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A STUDY ON THE DRIVING FACTORS OF CUSTOMER SATISFACTION AMONG THE USERS OF NUMERIC POWER SYSTEMS LIMITED, CHENNAI

A PROJECT REPORT

Submitted by

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In partial fulfillment of the requirements
for the award of the degree

of

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KCT Business School
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This is to certify that ***Ms. Soumya. S****, Roll No* ***07MBA46*** *,a student of KCT Business School, Kumaraguru College of Technology, Coimbatore has successfully completed her project entitled "A Study on the Driving Factors of Customer Satisfaction among the users of UPS of Numeric Power Systems Limited, Chennai " from 18th Jan 2009 to 18th April 2009 in partial fulfilment of the requirement for the award of the MBA.*

During her stay, she was exposed to the various functioning of Marketing Department.

Her character and conduct was found to be good.

We wish her all the best in her future endeavours.

Srineevas Bala

Manager – Marketing

BONAFIDE CERTIFICATE

This is to certify that the project work titled " **A STUDY ON THE DRIVING FACTORS OF CUSTOMER SATISFACTION AMONG THE USERS OF NUMERIC POWER SYSTEMS LIMITED, CHENNAI** ." is the bonafide work of ,**Ms. S.Sowmya, 07602204023** who carried out the same under my supervision .Certified further to the best of my knowledge the work reported here in does not form part of any other Project work or dissertation on the basis of which a degree or award was conferred on an earlier occasion of this or any other candidate. This project work is submitted to Anna University Coimbatore, as partial fulfillment of requirement of the award of the degree of Master Of Business Administration.

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Sowmya

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LIST OF ABBREVIATIONS USED

NPSL - Numeric Power Systems Limited

CAGR – Compound Annual Growth Rate

UPS – Uninterrupted Power Supply

ASSOCHAM – Associated Chambers Of Commerce and Industry of India

NCR – National Capital Region

HSPP – Honda Siel Power Products

Kva – Kilo volt ampere

PC – Personal Computer

SPSS Statistical Package for Social Sciences

LPG – Liquid Petroleum Gas

R & D – Research and Design

CPCB – Central Pollution Control Board

IT – Information Technology

EU – European Union

GDP – Gross Domestic Product

U.S .A – United States Of America

B2B – Business to Business

B2C – Business to Consumer

WOM – Word of Mouth

EMS – Emergency Medical Services

CNC – Computer Numerical Controlled

SLA – Sealed Lead Acid

BSE – Bombay Stock Exchange

NSE – National Stock Exchange

ITES – Information Technology Enables Services

FY – Financial Year

MW – Mega Watts

KWH – Kilo Watt Hour

NEP – National Electricity Policy

ABSTRACT

Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator within business as it is~~, it~~ is quite ambiguous as it varies from person to person. Customer satisfaction attempts to stimulate product interest, repeat purchase behavior, loyalty, spreading through word of mouth, trail or purchase by some new users.

With the mantra of "The ultimate in clean power" NPSL has revolutionized the turf of users of ups in India. NPSL is widely known for its unbelievable pricing and service which is a boost to the users. NPSL is an all new-technology which represents years of advancement, towards the goal of positioning the company as the Market Leader and be the single largest source for a wide range of power solutions.

The objective of this study is to perform a study on the satisfaction of users of ups delivered by NPSL and find out the driving factors that has led the industry to carve a niche in India as well as abroad. This study helps us to find out the users perception of the service by the ups as well as the service personnel's attitude. The study has taken into account four verticals namely IT, Banking, Manufacturing and Service and proceeds with the satisfaction vertical wise. It also checks out if all the verticals receive similar services or are there any deviations. Further the level of dependency of the driving factors is also studied.

This project reports the results of a descriptive as well as an exploratory study in which the drivers of customers satisfaction is been discussed and the level of relationship with the dealer-user is known. Around 100 ups users of NPSL where interviewed and their answers noted down. The study mostly involves the use of primary data from the respondents and secondary data by referring to Ebsco database, journals and magazines relevant to this study. Chi Square, Regression, Factor analysis along with mean and variance are being used in this study for quantitative analysis.

The study concludes saying that the users mostly have used the products of NPSL for more than 5 years and that majority of them are satisfied. The driving factors of customer satisfaction in regard to service are dependable service, easy approachability and employee's attitude. In correspondence to the quality of service the driving factors are amiability to prices, product innovativeness and coping with customers. There is certainly a higher satisfaction in IT and Banking sector than that of Manufacturing and Service industry.

EXECUTIVE SUMMARY

INTRODUCTION

CHAPTER 1
INTRODUCTION TO THE STUDY

With India in the grip of a power crisis, generator and inverter manufacturers are coming into their own. , India's power sector not only suffers from gross inadequacy in captive power generation capacity but also sluggish growth in infrastructure. Exacerbating the problem is the failure of successive governments to envision the future of the power sector. Things are so bad today that power tariffs in India today are amongst the highest in the world for both businesses and households. Ironically, Maharashtra, which is the highest power generator in India, also faces the longest power cuts and load shedding! Though the Indian government has finally woken up and is making big plans to augment power supply, it will definitely be long before the supply meets demand.

Reaping the benefits are the generator and inverter industries. Apart from the power crisis, other contributing factors for the growth in these sectors are robust economic growth, rise in household incomes, and the real-estate boom. Indeed, products like standby power generators, inverters, uninterrupted power supply (UPS) systems and storage batteries are finding an expanding market, especially this summer.

The generator market is inculcating cutting-edge technology and the portable power market is on an upswing, making the market more lucrative and competitive. The market size for generators is expected to grow over Rupees 10 billion this year. Competition is estimated to be higher among the manufacturers of smaller generator sets, which are typically pre-packaged, non-customized, plug-and-play units. This makes them less expensive and, hence, more attractive.

1.1 About the Study:

According to FICCI, AC generators manufactured in India are on a par with international products and consistently deliver high quality power with high performance. Domestic manufacturers are capable of manufacturing AC generators and inverters right from 0.5 - 25,000 kilo volt ampere. For instance, Birla Power Solutions Ltd, formerly Birla Yamaha Ltd, offers a wide range of 'Ecogen' generators and inverters with features like eco-friendly low emission; hi-tech alloyed components facilitating low maintenance; special exhaust protection system; twin fan systems for effective cooling; and powerful technology for quick load responsiveness. Honda Siel Power Products (HSPP), which brought in India's first LPG-based generator, also lays strong emphasis on R&D and in-house technical innovation. The super silent key start generator, LPG generators and other technological innovations are examples of the company's pursuit for technological excellence.

With the focus on environmental and health issues, genset manufacturers are increasingly conforming to the most stringent Phase II Noise & Emission Norms, as laid down by the Central Pollution Control Board. The inverter industry is also witnessing a lot of technological improvements. Pure sine wave inverters have considerable potential in the household sector. Earlier inverters were being used only for specific appliances like PCs but now with the new technology, a 1,000 va inverter can power all household appliances. With microcontroller technology and DSP technology used in fabrication of components, present-day inverters cost less but have higher capacity. Though the potential is immense, a lack of product knowledge among customers does impede the portable power market. Consumers also tend to overlook important technical details such as resistive loads, type of lubrication, and safety features.

This leads not just to people buying the wrong product for their needs, but operation and maintenance issues, leaving consumers dissatisfied and ultimately affecting overall sales. Government norms also affect the market. Suppliers and manufacturers of generator sets and diesel engines have to fulfil certain directives prescribed by the Union Ministry of Environment and Forests with respect to emission of fumes and noise. Imports too are covered by these norms. Adherence to these parameters adds to costs, which are passed on to the customer. Another norm, the CPCB rule intended to cut down noise level to 75 dBA, was introduced this year. According to this, generators must be fitted with soundproof canopies, and the acoustic enclosures should be of the type approved by CPCB. This extra investment will hurt the end user.

Another bugbear is the role of the unorganized sector, which currently rules the market and triggers price wars. Though its products are priced cheaply, they lack efficient after-sales service and product support, thereby leaving customers in lurch. Despite these stumbling blocks, Indian genset manufacturers have been relentless in their efforts to establish and develop market share. Larger companies are now making strategic decisions to enhance capacity, lower costs and connect with the customer. For example, BPSL is setting up a new plant for manufacturing LPG and CNG gensets, inverters, engines and acoustic hoods in Uttaranchal. This will reduce its dependence on traded products and improve margins. Inverter manufacturers are making inroads into semi-urban and rural markets. The future will also see India as a sourcing base for generators and inverters. Honda Siel hopes to increase shipments by another 10,000 units this fiscal. And the company plans to make India the sourcing base for select models for Honda's global genset market - it produces around 5 million portable gensets worldwide.

