants, and expectations which are intangible and could not be observed as they resided in the minds of the respondents. Researcher chooses ‘Survey method’ along with questionnaire, as the population of the study was large and the data for the study could not be easily observed. The study demanded gathering of opinions, attitudes, beliefs and feeling of the respondent.

A. Pilot survey:-

The objectives of the researcher in conducting pilot survey was to test whether the questionnaire ‘Draft-1’, designed was able to capture the required information as expected by the researcher to meet the objectives and hypothesis Exiting system based on Category of Company. Pilot survey was conducted mainly to find out whether the Exiting system was understandable as well as whether there were any vague and confusing based upon “Top Ten challenges to enterprise network security”, in the pilot questionnaire ‘Draft-1’.
The ‘Draft-1’ was pre tested by carrying out survey in the field with responses from Movies and Entertainment, Bank, Motor Vehicles, IT Company, Travel Agencies, Insurance- (A-Agricultural insurance, B- Health insurance, C-Life insurance, D-Vehicle insurance), Pharmaceutical or Medical, Newspapers Media, Shopping Mall, Government, Education, Communications or ISP. For pilot survey, total ‘36’ Exiting System, were completed in all exiting system for data analysis.

The pilot study assisted researcher in:

- Valuable suggestions from Enterprise Network Security using “Top Ten challenges to enterprise network security”.
- To design the final Strategy Evaluation with the help of Category of Company (High, Medium & Low).

Based on the results of data analysis of pilot survey, Questionnaire ‘Draft-1’ was revised by understanding the appropriateness of questions where ever necessary with consultation with the Guide to arrive at “Top Ten challenges”.

3.5.3 Tool Used for Data Collection: Questionnaire

According to Malhotra & Birks (2007), “Primary data is a data originated by the researcher for the specific purpose of addressing the research problem and collects it from the sample or target population and secondary data are data collected for some purpose other than the problem at hand”. In this study researcher used primary as well secondary data. Primary data collected from the existing Systems in the form of the existing Systems by Quota and strata method whereas the secondary data collected from the past literature and from published online articles in refereed journals with respect to the study.

- Questionnaire prepared in standardized form with appropriate options, which helped in data compilation and data analysis and also will support researcher in minimizing expenses and efforts required for this study.

- The questionnaire was designed in such a way that it was not too long or complex, because respondents don’t have much time to spare for it and if forced, may give vague
and related responses which will not serve the purpose of the study and well focused on the objectives and the hypothesis formulated for this study.

- The researcher had taken help of the literature available to design the questionnaire, so that to focus on the present problem of the study. The past literature, their respective findings, limitations helped researcher to arrive very close to the objectives and hypotheses formulated for this study.

A. Primary data:-

Regardless of any difficulty in collecting the primary data, it is the most authentic, reliable data source. Primary data collection requires the development and execution of the research plan. Accordingly the execution plan for this study was prepared, and decided to collect the primary data within time span of six months. In this study for primary data structured exiting system collecting Data was used to elicit responses from the Respective Departments Head/IT Manager about their CEO preferences and expectations with regard to various aspects of various companies. Finally as per the plan, data collected from ‘36’ Company within the targeted period of ‘24’ months, during the month of July 2009 to February 2011. Out of the total ‘36’ Company, researcher was able to collect only ‘36’ Category of Company duly completed in all aspects which amount to 85% of response rate. There were high chances that the feedback given may be incorrect or may be biased or just given for the sake of it. But researcher has taken care while distribution of the existing system with compare “Top Ten challenges to enterprise network security”, & the Enterprise Network Security were selected after confirmation few of company they do not required more Security. Hence correct, unbiased and actual exiting system is expected from the respondents for this study.

The accessible Type of Research from all regions of in metropolitans city as a Pune, Mumbai, Hyderabad, Bangalore & Delhi were requested to complete the Category of Company and collected the 1) Service Provider:- Customer Relationship- Bank, Travel Agencies, Education, Newspapers & Media, Shopping Mall, Insurance, IT Company, Motor Vehicles. 2) Other:- Pharmaceutical or Medical, Government, Movies & Entertainment, and recorded for further final data analysis and findings related to the study.
B. The secondary data:

The researcher has gone through pool of secondary data available and reviewed number of thesis, journals & reports published at international and national level till date which is

- The purpose of using secondary data sources is that it exists already; therefore, the time spent on the study is considerably reduced. In this research researcher also saved too much time and taken help of available reference books, past literature from thesis, journals and reports, and also taken help of various internet search engines to collect the reliable and meaningful data required for this study.

