Chapter 5: Findings, Discussions, Suggestions and Conclusion

The final chapter is comprised of three sections, in which the first section gives the summary of findings. The second section presents the discussions and the suggestions to promote fixed broadband service (DSL) of BSNL and the last section gives the conclusion.

5.1 Summary of Findings

The findings section of the study is further classified into five sub-sections. In which, the first three sub-sections outline the findings of existing studies which are relevant to the present study, i.e growth of wireline, fixed broadband and market share of broadband technologies are summarized in 5.1.1; then the demographic and economic profile of the countries chosen for the study is listed in 5.1.2; and then the external marketing practices adopted by AT&T, Korea Telecom, France Telecom and BSNL are compared in 5.1.3.

The last two sub-sections present the findings of primary data analysis, i.e 5.1.4 details the findings of internal marketing practices of BSNL; 5.1.5 presents the findings of interactive marketing practices of BSNL and its effectiveness.

5.1.1 Growth of WireLine, Fixed broadband and Market Share of Broadband Technologies:

- Globally, the wireline sector witnessed a significant growth from 1975 to 2006. The subscriber base increased from 229.6 million in 1975 to 1206 million by 2006. But, from the year 2006 onwards the sector started to decline and subscriber base accounted for 1156 million in 2013 (chart 1.1).

- The decline in wireline sectors, led to the loss of revenue for the incumbent wireline service operators. Fortunately, the emergence of broadband technology, (DSL) by the end of 1990’s has rejuvenated the wire line sector.
Many service providers across the world, like Deustche Telecom, Korea Telecom, France Telecom etc., have made use of the opportunity and started to promote broadband service.

There are various broadband technologies available like, DSL, cable, fiber, wireless, satellite etc. But it was DSL and Cable modem which played a vital role in promoting broadband services in the earlier days of broadband due to widely available infrastructure.

Chart 2.1.2 depicts that DSL technology lead the market share of broadband technologies across the globe with 60.80%, it was followed by cable technology with 19.40%. Fiber as hybrid technology (FTTX = fiber + DSL) 14.10%, FTTH with 2.60%, satellite 1.90% and wireless with 1.30% in 2011.

Similarly, in India DSL technology dominated the broadband service with the market share of 86%, followed by cable with 8%, Ethernet 4%, fiber 1% and wireless 1% as of 2011(chart 2.1.3).

The Global fixed broadband subscriber base has drastically increased to 674.33 million subscribers, in 2013, from a subscriber base of 15.89 million in 2000 (chart 2.1.1).

Among the global fixed broadband subscribers, OECD countries accounted for 50.27% with 339.001 million subscribers as of Dec’ 2013 (chart 2.2.1).

OECD has 33 countries as members, out of them, France, US and Korea were considered for the study based on their penetration of fixed broadband services.

France, which had 34.2 subscribers per hundred inhabitant, accounted for 90.95% of the total subscriber base in DSL technology. Korea, with 24.2 per 100 inhabitants, had a share of 64.53% in fiber technology. US, with 17.3 per 100 inhabitants, held 58.05% of total subscriber base in cable modem as of Dec’2013 (chart 2.2.2).

Even though Denmark and Canada were leading in cable technology, US was considered for the study as it is the birth place of internet.

There existed a common relationship between the selected OECD countries and India i.e all the four countries have a larger subscriber base of fixed broadband services and are placed in top ten positions. US with 87.97 million subscribers
ranks 2nd in the world, France with 24.78 million ranks 5th, Korea with 18.35 million subscribers ranks 8th and India with 13.70 million subscribers is placed at the 10th position (Chart 2.2.3).

5.1.2: Demographic and Economic Details of the Countries Considered for the Study:

As mentioned in the earlier chapters, many studies and reports have stated that, the demographic, social and cultural factors significantly contribute to spread of broadband services (for eg: Ford et al, 2007). So, the study considered a few of those factors like urban- rural classification, broadband penetration, GDP per capita and literacy rate across the selected countries and it was found that,

- In Korea, US and France, the urban population accounted for more than 80% of the total population in contrary to India where the rural population is more than two-fold of its' urban population.
- While considering the economy based on GDP per capita it was found to have a greater correlation towards broadband diffusion. The correlation between GDP and broadband, among the OECD countries, was 0.65 in 2011.
- The GDP per capita in Korea, US and France was greater than $25,000 which signified them as high income country and in India the GDP per capita was just $1498.
- The literacy rate in Korea, US and France was more than 95% while India had only 61%.
- Even though the four countries were ranked among the top ten, in terms of broadband subscribers, there exists a vast difference in their penetration; i.e Korea was in the 9th position, France in 8th, US in 24th and India in 137th place (table 2.2.1).
- Among the four countries, France had a strategic growth in the broadband penetration i.e it reached 37.6 per 100 subscribers in 2013 from 0.33 per 100
subscribers in 2000 compared to US, which attained penetration of only 29.8 per 100 subscribers in 2013 from 2.48 per 100 subscribers in 2000.