1.2 About the Industry

The recent spate of power cuts has also augmented sales of generator sets in the agricultural sector. The demand in the rural sector is mostly for smaller and cheap kerosene and diesel gensets, particularly for irrigation, with no particular preference for brands. For instance, in Punjab most farmers opt for generators below 10 kw - permission is needed from the Punjab State Electricity Board for installing sets above this capacity.

Meanwhile, the present size of the inverter market in India is about 1.5 million units a year and growing at a compound annual growth rate (CAGR) of 12 to 14 per cent. According to a report by Associated Chambers of Commerce and Industry of India (ASSOCHAM), the hike in the demand for inverters, their batteries and generators is expected to go up by 20 to 25 % in summer months, particularly in the National Capital Region (NCR). The inverter market alone in the NCR is estimated to be to the tune of Rs 2,500 Crore this summer, with the main demand arising from the residential sector. The demand of dry and eco-friendly batteries has also gone up.

A major share of the inverter market is currently being held by the unorganized sector and smaller local manufacturers offering cheaper products. The entry of cheap Chinese products is further fuelling competition. However, zero-overhead costs and the shaky after-sales service of the unorganized sector has heralded the entry of branded inverters by companies like NPSL(Numeric Power Systems Limited), SAR Silicon (Luminous), Usha Zentra and Microtek. These companies offer better after-sales services and constantly upgrade their products technologically as well. Major players in the portable power market are setting the standards in terms of technology and quality for others to follow.

Research indicates that sales for the world ups market will grow at a compound annual growth rate of 6 percent between 2005 and 2012. This conservative growth is a factor of end-user apathy towards power protection as well as the continuing price competition. Investments in IP telephony deployment, server consolidation, medical diagnostic and imaging equipment, and process automation will be a direct contributor to ups sales. Currently, the market is experiencing a renewal cycle for ups systems following economic slowdown. However, ups system is a fairly mature technology depending on usage pattern a ups system is designed to last as much as 5 to 10 years. In fact, if properly maintained, an ups system can last as much as 20 years. Ups replacements are also delayed by predictive part replacement programs offered by most ups manufacturers. Consequently, low replacement rate of ups systems is likely to following this splurge in sales. However, positive growth will be upheld by network reconfiguration needs, which might promote the need for load change requirements.

The Malaysian UPS market is still in the development phase, displaying untapped potential in certain market segments such as low and medium range kilovolt-ampere (kVA) systems. Key factors expected to drive the market forward include an increasing awareness about the necessity for quality power, the surge in renewal rates for existing UPS systems due to the increasing popularity of modular UPS, and also the impressive growth of the country's telecommunication, semi-conductor, and banking sectors. These apart, the market is likely to benefit immensely from the 9th Malaysian Plan, which looks to further increase the emphasis on developing the country's IT sector.

The western European UPS market is making a strong comeback following the crash of the IT and telecom market in the early part of the decade. As economic confidence returns, especially among continental EU countries, investment in industry, infrastructure and also the IT and telecom sector is rising.

This rise is triggering a positive spillover effect on the UPS market. Frost & Sullivan finds that the Western European UPS Market earned revenues of €958.0 million in 2005 and estimates this revenue will reach €1.5 billion in 2012. The UPS market will also benefit from rising demand in the aftermath of power grid failures, which resulted in blackouts across major European countries including the United Kingdom, Switzerland, Italy and Greece in recent years. At the same time, growing concerns over data storage and security will boost investments in UPS solutions.

India, among the European investors, is believed to be a good investment despite political uncertainty, bureaucratic hassles, shortages of power and infrastructural deficiencies.
India presents a vast potential for overseas investment and is actively encouraging the entrance of foreign players into the market. No company, of any size, aspiring to be a global player can, for long ignores this country which is expected to become one of the top three emerging economies.

Success in India will depend on the correct estimation of the country's potential, underestimation of its complexity or overestimation of its possibilities can lead to failure. While calculating, due consideration should be given to the factor of the inherent difficulties and uncertainties of functioning in the Indian system. Entering India's marketplace requires a well-designed plan backed by serious thought and careful research. For those who take the time and look to India as an opportunity for long-term growth, not short-term profit, the trip will be well worth the effort.

India is the fifth largest economy in the world (ranking above France, Italy, the United Kingdom, and Russia) and has the third largest GDP in the entire continent of Asia. It is also the second largest among emerging nations. (These indicators are based on purchasing power parity.) India is also one of the few markets in the world which offers

high prospects for growth and earning potential in practically all areas of business. Yet, despite the practically unlimited possibilities in India for overseas businesses, the world's most populous democracy has, until fairly recently, failed to get the kind of enthusiastic attention generated by other emerging economies such as China.

1.3 About the Company:

1.3.1 History of the Orgnaisation:

Numeric Power Systems Limited is powered by an all new-technology which represents years of advancement, towards the goal of positioning the company as the market leader and being the single largest source for a wide range of power solutions. NPSL is a mnc in the power management solutions arena with a sales and service network in over 220 locations both in India and overseas. They are in the silver jubilee year in the market for over 20 years in Indian Power Conditioning. Ever since its advent in 1984 Numeric's focus has always been the excellence in quality of products and dedication in service and this has facilitated Numeric to carve a niche for itself in the Indian UPS market and has made the brand a legend in the country.

Numeric has been the "No.1 Online UPS Manufacturer in India" for the sixteen consecutive years. In addition the company's stocks have been listed in the Stock Exchanges - BSE, MSE and NSE. They offer end-to-End Power protection solutions from 500 VA to 4800 kVA. They operate six ISO 9001: 2000 state-of-the-art manufacturing plants to their credit.

After a decade of professional relationship, the world's largest Consumer Electronics Company Panasonic Industrial Asia Pvt Ltd., (a member of Panasonic Japan) has appointed NUMERIC Power Systems Ltd., as the national distributor for their SLA batteries in 2005. This alliance between NUMERIC and

Panasonic will offer the complete range of Panasonic High Performance SLA batteries to the Indian market directly and through their channel partners.
Numeric has two tier distribution models wherein the NUMERIC range of power conditioning products is available through the National Distributors:

1.3.2 Mission:

NUMERIC will continue to excel towards providing high Quality Power Management solutions and be the Industry Leader through

- Latest technology UPS products
- Powerful solutions for all special applications
- A wide spread network to stay close to all customers
- Dedicated and trained team of resources for efficient support
- Higher level of commitment to achieve high performance and maximum uptime
- Power Quality Audits and Energy Management solutions

Numeric takes pride in its expertise to offer world class solutions for all special purpose applications.

1.3.3 Management:

The company is run by the Managing Director Mr.R.Chellappan with who are the powers vested. The Board of Directors has a say in the operations of the company as well. The company is divided into various departments to enable efficient administration and control. Each department has a vice-president under whom is the Area General Manager who reports the daily advancements of the firm.

The management and the members of Numeric manufacturing and service team are fully conversant with the latest developments and trends in power electronics. Two of

the directors are from Sundstrand Aerospace Illinois, USA and two others on the board have over 27 years of profound experience in electrical projects with Federal Government USA. The promoter Directors have over 25 years of experience in India with organizations like Ashok Leyland and Best & Crompton in the manufacture of Power Electronic Products. In the team of 10 Directors, 6 are Electrical & Electronics Engineering Graduates.

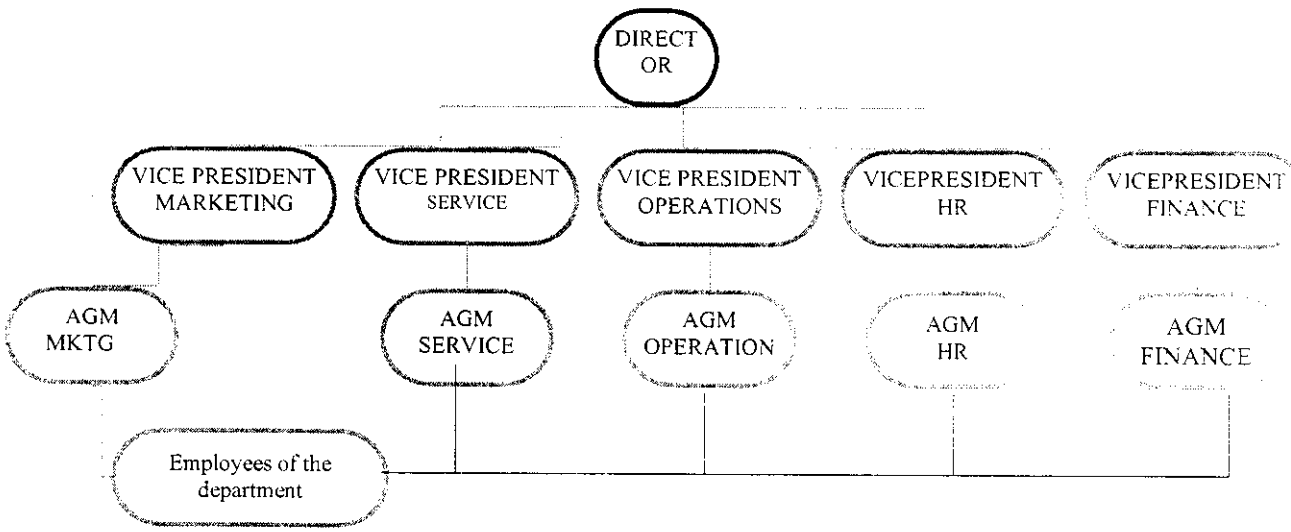
1.3.4 Manufacturing Plant:

To provide qualitative and quantitative excellence, eight world class manufacturing units are located in Chennai, Pondicherry, Parwanoo and Colombo (Sri Lanka).The plant at Pondicherry is a state-of-the-art manufacturing facility for the mass production of UPS. This is the first ISO 9001:2000 accredited UPS manufacturing facility in India. Numeric has a well integrated manufacturing system. These factories are well equipped and are self-sufficient in terms of man power and machinery. The products undergo stringent quality tests at every stage of manufacturing.