- The other sources of the secondary data used by the researcher in this study were: Internet search engines, Newspapers, Magazines, Publications of central /state Government, Technical & trade unions, Manuals, Past records and documents related to topic of the study.

- The researcher had gone through pool of secondary data available and reviewed number of thesis, journals & reports published at international and national level till date which was related to Enterprise Network Security behavior, various level categories of Enterprise Network Security expectations, services and service delivery, customer satisfaction, customer loyalty and customer retention from various service areas. Due care was taken by the researcher that the information used was reliable, authentic and meets the specific needs which were associated with this study. The literature from other sectors of services like Banking, Automobile, Library, Insurance, and health care, Hotel, Telecom, and Mobile to have a greater understanding of intricacies in the study of services marketing.

- Particularly the internet media played very important role where the secondary data was readily and easily available within no time which was taken as a reference for this study, due care taken that the sites referred were trusted and authentic.

  The secondary data supported researcher in this study:

  - Provided literature related to past research carried out, respective findings, limitations supported to create the base to present study.
• It helped researcher to make primary data collection more specific due to availability of the secondary data, it was made possible to know the gaps and deficiencies from past research carried over.

• It provided a basis for comparison of the various level High, Medium & Level categories wise in this study.

• Secondary data provided information about techniques and procedures for conducting marketing research.

• Secondary data helped both in defining the population and in structuring the sample to be taken in this study.

• Also supported to improve the understanding of the present problem and to know that how this problem is different than other problems.

3.5.4 Sampling Technique

The common data collection methods include “Non Probability convenience” used. These methods of collecting data for various levels of data. As the data was collected from those organizations which were willing to give the information from the group of industries such as banks. IT & Malls.

3.5.5 Sample Size

• It is not possible to collect data from all customers in any survey where the targeted population is large in number and to include enough number of units in the sample from different classes. A finite subset of a statistical population, chosen in a specific fashion, is called a sample; which describes a portion chosen from the statistical population so as to seek data or information, opinions or facts from the selected units.

• Researcher selected broadband users those who were willing to give the responses as per their convenience and considered for this study. By selecting some of the broadband
users, we may draw conclusions about the entire population; this was to provide accurate, reliable and appropriate information related to the objectives formulated and to validate the hypotheses.

- “The most important factor in determining the size of a sample needed for estimating a population parameter is the size of the population variance. The greater the dispersion or variance in the population, the larger the sample must be to provide estimate precision”, Krejcie and Morgan, 1970[5].

- Generally the actual sample size of a survey is a compromise between the ‘level of precision to be achieved’, the ‘survey budget’ and other operational constraint such as time and geographical expanse. In this study population includes all individuals from few city who are using broadband services for at least one year from which the samples were drawn, which described as a ‘sample size’.

- To a certain extent, the bigger the population, the bigger the sample needed. But once reached a certain level, an increase in population no longer affects the sample size. The table below shows the size of the sample required against the population universe.

Total banks, it companies, malls, in India, statistics

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Total Number in India</th>
<th>In metro cities</th>
<th>Considered for this study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
<td>110</td>
<td>30</td>
<td>03</td>
</tr>
<tr>
<td>IT companies</td>
<td>13-lakh</td>
<td>10-Lakh</td>
<td>03</td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>26885</td>
<td>20,000</td>
<td>03</td>
</tr>
<tr>
<td>Malls</td>
<td>570</td>
<td>400</td>
<td>04</td>
</tr>
<tr>
<td>Tourism-Agencies</td>
<td>20,000</td>
<td>15,000</td>
<td>03</td>
</tr>
<tr>
<td>Travel Agencies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>65</td>
<td>60</td>
<td>03</td>
</tr>
<tr>
<td>Pharmaceutical or Medical</td>
<td>4655</td>
<td>2000</td>
<td>03</td>
</tr>
<tr>
<td>Communications or ISP</td>
<td>21</td>
<td>20</td>
<td>01</td>
</tr>
<tr>
<td>Newspapers Media</td>
<td>18+18=36</td>
<td>34</td>
<td>03</td>
</tr>
<tr>
<td>Education</td>
<td>71814</td>
<td>5000</td>
<td>04</td>
</tr>
<tr>
<td>Movies and Entertainment</td>
<td>248356</td>
<td>20,000</td>
<td>04</td>
</tr>
<tr>
<td>Government</td>
<td>265</td>
<td>60</td>
<td>02</td>
</tr>
<tr>
<td>Sr.No</td>
<td>Name of the Company</td>
<td>Type of Research</td>
<td>Total Number of Company</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Adlabs Films, Big Cinema, IMAX Entertainment &amp; Reliance Digital</td>
<td>Movies and Entertainment. (*)</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>1) Kotak Mahindra Bank Limited, 2) DB (Dectuch Bank.) 3) ICICI Bank</td>
<td>Bank. (*)</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Volkswagen, Mahindra &amp; Mahindra &amp; CEAT</td>
<td>Motor Vehicles. (*)</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Revmax, Reliance Communication, Reliance Data Center</td>
<td>IT Company.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1) Kuoni Travels India Pvt Ltd. 2) Kingfisher Air Lines 3) Jet Air Lines</td>
<td>Travel Agencies. (*)</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>1) Max Bupa Helath, 2) Bajaj Allianz Life Insurance Co. Ltd, 3) GE Money</td>
<td>Insurance (A-Agricultural insurance, B- Health insurance, C-Life insurance, D-Vehicle insurance ) (*)</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Galderma, Chambal Fertilizer &amp; Bourn Hall International India Private Ltd</td>
<td>Pharmaceutical or Medical. (*)</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>Times Internet, I-Media (DNS Newspaper) &amp; News 18</td>
<td>Newspapers Media. (*)</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>EBSS E Mall, Inorbit Mall, homeshop18.com &amp; D-Mart</td>
<td>Shopping Mall. (*)</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>1) HUDA (Haryana Urban Development Authority), 2) CTD (Commercial Tax Department).</td>
<td>Government. (*)</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Reliance Global communication</td>
<td>Communications or ISP (*)</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Total Number of Company</td>
<td>36</td>
</tr>
</tbody>
</table>
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3.5 Defining Universe