- In India, though commercialization of broadband was initialized by 2000, it witnessed a moderate growth only after 2008. It has reached the penetration of only 1.16 per 100 subscribers in 2013 from 0.01 per 100 subscribers in 2002 and it is still in incubation.

- Even though Korea currently leads in fiber technology, DSL technology was their initial driver in promoting the broadband service.

- From 1999 to 2005, Korea Telecom made a significant contribution towards the promotion of DSL with a market share of 44% (as of 2001).

- In US, though cable technology had a wider infrastructure, telecom sector (DSL) competed with it in almost every region of US.

- AT&T, the wire line incumbent operator in US along with Verizon accounts for 75% of ADSL service.

- In France, France Telecom holds a market share of 41% in broadband service. Its' great success relies on LLU (Local Loop Unbundling) and VoIP (Voice over Internet Protocol) service.

- In India, BSNL with its’ wide wired infrastructure had a major market share of 67.67% in wire line, 11.41% in wireless and 65.96% in broadband service as of March 2013 (TRAI, 2013).

In spite of BSNL’s established infrastructure it is unable to generate revenue from wireless services and also getting low revenue in wireline services. So BSNL has to retain its market share in broadband services. Fan (2005), Muller (1999) have suggested that telecom sectors should have market oriented reforms, to achieve their objectives like network expansion, universal service etc. So, the study utilized Zeithaml & Bitner (2000), service triangle model which represents all 3M’s (external marketing, internal marketing and interactive marketing), because for organizations to achieve their goal they should utilize all the three marketing strategies (Gronroos, 2000).
With this notion, the study tried to analyze the traditional marketing practices (External Marketing) of four incumbent operators namely, Korea Telecom, France Telecom, AT&T and BSNL in promotion of fixed broadband (DSL) services.

5.1.3: Comparison of External Marketing:

Product:

- With respect to visible part of the product, MODEM and splitter are the major equipments used in DSL service at the customer's premises. DSLAM is used at the telephone exchanges to provide DSL service.
- Though phone is optional, providers, like Korea Telecom, insisted that the subscribers should get new connection to avail for DSL broadband service.
- While both, AT&T & BSNL, supply the installation kit to its new DSL customers, AT&T, moves a step forward and provides self-installation CD with the kit to its customers (fig: 2.3.1).
- BSNL & AT&T offer firewall security to secure their customers’ data. In addition to that, AT&T offers life time security packages for its high speed internet customers.
- Free Static IP is offered to customers who subscribe for higher price plans. BSNL provides static IP for combo packages with prices higher than INR 3000.

Price:

- Fixed broadband service utilizes captive pricing i.e two-part pricing, where the first part refers to the installation charges; the second part refers to the monthly subscription charge.
- While Korea Telecom and BSNL charges for installation, AT&T charges only for professional installation on request.
- Installation charges include the cost of the MODEM, subscription cost and installation cost for the service. As MODEM price is costlier, many service providers like BSNL offer MODEM on monthly rental.
The various pricing strategies used for monthly subscription by the operators are flat-rate, usage based pricing, tiered based pricing, time of the day pricing etc. Flat-rate pricing is used for penetrating into the market by many service providers like AT&T & BSNL.

Time of the Day (TOD) pricing strategy is used by France Telecom and BSNL.

AT&T, France Telecom and BSNL made use of usage based pricing.

Korea Telecom, France Telecom and AT&Ts bundle price for triple-play service were almost equal. AT&T was the first to implement quadruple-play bundle service.

Discounts were given to customers who signed for a longer contract period. Korea Telecom offered discounts only for customers who entered into the contract for a minimum period of 3 years. BSNL offers one month discount for customers who start with one year contract subscription.

Promotion:

Role of government, plans and policies, awareness programs, co-branding were identified as some of the demand side promotional factors of broadband service.

Among the four countries chosen for the study, Korean government played a dynamic role in formulating various policies to promote broadband service. Some of the important polices were KII, e-Korea, U-Korea etc.

Inspired by Korea, France government also announced Digital Numerique in 2008 and Digital France 2020 to promote its broadband service.

In case of awareness programs, the digital literacy program by Korea had a great success and wider reach.

Plans and policies have a greater contribution for fixed broadband promotion than competition (chart 2.2.9).

The NBP (National Broadband Policy) was set up by France in 2006; by India in 2004 and by US in 2010.

Co-branding strategy was utilized by France Telecom initially with Philips to streamline and to promote its' broadband service.
Place:

- France Telecom has 1180 outlets; AT&T has more than 1000’s of retail outlets and BSNL has 38000 exchanges to serve its customers.
- AT&T, France Telecom and BSNL have their own web portal where customers can post their complaints and access general information.

With respect to internal marketing practices, it was found that Korea Telecom trained 2500 employees especially to promote broadband service. France Telecom also had trained its employees and expanded the training of the employees with an idea of making them as tomorrow’s professionals. It also established a separate R&D (Research and Development) department for promotion of broadband service. In case of interactive marketing, France Telecom which attributes a greater importance to customer satisfaction and consider that customer satisfaction forms the crux of its’ marketing strategies conduct surveys at regular intervals to determine the service quality and customer satisfaction factors. AT&T has also taken special efforts to improve its customer care. In India, though not specifically for BSNL, TRAI frames policies to measure the quality of service offered by all service providers in India and also conducts customer satisfaction surveys.