Manufacturing Plant at Pondicherry designed for mass production of UPS systems with facilities such as conveyorized assembly, wave soldering, computer aided testing and well stacked inventory of raw materials & finished goods. The CNC Fabrication Plant at Chennai manufactures M.S. enclosures for NUMERIC UPS systems. The CNC Fabrication Plant in Chennai, with MURATEC & AMADA from Japan, Darley - Holland, GEMA VOLSTATIC, Switzerland and Automated power coating facility with CNC Turret Punch Press, CNC Press brake and Powder coating workstations matching international quality and standards. The Transformers and chokes manufactured as fully equipped with Toroidal coil winding machinery and vacuum impregnation plant.

The manufacturing plant in Salem has a fully integrated sheet metal process with in-house magnetic divisions and state-of-art UPS manufacturing facility. The Parwanoo Plant is strategically located to reach our customers in northern, eastern and western part of the country catering to mid range UPS requirements. A modern facility (a BOI company) in Colombo, Sri Lanka, manufactures world class Digital HP Series UPS system for the international market.

1.3.5 Organization Structure:



1.3.6 Products Profile And Marketing Potential:

1. UPS: - Line interactive, double conversion line, High energy products
2. Home Power Products: - Digital HPH Series, Digital HPX sine wave inverters
3 Special power systems:-Volt safe, ISO safe
4 Solar Power solutions

An uninterruptible power supply (UPS), also known as a battery back-up, provides emergency power and, depending on the topology, line regulation as well to connected equipment by supplying power from a separate source when utility power is not available. A UPS, however, can be used to provide uninterrupted power to equipment, typically for 5–15 minutes .An UPS is typically used to protect computers, data centers, telecommunication equipment or other electrical equipment where an unexpected power disruption could cause injuries, fatalities, serious business disruption or data loss. UPS units come in sizes ranging from units which will back up a single computer without monitor (around 200 VA) to units which will power entire data centers or buildings (several megawatts).

The general categories of modern UPS systems are on-line, line-interactive, and standby. An on-line UPS uses a "double conversion" method of accepting alternative current input, rectifying to direct current for passing through the battery, then inverting back to alternative current for powering the protected equipment. A line-interactive UPS maintains the inverter in line and redirects the battery's direct current path from the normal charging mode to supplying current when power is lost.

1.3.7 Line Interactive:

The Line-Interactive UPS is similar in operation to a Standby UPS, but with the addition of a multi-tap variable-voltage autotransformer. This is a special type of electrical transformer that can add or subtract powered coils of wire, thereby increasing or decreasing the magnetic field and the output voltage of the transformer.

This type of UPS is able to tolerate continuous under voltage brownouts and over voltage surges without consuming the limited reserve battery power. It instead compensates by auto-selecting different power taps on the autotransformer.

Changing the autotransformer tap can cause a very brief output power disruption, so the UPS may chirp for a moment, as it briefly switches to battery before changing the selected power tap.

1.3.8 Double Conversion / Online:

The Online UPS is ideal for environments where electrical isolation is necessary or for equipment that is very sensitive to power fluctuations. Although once previously reserved for very large installations of 10kW or more, advances in technology have permitted it to now be available as a common consumer device, supplying 500 watts or less. The Online UPS is generally more expensive but may be necessary when the power environment is "noisy" such as in industrial settings, for larger equipment loads like data centers, or when operation from an extended-run backup generator is necessary.

The basic technology of the online UPS is the same as in a Standby or Line-Interactive UPS. However it typically costs much more, due to it having a much greater current AC-to-DC battery-charger/rectifier, and with the rectifier and inverter designed to run continuously with improved cooling systems. It is called a Double-Conversion UPS due to the rectifier directly driving the inverter, even when powered from normal AC current.

In an Online UPS, the batteries are always connected to the inverter, so that no power transfer switches are necessary. When power loss occurs, the rectifier simply drops out of the circuit and the batteries keep the power steady and unchanged. When power is restored, the rectifier resumes carrying most of the load and begins charging the batteries, though the charging current may be limited to prevent the high-power rectifier from overheating the batteries and boiling off the electrolyte.

The main advantage to the on-line UPS is its ability to provide an electrical firewall between the incoming utility power and sensitive electronic equipment. While the Standby and Line-Interactive UPS merely filters the input utility power, the Double-Conversion UPS provides a layer of insulation from power quality problems. It allows control of output voltage and frequency regardless of input voltage and frequency.

1.3.9 Market Potential:

Numeric Power Systems (NPS) holds the lion's share of the Indian UPS equipment market. NPS is a play on India's leadership status in the information technology (IT) space and the rising trend of automation and computerization in the country. The widening demand-supply gap in the power sector and the consequent frequent power cuts in the country augur well for the UPS industry. NPS holds the numero uno position in the Indian uninterrupted power supply (UPS) equipment industry with the widest range of products. As part of its strategy to offer a wider range of solutions to its customers NPSL has tied up with Merlin Gerin UPS Systems of France; the tie-up has given it access to a product range at the higher end, i.e. UPS devices with the installed capacity extending to 4,800kVA. Merlin Gerin of France is amongst the largest UPS solution provider in the world for up to 4800 KVA systems. Merlin Gerin might pick up equity stake in NPS in the near future. NPS has six production facilities in India and another one in Sri Lanka (a 100% subsidiary). It also has a marketing subsidiary in Singapore. NPS has been ranked as No.1 UPS Manufacturer in India and has won the Frost & Sullivan awards for 2004 and 2005 and won the Softdisk awards for the last 11 years all in row.

NPS caters to various segments including, information technology, software, high-end telecommunication and healthcare industry, banks and financial institutions, Government projects and small- office-home-office and small-scale industry. The company has marquee list of clients in India.

The list of clients includes, virtually who's who in Indian business. The complete Citibank installations of Head office and its ATMs have the UPS from Numeric. ICICI bank, HDFC Bank, Canara Bank, ABN Amro, ING Vysya Bank, Corporation Bank, Infosys, Wipro, IBM, Microsoft, DELL, Lucent, Oracle, Mphasis BFL, HCL T, Reliance Knowledge city, Reliance Jamnagar, Visualsoft, Crompton, ACC, India Cement, Hewlett Packard, Colgate Palmolive, BEL, BHEL, ONGC, Railways. NPS is a play on India's leadership status in the information technology (IT) space and the rising trend of automation and computerization in the country. With the domestic IT-enabled service (ITES) industry growing at +40% and the number of IT-enabled services going real-time getting bigger, an uninterrupted supply of power is critical.

The widening demand-supply gap in the power sector and the consequent frequent power cuts in the country augur well for the UPS industry. At the current market price of Rs 315 the Numeric Power Systems stock quotes at 9.1 times expected FY06 earnings and at 7.2 times expected FY09 earnings (Rs 45) and holds good potential for appreciation in the medium-long term. The valuations are attractive considering that the company's earnings are expected to grow at a CAGR of 33% in the next two years. The Market is looking for good ideas and NPS stands out well and looks due for a re rating.

1.3.10 Competitive Strength of the Company:

Some of the aspects which make Numeric Power Systems Limited, Chennai are as follows :

a) single largest source for a wide range of power solutions

b) acclaimed as the "No.1 UPS Manufacturer in India" for the 16^{th} consecutive year (Soft Disk Award 2008).

c) NUMERIC's stocks have been listed in the Stock Exchanges - BSE, MSE and NSE.

d) Continuous technological innovations and proximity to the customer

e) ISO 9000:2000 certified institution

MAIN THEME OF THE PROJECT

CHAPTER 2

MAIN THEME OF THE PROJECT

2.1 Objectives of the Study

The objectives of the study are

a. To find out the drivers of customer satisfaction, with respect to service quality and service features.

b. To explore the extent to which the key drivers of customer satisfaction affect the service.

c. To find out if there is any difference in the satisfaction of users with respect to the industry they are being associated with.

d. If there is found to be a difference in the satisfaction among users to the different industries then find out the extent of dependency.

e. To offer suggestions and recommendations to the study from the analysis and observations made in through the course of the project.