- The target population is the total population from which the required information is to be collected. For this study the target metros city population was defined as individual, who has been using the various a Pune, Mumbai, Hyderabad, Bangalore & Delhi were requested to complete for at least one year, irrespective of age, sex, income and occupation and residing in the metro city corporation limits too. Major Category of Company and collected the 1) Service Provider:- Customer Relationship- Bank, Travel Agencies, Education, Newspapers & Media, Shopping Mall, Insurance, IT Company, Motor Vehicles.2) Other:- Pharmaceutical or Medical, Government, Movies & Entertainment, and recorded for further final data analysis and findings related to the study are in metro city only.
- Since it was not possible to include the entire population in this study, High Category, Medium and Low Category as were large in numbers, hence sampling method was used. Care was taken that the sampling unit as a few companies taking is a part of the sample frame.
- After finalizing the population universe researcher collected the data as per the prefixed sample size from different parts of Pune, Mumbai, Hyderabad, Bangalore & Delhi metro city as the scope of the study was defined.

The Hyderabad city has the highest number of special economic zones among all the cities in the country. As a hub for education and research, this city has about 13 universities and business schools. It is also known for the development of a township with technological infrastructure [7].

3.6 Limitations of the study

There are some of the limitations with respect to this study as mentioned below:
- The scope was limited to the ENSASE, it’s have three Categories as High, Low & Medium Level.
- The scope was not extended to out of India because it’s difficult the data collecting out of India.
• The study included only Bank, Insurance, Government, IT Company & Communications or ISP its High Level Category, Medium Level Category its include that Pharmaceutical or Medical, Newspapers Media, Travel Agencies, Motor Vehicles & Low Level Category Education, Movies and Entertainment, Shopping Mall.

• The geographical scope was limited to the ENSASE from metro cities only note the other cities.

• There were constrains related to target population that every individual from every region could not be included in the survey because some of the military, ordinance factory, air force societies and such areas where the entry was restricted hence excluded.

• The scope was limited to the sampling technique “convenience sampling” only since the data collected from the respondents which were willing to give the feedback and easily accessible.

• Scope was limited to needs, expectations and expectations and in High, Medium & Low Level Category.

3.7 Scope Of The Study

In India total IT Company and Manufacturing Company are in metropolitan’s city based. Like are Mumbai, Pune, Delhi, Hyderabad, and Bangalore & Haryana.

Mumbai Known as the industrial hub of India, the city operates sectors from textiles to petrochemicals and serves as the headquarters for many companies.

Delhi is known for its fastest growing retail industries and the city’s economy consists of integral sectors like construction, power, telecommunications, health and community services and real estate.

Bangalore has many reputed corporate companies like Wipro and Infosys and several public undertakings like Indian Space Research Organization and Hindustan Aeronautics Limited are headquartered in the city. It also considered a hub for the biotechnology sector.
The Hyderabad city has the highest number of special economic zones among all the cities in the country. As a hub for education and research, this city has about 13 universities and business schools. It is also known for the development of a township with technological infrastructure [7].
References