2.2.1 Scope of the Study:

The study will contribute to the managerial decisions to be made by the ups companies of India, when they have to decide on the factors that actually affect the satisfaction of customers and on the major areas they have to focus on to get more number of

satisfied customers. This becomes important in the Indian scenario, as the churn of ups users in India is 33%, which is one of the highest in the world as well as showing a great chance of improvement in the years to come with the shortage of power that India is facing now.

2.2.2 Limitations Of The Study:

The study should be given direction for future research and generalization from this should be done with some adaptation from the functioning of the company with its policies as well. In order to measure customer satisfaction, overall satisfaction and behavioral intentions have been considered. Service loyalty as an after effect of satisfaction could be added as an additional variable for further research.

Another direction provided by the research is related to the gap between customer perception and expectation as a driver of customer satisfaction. Also, the viewpoints of the ups companies can be explored. There are other factors influencing customer satisfaction apart from factors suggested in this study, such as demographic characteristics of customers and the usage pattern of the ups services.

2.3 Methodology:

2.3.1 Locality:

The study was conducted for Numeric Power Systems Limited, Chennai.

2.3.2 Population:

The total population of a study is the misting of all the elements in the population from which the sample is drawn. For this study the total number of corporate users of ups in Chennai forms the populations whose information is vague.

2.3.3 Target Population:

Target population is that population which satisfies certain criteria that has been framed for the study. Here the target population is the number of users of UPS of NPSL, Chennai and belonging to the industries of IT, Banking, Manufacturing and Service which is around 220.

2.3.4 Sample Population:

Sample population is the population that has been taken by the researcher for the data analysis. A total of 100 respondents were taken from the corporate users belonging to the defined category of industry.

2.3.5 Research Design:

A combination of exploratory and descriptive study is conducted in order to ascertain and be able to describe the characteristics of the service attributes of interest in this situation.

2.3.6 Sampling Framework:

Nature of Sample:

The sample for this study is corporate users of industries which are IT, Banking, Manufacturing and Service.

2.3.7 Quantifying the Sample:

A total of 220 samples were available from company source data ,out of which every second sample was taken based on the industry type wherein equal representation of 25 .

2.3.8 Number of Sample:

A total of 100 samples were taken for data collection and also for analysis.

2.3.9 Sampling Design:

The study uses multistage stratified random sampling.

2.3.10 Sources Of Data Collection:

Questionnaires were administered and an interview session was fixed wherein the users made clear their choices by ticking in them.

Ebsco database, wileyinterscience databases were searched for articles relevant to the study. Apart from this journals like ICFAI journals of marketing were browsed through.

2.3.11 Tools Of Data Collection:

A structured interview was arranged where the respondents filled in the questionnaire.

2.3.12 Statistical Tools:

Percentage analysis and pie charts have been used for data analysis.

2.3.13 Statistical Tests:

Chi Square, Factor analysis, Regression Analysis along with mean and coefficient of variance have been used.

2.3.14 Period of Study:

The study was conducted from January 19th 2009 to April 10th 2009 with subsequent fixing of appointment and data collection.

2.3.15 Processing Of Data:

The data was fed in SPSS 16.0 and statistical tools and tests were performed. Data was entered in a likerts scale with 1 as "Strongly agree" and 5 as "Strongly disagree"

2.4 Review of Literature:

Research in consumer psychology shows that customers seek reasons for service failures and that attributions of blame moderate the effects of failure on the *level* of customer satisfaction. The author[1] (Jesse H. Jones,2009) extends research on service operations failures by hypothesizing that attributions of blame also affect *what matters* to the customer during service failures. Specifically, it hypothesize that the relative weights that customers assign to key service elements in reaching an overall assessment of customer satisfaction are affected by customer attributions of blame for service failures.

The author has conducted the study in U.S. airline industry as a quasi-experimental research setting to investigate the components of customer satisfaction for three samples of customers who experience routine service, flight delays of external and internal. Although the level of customer satisfaction is lower for all service failures, it is found that the key components of satisfaction differ between delayed and routine flights only when customers blame the service provider for the failure. Specifically, when delays are of external origin satisfaction is lower than for routine flights, but there is virtually no difference in the weight that customers assign to the components of customer satisfaction. In contrast, when delays are of internal origin, satisfaction is lower than for either routine flights or flights delayed by external factors, and employee interactions have a significantly diminished role in customer satisfaction evaluations.

1.Jesse H. Jones, encountering Service Failure by Customers Effect on Customer Satisfaction, Manufacturing & Service Operations Management, Vol. 11, No. 1, 2009, pp. 52-69.

The relationship between customer loyalty and the order procurement and order fulfillment processes of electronic retailers is empirically examined by the author[2] (Gregory R. Heim, Kingshuk K. Sinha, 2001). The study sample contains data from 52 electronic food retailers. After controlling for the retailers' product categories based on design flexibility, regression analysis results indicate that three order procurement variables—website navigation, product information, and price; and three order fulfillment variables—product availability, timeliness of delivery, and ease of return have significant association with customer loyalty. In terms of their relative contributions toward improving customer loyalty, these variables can be ordered in a descending order as follows: ease of return, timeliness of delivery, website navigation, product availability, price, and product information.

This paper[3] (Andy A. Tsay, Narendra Agrawal ,2000) studies a distribution system in which a manufacturer supplies a common product to two independent retailers, who in turn use service as well as retail price to directly compete for end customers. The author examines the drivers of each firm's strategy, and the consequences for total sales, market share, and profitability. It discovers a number of insights concerning the preferences of each party regarding competition. Finally, author characterizes the structure of wholesale pricing mechanisms that can coordinate the system, and show that the most commonly used formats (those that are linear in the order quantity) can achieve coordination only under very limiting conditions.

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2. Gregory R. Heim, Kingshuk K. Sinha, Operational Drivers of Customer Loyalty in Electronic Retailing:An Empirical Analysis of Electronic Food Retailers , Manufacturing& Service Operations Management Vol.3, No. 3, 2001, pp. 264-271

3. Andy A. Tsay, Narendra Agrawal, Channel Dynamics under Price and Service Competition, Manufacturing& Service Operations Management, Vol.2, No. 4, 2000, pp. 372-391

The author[4] (Rhian silvestro, 2001) explores the relationship between customer satisfaction, loyalty and financial performance in the context of the telecommunications industry. A large European telecom company is studied, comprising four different businesses, one of which serves consumers, the other three being business to business companies; and a longitudinal analysis was conducted of correlations between financial performance and customer satisfaction, customer dissatisfaction, customers' stated intention to repurchase, and their stated willingness to recommend the service.

The results indicated, in line with the literature, that dissatisfaction was negatively correlated with revenue in all four businesses; whilst customer satisfaction was strongly correlated with revenue in only one of the companies, a B2B service. The relationship between financial performance and loyalty was less conclusive. However, there was little evidence of a significant relationship between customer retention and revenue, indeed counter-intuitively; the B2C Company demonstrated a negative correlation between customer retention and revenue. This study indicates that in contexts where customer satisfaction does not drive revenues, there may nevertheless be a link between customer dissatisfaction and financial performance; and highlights the efficacy of measuring dissatisfaction as well as mean satisfaction levels. The results also endorse the growing academic interest in non-linear and asymmetric performance relationships and point to the fact that dissatisfaction may be more closely related to financial performance than satisfaction, particularly when 'maintenance' rather than 'enhancing' attributes are most valued by the customer. The relationship between customer loyalty and revenues was less conclusive, but the explanation for this appeared to lie in the nature of the competitive arena rather than in differences based on the B2C and B2B typology.

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4. Rhian silvestro, The Assymmetric Relationship between Customer Satisfaction, dissatisfaction, Loyalty and Financial performance in b2b companies, International Journal of Services and Standards, 2001, Vol 3, pp 49-53

This sauthor[5] (Devon S. Johnson' 2002) examines the role of consumer technology paradoxes within the context of self-service technology and the routes by which these paradoxes influence customer satisfaction evaluation. Analysis of survey data from online banking customers indicates that three paradoxes operate in this context: control/chaos, fulfill needs/create needs, and freedom/enslavement. The study reveals further that the effects of these paradoxes on customer satisfaction are mediated by consumer performance ambiguity and consumer trust in technology.

The availability, responsiveness, reliability, completeness, and professionalism of service were identified from a literature review, as the five critical factors affecting customer satisfaction in parcel delivery industry. A model of customer satisfaction in parcel delivery service was developed. Academic departments from selected universities across the US responded to written questionnaires and these data were used for the study[6]. The data included information on the characteristics of each above-mentioned factor and ranking of importance of the factors was determined. The researcher (Bingguang Li, 2004) tested the hypotheses to determine the correlation coefficients between the five factors and overall customer satisfaction with respect to all customers for both outgoing and incoming parcel delivery services.

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5. Devon S. Johnson Understanding how technology paradoxes affect customer satisfaction with self-service technology: The role of performance ambiguity and trust in technology, Psychology and Marketing,2002, Volume 25 Issue 5, Pages 416 - 443

6. Bingguang Li, Michael W. Riley, Chang-Tseh Hsieh , Assessing customer satisfaction in parcel delivery industry: an empirical study among university customers, International Journal of Services and Standards 2004 - Vol. 1, No.2 pp. 172 - 192.

The authorr[7] (Riadh Ladhari, 2000) examines the impact of consumption emotions on consumers' satisfaction and how it affects what they tell other consumers. The conceptual model is based on the premise that pleasure and arousal influence satisfaction, word-of-mouth (WOM) communications, and the likelihood of generating WOM. A study of 470 moviegoers in a French Canadian city supports most of these relationships. The results indicate that even when the effects of satisfaction are accounted for, pleasure and arousal have significant effects on WOM.

The researcher[8] (Isabella Soscia, 2002) investigates the relationships among appraisals (goal congruence/incongruence and agency), consumption emotions (gratitude, happiness, guilt, anger, pride, and sadness), and post-consumption behaviors (positive and negative word of mouth, repurchase intention, and complaint behavior). The findings demonstrate that these emotions predict different specific types of post-consumption behaviors and those they are elicited by appraisals specified in the psychology literature. In particular, gratitude but not happiness, predicts repurchase intention and positive word of mouth. By contrast, guilt inhibits complaint behaviors and negative word of mouth. The implications of these findings for marketing practice are discussed.

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7. Riadh Ladhari, The effect of consumption emotions on satisfaction and word-of-mouth communications, Psychology and Marketing,2000, Volume 24 Issue 12, Pages 1085- 1108

8. Isabella Soscia, Gratitude, delight, or guilt: The role of consumers' emotions in predicting post consumption behaviors, Psychology and Marketing , 2002
Volume 24 Issue 10, Pages 871 - 894

This author[9] (Allen Klose , Todd Finkle , 2003) develops a model that looks at the relationship between a series of two important customer service gaps. The first series of gaps (service provider gaps) is a result of the difference between consumers' and employees' expectations based on various dimensions of the customer service encounter. The second series of gaps (service quality gaps) occur when a difference exists between consumer expectations and the service they actually receive based on specific aspects of the customer service encounter. This study found a positive significant relationship between these two series of gaps. This significant relationship provides empirical evidence as to the importance of keeping employees informed about the expectations of consumers.

Customer satisfaction is a central issue for organizations wishing to create a sustainable competitive advantage in the 1990s. Empirical work to date, concentrating on low-involvement, nondurable products, has concluded that both prior expectations and post purchase experience interact to influence the level of customer satisfaction. Only a few studies have examined the purchase of high-involvement, nondurable products. The author[10] (Paul G. Patterson ,2003) employs a multi attribute approach using pre- and post purchase questionnaires to assess determinants of customer satisfaction for a high-involvement product. Causal path analysis shows perceived product performance to be the most powerful determinant. Prior expectations did interact with performance to affect disconfirmation, which translated into only a minor impact on satisfaction

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9. Allen Klose , Todd Finkle, Service quality and the congruency of employee perceptions and customer expectations: The case of an electric utility, Psychology and Marketing,2003, Volume 12 Issue 7, Pages 637 – 646

10. Paul G. Patterson, Expectations and product performance as determinants of satisfaction for a high-involvement purchase, Psychology and Marketing Vol-10 Issue 5, Pages 449 - 465

The author[11] (Vicente Martínez-Tur, 1999) aims to test the links of social and technical situational constraints to customer satisfaction with services. To this end, a field survey study was conducted using a sample of 57 managers and 835 customers of service organizations. We studied social and technical constraints perceived by managers. Customer satisfaction with several service attributes was also measured. In general, a lack of situational constraints in service organizations was positively associated with customer satisfaction. The results also showed that the unique contribution of technical constraints to customer satisfaction was greater than that of social constraints. We point out managerial implications and future directions for research on constraints–customer satisfaction relationships.

In this paper, a method for the analysis of a categorical and incomplete data matrix is proposed. The methodology is applied to data collected by a market survey of Fiat Auto in order to show the latent dimensions underlying the customer satisfaction with car dealers. After multiple imputation of missing values the researcher[12] (Annarita Roscino, 2000) polychoric correlation matrix, measuring the manifest variables correlations, is computed and used as a proper input to factor analysis. Two factors underlying the several judgment items are thus obtained and their weights on the global judgment ordinal variable are then estimated by ordered probit regression.

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11. Vicente Martinez-Tur, Jose M. Peiro, Jose Ramos · Linking Situational Constraints to Customer Satisfaction in a Service Environment, Applied Psychology ,1999,Volume 54 Issue 1, Pages 25 – 36

12. Annarita Roscino, A statistical analysis of the customer satisfaction with car dealers, Applied Stochastic Models in Business and Industry, 2000,Volume 20 Issue 3, Pages 281 - 289

The researchers[13] (David E. Persse, 2000) aim of the study is to determine if emergency medical services (EMS) customer satisfaction could be assessed using telephone-survey methods. The process by which customer satisfaction with the EMS service in a large, fire department–based EMS system is reported, and five month results are presented. In addition, during the same period, all EMS incidents in which a patient was not transported were identified for contact. Customer-service representatives contacted patients via telephone and surveyed them from prepared scripts.

A total of 88,528 EMS incidents occurred during the study period. Of these, 53,649 resulted in patient transports and 34,879 did not. Ten percent of patients transported (5,098) were selected for study participation, of which 2,498 were successfully contacted; of these, 2,368 (94.8%) reported overall satisfaction with the service provided. Of the 34,879 incidents without transport, only 5,859 involved patients who were seen but not transported. All of these patients were selected for study. Of these, 2,975 were successfully contacted, with 2,865 (96.3%) reporting overall satisfaction. The most common reason given for non satisfaction in both groups was the perception of a long response time. It was concluded that it was possible to conduct a survey of EMS customer satisfaction using telephone-survey methods. Although difficulties exist in contacting patients, useful information is made available with this method. In this survey, the overwhelming majority of patients, both transported and not transported, were satisfied with their encounter with EMS.

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13. David E. Persse MD, Customer Satisfaction in a Large Urban Fire Department Emergency Medical Services System, Academic Emergency Medicine, 2000, Volume 11 Issue 1, Pages 106 – 11

This researcher[14] (Doyle Yoon, Sejung Marina Choi 2001) examines the role of perceived interactivity and other marketing tactics in relationship building with customers in the online retail environment by applying a relationship investment model adapted from De Wulf, Odekerken-Schröder, and Iacobucci (2001). A proposed structure model was tested with data collected from an online survey of 571 respondents. In the model, three sub dimensions of perceived interactivity and three marketing tactic variables were incorporated as the antecedents of perceived relationship investment that subsequently influenced perceived relationship quality and behavioral loyalty.

Results suggest that two marketing tactics - direct mail (e-mail) and tangible rewards - and two dimensions of perceived interactivity - synchronicity and two-way communication - play as significant antecedents for the relationship building process of online retail brands. In addition, the findings confirm the relationships among perceived relationship investment, relationship quality, and behavioral loyalty, which indicate that the fundamental process of relationship building remains similar in the online environment. Reflecting the unique nature of the online retail environment, the model also clarifies the roles of interactivity as well as traditional relationship investment strategies in facilitating online retailer's relationship building with customers.

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14. Doyle Yoon, Sejung Marina Choi , Dongyoung Sohn, Building customer relationships in an electronic age: The role of interactivity of E-commerce Web sites, Psychology and Marketing, 2001,Volume 25, Issue 7, Pages 602 - 618

The researcher[15] (Barbarra Everitt, Bryan ,1999) discusses on the customer satisfaction indicating differences among demographic and socioeconomic groups. There is a negative relationship between customer satisfaction and socioeconomic status with customer's having the means to pay for quality being far more critical of the quality received or quality/ value trade offs.

The author[16] (Zhang, Qingyu,2009) states that Product concept flexibility (i.e., developing design options) and product prototype flexibility (i.e., creating working models) emerge as effective ways to quickly develop new products that meet competitive challenges and satisfy customer demands. Product concept flexibility enables firms to fully explore various product definitions and ideas. Product prototype flexibility allows firms to gather customers' feedback and investigate design feasibility. The results indicate that firms with high product concept flexibility are more likely to benefit from prototype flexibility than firms with low product concept flexibility, and that product concept flexibility and product prototype flexibility act independently and additively to predict customer satisfaction.

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15. Barbarra Everitt, Bryan, Assessing the impact of retial price promotions on product substituition, complementary purchase, Journal of Marketing, 1999,1Vol IV,issue 2, Pg34

16. Zhang, Qingyu, Product concept and prototype flexibility in manufacturing: Implications for customer satisfaction, European Journal of Operational Research; Apr2009, Vol. 194 Issue 1, pp143-154, 12

As is the case in most other service industries, customer satisfaction is of paramount importance in the telecommunications industry. This diversity makes it implausible to have a uniform customer satisfaction questionnaire that can be administered to all the different service/customer segment combination. Therefore, the author[17] (Hahm, W. Chu and J. W. Yoon ,2004) first carried out a segmentation study to identify key customer segments for Korea Telecom, and then focused on one service/customer group in developing the questionnaire. The questionnaire was developed using the SERVPERF approach to measuring service satisfaction. The system consists of data input, tracking ability, and statistical modeling capabilities. The computer software was designed as an "open" decision support system that was intended to be used by a wide and general audience within Korea Telecom to review and make active use of customer satisfaction data.

This author[18] (Arun Sharma, 2003) examines an unexplored but potentially important area - the influence of customer's perceptions of a salespersons affect toward customers on persuasion. The results of the research suggest that if customers perceive salespeople to have a positive affect toward their customers, message processing and persuasion are enhanced. In contrast, if customers perceive salespeople to have a negative affect toward customers, lower levels of persuasion and heuristic processing are observed. Managerial implications of the research are suggested and directions for future research proposed.

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17. J. Hahm, W. Chu and J. W. Yoon, A strategic approach to customer satisfaction in the telecommunication service market, 2004, Computer and Industrial Engineering, 2004, vol 33, issue 34, pp 825

18. Arun Sharma, Does the salesperson like customers? A conceptual and empirical examination of the persuasive effect of perceptions of the salesperson's affect toward customers, Psychology and Marketing, 2003,
Volume 16 Issue 2, Pages 141 - 162

The purpose of this research[19] (Wonjae Lee, 2000) is to evaluate the influence of waiting time on service quality and customer satisfaction. The surveys were distributed to customers in a cafeteria at a large northeastern university to measure service quality, customer satisfaction, expected reasonable waiting time, and perceived waiting time. The results showed that when customers expected reasonable waiting time was longer than perceived waiting time, the discrepancy between expected reasonable waiting time and perceived waiting time influenced service quality and customer satisfaction. The results also showed that negative correlations existed between simulated actual waiting time and customer perceptions of service quality.

The impact of involvement and ambiguity on satisfaction judgments for high-credence property services such as health care has not been studied. This study[20] (Teri Root Shaffer, 2002) examines the level and process effects of involvement on satisfaction with two dimensions of a health-care service. It was found that higher levels of customer involvement were associated with greater expectations and performance ratings for the ambiguous dimension of the service (physicians). Customer involvement had no influence on ratings for the non ambiguous aspects of the service (access mechanisms). Perceived performance was found to be the most influential predictor of satisfaction for low-involvement subjects. High-involvement subjects used disconfirmation and performance to evaluate physicians and only disconfirmation in forming satisfaction judgments for access mechanisms.

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19. Wonjae Lee, Impact of Waiting Time on Evaluation of Service Quality and Customer Satisfaction in Food Service Operations, Foodservice Research International, 2000, Vol 12 Issue 4, Pages 241 – 254

20. Teri Root Shaffer, Consumer satisfaction with health-care services: The influence of involvement, Psychology and Marketing, 2002, Volume 14 Issue3, pp 261 - 285

ANALYSIS AND INTERPRETATION

CHAPTER 3

ANALYSIS AND INTERPRETAION:

3.1 Distribution of users of NPSL

Data analysis is the process of working with the data to provide an understanding of the data that has been collected from the users of NPSL ups using statistical tools and techniques, which in this study are Percentile analysis, Factor analysis, Mean and variance analysis, chi Square analysis and regression analysis.

Table1: Association of the respondents to the product from NSPL.

N= 100

Period Of Use	Number of Respondents	Percent
Less than a year	18	18
1-3 years	20	20
3-5 years	22	22
> 5 years	40	40
Total	100	100

Source: Primary Data

The above table helps to find the respondent's term of usage of ups delivered from Numeric Power Systems Limited, Chennai. It can be said that most of the respondents who were administered with the questionnaire about 40 % of them used the products of NSPL for more than a period of 5 years and the second most used was 22 & who happen to use the products over 3-5 years while a 20 % of them used it for a period ranging from 1-3 years.

3.2 Distribution of users of NPSL with respect to awareness

Table2: Respondents awareness of existence of NSPL.

N= 100

Medium of Awareness	Number of Respondents	Percent
References from peers	20	20
Listings in Directory	12	12
Word of Mouth	38	38
Approach from the customers company	10	10
Personal approach from NSPL	20	20
Total	100	100

Source: Primary Data

Table No: 2 describes the respondent's awareness of existence of NSPL. And the medium through which they either came to know about the company or made a purchase.

Awareness is a promotional activity having a primary purpose to increase general knowledge of the company and to make people feel more positive towards it. It can be also said that it is the beginning of the product adoption process. The medium through which most customers have come to know of NPSL is through Word of mouth (38%) followed by an equal representation of references from peers and personal approach of the company to widen its market.

3.3 Distribution of users with respect to satisfaction

Table 3: Respondents experience with the products of NPSL.

N = 100

Period Of Use	Number of Respondents	Percent
Highly Satisfied	58	58
Moderately Satisfied	22	22
Moderately Unsatisfied	12	12
Highly Unsatisfied	8	8
Total	100	100

Source = Primary Data

The above table tries to explain the experience of users of NPSL ups through their years of relationship with the company with the products.

Products fulfill needs, experiences fulfill desires. It is a much known fact that satisfied users comes back for a purchase irrespective of the price, and the whole concept of customer loyalty and customer retention revolves around this. Hence knowledge about this for the company is extremely beneficial. Form the above table it is evident that majority of the customers (58%) are highly satisfied with the products offered by NPSL, while a few of them (22%) moderately satisfied. A sheer minority (12) is highly unsatisfied, however in totality an 80% satisfaction is seen which is quite stunning.

3.4 Distribution of users in terms of need

Table 4: Frequency of power cuts faced by the respondents

N = 100

Period Of Use	Number of Respondents	Percent
Once in a week	12	12
Twice in a week	16	16
Thrice in a week	20	20
More than thrice in a week	52	52
Total	100	100

This table helps us to find out what sort of users prefer for the ups which will help us to further narrow down for sales search. If the customer has got a problem, then the best part of business is to do what you can, with what you have from where you are. The need or the trouble faced by the users creates a market.

It is clearly evident from the statistics that majority (52%) of the customers face frequent power cuts driving them to own a ups and this is a very promising sing for NPSL to expand its wings and foray into the market. Further 20 % of the customers are facing it to at least three times a week. This condition if found prevailing is very favorable to the company.

3.5 Distribution of use satisfaction based on personnel interaction

Table 5: Respondents satisfaction with the service personnel's recent interaction

N = 100

Period Of Use	Number of Respondents	Percent
Highly Satisfied	72	72
Moderately Satisfied	20	20
Moderately Unsatisfied	4	4
Highly Unsatisfied	4	4
Total	100	100

Source = Primary Data

The above table helps the researcher to identify the volume of customers satisfied with the personnel's of NPSL during the process of interaction which may be while placing and order, enquiring on sales delivery or negotiating the price or even when asking for a replacement.

Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator within business and is part of the four perspectives of a Scorecard. Certain customer characteristics (such as customer trust, customer price consciousness, and the importance of product/service to the customer) and salesperson characteristics (such as empathy, expertise, and reliability) moderate the relationship between salespeople's work satisfaction and customer satisfaction as well.

A vast majority (72%) is highly satisfied with the recent personnel's interaction during either the installation or repairing tenure .This could be either attributed to the personnel's attitude, fast fault clearance, or empathetic nature, 20% of them are moderately satisfied while only 4 % are both moderately and highly unsatisfied.

3.6 Distribution of users trust on NPSL services

Table 6: Response received from the NPSL during urgency

N = 100

Period Of Use	Number of Respondents	Percent
Instant response	56	56
To an extent reliable	23	23
Reliable with pressure	14	14
Response after repeated remainders	7	7
Total	100	100

This table helps us to identify the nature of response given by NPSL, Chennai when contacted by an user in case of emergency faced by them. Customer satisfaction is considered an indicator of quality of emergency calls can provide information about the understanding and empathetic nature of the service personnel's behavior.

The table clearly depicts that majority (56) of the complaints are handled swiftly by the service personnel's and the (23 %) customers are in a position to rely on their services as well. Few backlogs (7%) are seen however response after repeated remainders is a minimal number which has to be looked into.

3.7 Analysis of mean on users response to service attributes

Table 7: Mean and Variance analysis for service quality related variables

Service Attributes	Mean	C/V %
Dependable Service	4.662	0.042
Employees Trustworthiness	3.384	0.046
Fulfillment of Promises	3.333	0.045
Employee efficiency and competency	3.987	0.046
Easy approachability	4.146	0.041
Employees are pleasant, caring and friendly	4.012	0.042
Individual personal care	3.241	0.046
Performs right service first time itself	4.762	0.064
Proper maintenance of records	3.211	0.046
Low waiting time	3.467	0.460
Service provider is sympathetic ,reassuring	3.802	0.051
Fault repair is fast	4.250	0.042
Physical facilities of offices are visually appealing	3.981	0.040

It is clearly evident that the mean of most of the variables is more or less over 3 which states that the Indian market of users of ups of NPSL are agreeing with most of the service related variables in line with the service providers. Variables such as dependable service(4.662), easy approachability(4.146), employees nature and attitude(4.102), fault repair(4.250) being done fast have a mean value more than 4 which indicates that the company has a good image amidst the customers in these areas while personal care, record maintenance need immediate attention. Since the coefficient of variance for all the variables is less than 0.04 it shows majority of them are consistent except the variables stating the nature of service provider (0.051) which is slightly deviating from the pattern.

3.8 Analysis of mean on user's response to quality of service attributes

Table 8: Mean and Variance analysis for satisfaction related variables

S.No	Service Attributes	Mean	C/V %
1	Convenient to order & replace	3.853	0.041
2	Sufficient presence in the city	3.162	0.041
3	Convenient operating hours	2.993	0.046
4	Competitive services in the market	4.135	0.034
5	Reasonable pricing of services	4.237	0.036
6	Range & availability of value added services	3.991	0.040
7	Accurate billing	3.056	0.422
8	Reputation & image of the company	4.357	0.032
9	Product innovativeness	3.892	0.041
10	Effective promotion schemes	3.159	0.042
11	Information to customers	3.251	0.042
12	Behavior of employees instill confidence	3.404	0.410
13	Physical facilities of offices are visually appealing	3.471	0.040

It is clearly evident that the mean of most of the variables is more or less over 3 which states that the Indian market of users of ups of NPSL are agreeing with most of the satisfaction related variables in line with the service providers. Variables such as competitive services (4.135), pricing of services (4.237), image of the company (4.357) and range of available value added services (3.991) show a clear welcome from all the customers. The company needs to concentrate on promotional methodologies and transparency in billing. In this table the coefficient of variance is very high in image of the company (0.0322), provision of competitive services in the market (0.034), and the pricing (0.036) which shows the level of the consistency of the data.

3.9 Factor analysis on users response to satisfaction on service from NPSL

Table 9: Analysis of most influential factors for customer satisfaction with respect to service quality

Service Attributes	Type of Industry			
	IT	Banking	Manufacturing	Service
Dependable Service	0.921	0.948	0.643	0.582
Employees Trustworthiness	0.363	0.468	0.572	0.263
Fulfillment of Promises	0.169	0.510	0.732	0.261
Employee efficiency	0.181	0.380	0.411	0.419
Easy approachability	0.761	0.895	0.710	0.621
Employees are pleasant, caring and friendly	0.834	0.881	0.620	0.448
Individual personal care	0.271	0.450	0.296	0.419
Performs right service first	0.950	0.896	0.439	0.271
Maintenance of records	0.191	0.018	0.217	0.141
Low waiting time	0.294	0.360	0.461	0.636
Service provider is sympathetic, reassuring	3.022	3.183	2.561	2.830
Fault repair is fast	0.937	0.928	0.740	0.810
Physical facilities of offices	0.772	0.820	0.692	0.553

The main applications of factor analytic techniques are to reduce the number of variables and to detect structure in the relationships between variables that is to classify variables. The reason influencing the satisfaction of customers in manufacturing business are reliability, behavior of employees and performing the right service first while in the case of IT and banking industry being prioritized to the swiftness in fault repairs followed by their behavior and service and in the case of service industry it's the first service being the best rated need of them.

3.10 Factor Analysis on user's response to satisfaction on quality of service from NPSL

Table 10: Analysis of influential factor with respect to features of service

Service Attributes	Type of Industry			
	IT	Banking	Manufacturing	Service
Order & replace facility	0.192	0.017	0.558	0.312
Sufficient presence	0.660	- 0.241	0.720	0.020
Convenient operating hours	0.035	0.931	0.418	0.842
Competitive services	0.818	0.745	0.368	0.610
Reasonable pricing of services	0.812	0.943	0.603	0.701
Range & availability of value added services	0.999	0.831	0.376	0.441
Accurate billing	0.030	0.820	0.726	0.924
Image of the company	0.983	0.168	0.036	0.676
Product innovativeness	0.343	0.023	0.898	0.845
Promotion schemes	0.313	1.282	2.000	1.630
Information to customers	0.511	0.688	0.092	0.203
Behavior of employees instill confidence	0.331	0.445	0.592	0.487
Physical facilities of offices are visually appealing	0.343	0.439	0.078	0.128

Factor analysis helps us to identify the most influencing variables that affect the quality of service.All business categories unanimously rate the amiability of prices as their top influencing factor followed by range of services for IT industry, up gradation of information to banking industry, product innovativeness for manufacturing and service industry stating that NPSL copes with different needs of customers.

3.11 Variation of satisfaction of users to the corporate category

Chi square test is used to test for independence between the variables. If the variables are independent of each other (or in other words they have no relation), then the Chi-Square test will be non-significant. If the variables are found to be related, then the results of the statistical test will be "significant"

H_0 : There is no significant difference between the categories of business to the satisfaction of customers in relation to the usage of products.

Table 11: Relationship between business type and satisfaction of customers

S.No	Type of Business	χ^2	P
1	IT	22.8	0.024
2	Banking	13.9	0.035
3	Manufacturing	34.9	0.637
4	Service	10.4	0.821

From the above table it can be said that in manufacturing (0.637) and service sector (0.821) values are greater than 0.05 hence we reject the null hypothesis that there is no significant difference between the categories of business to the satisfaction of customers in relation to the usage of products from NPSL. However the values are different in It(0.024) and banking sector (0.035) , this might be due to the volume of business being dealt or due to different personnel being involved or due to the long term relationship they hold or could be even due to the company's ability to meet and overwhelm their expectations.

3.12 Analysis of dependency on the most influential factors to satisfaction of user's response to service.

Regression analysis refers to techniques for the modeling and analysis of numerical data consisting of values of a dependent variable. Regression can be used for prediction Here the dependent variable is customer satisfaction.
The equation for regression is:

y1 = a+ b*x1 + b2*x2 + b3*x3 + b4*x4 + b5* x5 ,
Where y1= customer satisfaction, x1 = dependable service, x2 = employees efficiency, x3 = approachability, x4 = employees behavior, x5 = performing right service the first time.

Table12: Regression Analysis with customer satisfaction as dependant variable with regard to the service quality.

Service Attributes	Standardized betas	t value	Significance
Dependable service	0.347	9.486	0
Employees efficiency	0.459	11.733	0
Approachability	0.402	10.260	0
Employees behavior	0.074	6.482	0.086
Right service at first time	0.225	13.317	0

It can be clearly said that only employees behavior(0.074) is not significant at 5% level of significance, and all other variables such as dependable service(.347), employees efficiency (0.459) , approachability(0.402), at performing the right service the first time shows a better edge over the employees behavior. Employee's efficiency, performing the right service the first time and approachability are highly significant than others.

3.13 Analysis of dependency on the most influential factors to satisfaction of user's response to quality of service.

The goal of regression analysis is to determine the values of parameters for a function that cause the function to best fit a set of data observations that you provide.

The equation for regression is:

$y1 = a + b*x1 + b2*x2 + b3*x3 + b4*x4 + b5* x5,$

Where y1= customer satisfaction, x1 = competitive services,

X2 = pricing of products, x3 = image of the company, x4 = value added services, x5 = product innovativeness

Table13: Regression analysis with customer satisfaction as dependant variable with regard to the service features.

Variables	**Standardized beta**	**t value**	**Significance**
Competitive services	0.481	7.361	0
Pricing of products	0.399	6.713	0
Image of NPSL	0.410	7.192	0
Value added services	0.184	3.502	0.941
Product innovativeness	0.374	6.420	0

The above table states that competitive services (0.481), image of the company (0.410), product pricing (0.399) and innovativeness (0.374) of the product are highly significant except that of the value added services at 5 % level of significance.

FINDINGS, RECOMMENDATIONS AND CONCLUSION

CHAPTER 4
FINDINGS, RECOMMENDATIONS AND CONCLUSION

4.1 FINDINGS:

4.1.1 Profile of the Respondents:

i. Most of the customers had business dealings with NPSL for more than 5 years and a slight equal proportion fell in between 1-5 years.

ii. Nearly 38% of the respondents came to know about NPSL through word of mouth, which is quite happy to be noted as satisfied people had recommended it; on the other hand the company could alter its promotional strategies in relevance to advertising which could bring many opportunities.

4.1.2 Profile of Satisfaction of Users:

i. Majority of the customers were happy of being used the products offered by NPSL and 22% of them where moderately satisfied. On the whole it could be said that 80 % of satisfaction is seen from the respondents who were interviewed.

ii. Majority of the customers faced power cuts more than thrice a week and which clearly paved way to articulate enough market for the business with increasing working hours and power demands from the customer's side.

iii. 72% of the respondents were highly satisfied with the recent personnel interaction they had and 20% were moderately satisfied, totally it could be said 90% satisfaction level which is appreciable.

iv. Majority of the customers agreed that the response from the company during times of emergency was instant while 23 % said their service to be reliable and 14% voted for reliable service put in with pressure and just a 7% who said they had to expect it after giving them few remainders.

4.1.3 Identification of the Fortifying Factors to NPSL

i. The mean and variance analysis done on variables affecting the service quality are dependable service, easy approachability, employees nature and fault repair being done fast are rated the best.

ii. A similar analysis done on variables of service features shows that offering of competitive services, pricing of services, image of the company built and range of availability of value added services are the steering factors that has led the business to expand its wings however the company has to concentrate on transparency in billing and promotional strategies.

4.1.4 Analysis of the Determining Factors Relating To Satisfaction of Products of NPSL

i. The top influencing factors relating to customer satisfaction are being categorized separately for different business types. The IT and banking industry relate satisfaction to the speed with which repairs are being carried on while manufacturing and service industry sticking on to the initial service being the best.

ii The pioneering factors affecting customer satisfaction relating to

features of service are range of services for IT industry , up gradation of information to banking industry , for manufacturing and service in being product innovativeness.

4.1.5 Relationship between Customer Satisfactions To Type Of Business.

i. The analysis shows that there is a significant difference to the customer satisfaction with manufacturing and service industry while there is no significant difference between IT and Banking sectors.

4.1.6 Analysis of the Level of Significance of the Dominating Factors with Customer Satisfaction As The Base

a. Regression analysis done at 5% level of significance shows that performing right service the first time, efficiency of employees, approachability outnumber variables such as dependable service behavior of employees.

b. A similar test conducted shows that competitive services and image of the company are better relevant than other variables.

4.2 RECOMMENDATIONS TO THE STUDY:

4.2.1 Profile of the Respondents:

i. Findings show that majority of customers had business dealings with NPSL for more than 5 years and a slight equal proportion fell in between 1-5 years, however customers belong to various industries. It is evident from this that most customers like to keep their business dealings with NPSL, although the company could further venture out and expand its base.

ii. The analysis shows that NPSL has got most of its business through word of mouth which is quite heartening to know on one side while it shows that the company concentrates less on promotional works making it difficult for it. When all companies going to massive advertisements as a strong feature NPSL is slightly backing up. Most ups companies are aware of it and are taking advantage of this.

4.2.3 Profile of Satisfaction of Customers:

i. The satisfaction level of products used by the customers are as high as 80% , a consoling figure however it shows a great chance for further improvement with the study done. The company could look into this matter and widen its horizons.

ii. Most customers who face frequent power cuts have resorted to NPSL, hence the company could look into such areas and make a database of companies

requiring their facilities and the company could employ sales people to frequently strike a deal with them.

iii. 90% of the customers were highly satisfied with the recent personnel's interaction, however the rest 10% were disappointed .The company could conduct some training programs targeting this and ensuring the company could create a pattern or a model through which the personnel are trained to talk to a customer in a sequenced way.

iv. There seems to be no doubt on the technical knowledge and reliability of the work done by the service personnel, care has to be taken that they are updated and sent to frequent programs conducted by SISI or ITI.

4.2.4 Identification of the Fortifying Factors To NPSL

i. Customers have rated that they are dissatisfied with the paper works, whether to trust their employees, they also feel that individual personal care is seldom given. Initially the company was unaware of the dissatisfaction; now that the problems are pinpointed the company can frame strategies which could instigate better performance both from the customers and employees.

ii. The mean test done on the service features states that there isn't transparency in the billing , the operating hours are not convenient .The company could operate round the clock service incase of emergency and regarding the billing the company can initially convey to the customer the money involved in VAT and transportation charges.

4.2.5 Analysis of the Determining Factors Relating To Satisfaction Of Products Of NPSL

i. There seems to be a differentiation in the services rendered to the customers depending on the industry, as said earlier the company could train them of how to deal with personnel and their soft skills could be further enhanced.

4.2.6 Relationship between Customer Satisfactions to Type of Business.

The results show that the It and the banking industry saying there is no difference in the way they have been treated however the manufacturing and service industry say they have found a drastic difference. The reason to note this could be that service and manufacturing industries volume of business to the company is meager when compared to the service and manufacturing business. Secondly the company bags their orders through passing tenders ,hence it is normal that the pressure put in by the senior management would definitely be shown in the lower management employees .In addition there wouldn't be much of a difference in the way the top management deals but it wouldn't be so in the case of service personnel's.

4.3 CONCLUSION:

The ups market in India is a highly competitive one due to increase in the number of users belonging to the corporate category. Special economic zones and other related business are mushrooming all around day by day. Changes in consumption pattern and opening up of economy due to liberalization, privatizations and globalizations are being widened each day.. Against this background the study has attempted to highlight the necessity of a business to understand its pivotal points that might be responsible for its success as well as

the factors that are restraining it from being a success. The perception of the users of ups from corporate sector is dealt in detail in terms of the service offered by the product as well as the features of services includes the service personnel. The findings would enable the ups market to look back again and ensure they meet not only their expectations but overwhelm them with their services.

APPENDICES

APPENDICES:

A STUDY ON THE DRIVINGFACTORS OF CUSTOMER SATISFACTION AMONG THE USERS OF NPSL UPS IN CHENNAI.

QUESTIONNAIRE:

1.Company's Name & Address: ----------

2. How long have you been associated with Numeric Power Systems Limited?

a) Less than a year b) 1-3 years c) 3-5 years d) > 5 years

3.You were informed about NPSL's services through

a) References from peers b) listings in directory c) Word of Mouth

d) Approach from the company e) personal approach

4. Your experience with the installed product performance is

a) Highly satisfactory b) moderately satisfied c) moderately unsatisfied

d) Highly unsatisfactory.

5. How often do you face power breakdown in your locality?

a) Once in a week b) twice in a week c) thrice in a week d) more than thrice a week

6. You are ---------- with the service personnel's recent interaction.

a) Highly satisfied b) moderately satisfied c) moderately unsatisfied

d) Highly unsatisfied

7. In case of emergency aroused due to UPS breakdown during the tenure of AMC, how was the response from NPSL?

a) Instant response b) to an extent reliable c) reliable with pressure put in

d) Response after repeated remainders

8. Kindly tick the type of industry the company belongs to

a) IT b) Banking c) Manufacturing d) service

9. Kindly tick (✓) in the field that is most applicable to your experience with the firm.

Features	Strongly Satisfied	Slightly Satisfied	Neutral	Strongly Unsatisfied	Slightly Unsatisfied
Dependable service					
Employees trustworthiness					
Company's fulfillment of promises					
Employees efficiency & competency					
Easy approachability					
Employees are pleasant, friendly and caring					
Individual personal care					
Performs service right the first time					
Proper maintenance of records					
Low waiting time					
Service provider is sympathetic & reassuring					
Fault repair is fast					
Physical facilities of offices are visually appealing					

10. Please rank the features of service offered by NPSL, which has influenced you, the most. (Rank 1- highest, 8-Least)

Features	Rank
Replacement	
Promptness in delivery	
Price comfort level	
Better customer response	
Buy back offers	
Prompt service	
Handling of customer complaints in warranty	
AMC	

11. Please indicate your response with a tick (✓) to the service features offered by NPSL.

FEATURES	Strongly Satisfied	Slightly Satisfied	Neutral	Slightly Unsatisfied	Strongly Unsatisfied
Easy & convenient to order and replace					
Sufficient presence in the city					
Convenient operating hours					
Competitive services in the market					
Reasonable pricing of services					
Range and availability of value added services					
Billing is accurate and understandable					
Company has reputation & good image					
Innovativeness of product, constant up gradation					
Effective promotion schemes					
Information to customers of exact service delivery					
Behavior of employees instill confidence					
Safety & security in transactions					

12. Please tick (✓) the features that you look forward to be received from NPSL in future.

Services	Strongly expecting	Slightly expecting	Neutral	Slightly not expecting	Strongly not expecting
Recorded service registration					
Automatic call back confirmation					
Reduction in shifting charges					
Online complaint/query assistance.					

Have a great day ahead ☺

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