BSNL, with its large wired infrastructure, has 38000 electronic exchanges attached to 26 telecom circles. It will be a herculean task to study the internal and interactive marketing practices of BSNL across India. So, the researcher has narrowed the research to Pondicherry SSA, which offers service with 22 exchanges in and around Pondicherry. The available sources state that there are 220 employees involved in landline and DSL service to serve around 26000 fixed broadband subscribers as of 2012. The center is also one of the NIB (National Internet Backbone) point which serves for Pondicherry, Cuddalore, Villupuram, Tanjore and Kumbakonam regions.

5.1.4 Internal Marketing:

- From experts’ interview, it was observed that the vision, training and development and rewards were found to be synchronized with the Internal Marketing dimensions of Foreman and Money.
JSS (Job Satisfaction Scale) with good reliability and validity was adapted to measure job satisfaction.

The cronbach alpha of internal marketing was 0.873 and job satisfaction was 0.616 (table: 3.1).

Census method was adopted to survey all the employees involved in the landline and fixed broadband service (DSL). Based on completed questionnaire 180 samples (82%) were used for data analysis.

Internal marketing was found to be significant with respect to gender (table 3.10) and with respect to age, education and experience (table 3.11).

Job satisfaction was found to be significant with age, experience but insignificant with education (table 3.11) and gender (table 3.10).

CCA (Canonical Correlation Analysis) was used to study the linear relationship between the dimensions, internal marketing and job satisfaction construct using STATA 10.0.

Only three correlation co-efficient were derived, since internal marketing had only 3 items (table 3.13).

Based on the correlation values, first correlation co-efficient with the highest value and the items corresponding to it were considered.

The canonical correlation between internal marketing and job satisfaction was 0.62 (table 3.13).

Wilks’ lamda, Pillai’s trace, Lawley’s Hotelling trace and Roy’s largest root were statistically significant at 1% (table 3.14).

Only vision and development of the internal marketing synthetic construct were statistically significant at 1% (table 3.17).

With respect to job satisfaction, promotion and nature of work were statistically significant at 1% and communication was significant at 5% and rest of the items was found to be insignificant (table: 3.17).

5.1.5 Interactive Marketing:

Only performance items of SERVQUAL construct was considered to measure service quality with network quality as an added construct with 3 items.
The cronbach alpha of service quality constructs ranged between 0.667 to 0.843 and the overall service quality was (0.938). It was greater than the threshold value 0.60 (table 4.1).

The cronbach alpha of all the variables in the SEM model excluding service quality ranged from 0.719 to 0.825 (table: 4.1).

Further, with respect to the need for broadband service, profession was found to have greater association than education (table: 4.12 b)

Gender didn’t play a predominant role towards customer satisfaction and customer loyalty (table 4.14).

With respect to demographic factors, age was significant with customer satisfaction at 5% with f-value 2.727, education was significant with customer satisfaction at 1% with f-value 8.164; price for broadband service was found to be significant with the family income of the customers with f-value 2.669 at 5% level (table 4.15).

Distance which stands as major limitation for DSL service, the study found there was no significant difference between distance and service quality and hence the null hypothesis was accepted (table 4.15).

CFA (Confirmatory Factor Analysis) was used to assess the uni-dimensionality of the items.

Item reliability, construct reliability and AVE were determined to establish the convergent validity of the construct.

The item reliability ranged between 0.583 to 0.804, construct reliability of the constructs were greater than 0.7 and AVE of all the constructs except tangible (0.484) were greater than 0.5. Since they all satisfied the rule of thumb convergent validity for the construct was said to be established (table: 4.18).

The squared correlations were compared with the AVE of the constructs; as all the values were less than AVE, discriminant validity for the construct was established (table 4.19).

In addition to service quality, the study identified pricing, billing, customer service as customer satisfaction determinants. Customer satisfaction and trust as customer loyalty determinants and framed hypothesis for SEM model (fig: 4.7).
From the AMOS (table 4.22) results, it was found that out of 11 causal relations only four were significant.

With customer satisfaction as dependent variable, service quality was significant at 5% level and had a greater influence with a standard estimate of 0.705. Price was moderately significant towards customer satisfaction at 5% level. The customer satisfaction determinants explained 77.6% variance of customer satisfaction (table 4.22).

With trust as the dependent variable, only customer satisfaction was significant and had a greater influence on trust with standard estimate of 0.672.

With customer loyalty as dependent variable only customer satisfaction and trust was found to have greater influence on customer loyalty since they were statistically significant at 1%.

Service quality, which had a positive association, was found to be insignificant and also was found to have no direct effect on customer loyalty.

Customer support was also insignificant at 5% towards customer satisfaction and customer loyalty.

The customer loyalty determinants explained 78.5% variance of customer loyalty (table 4.22).

From the customer satisfaction - customer loyalty matrix, it was found that the percentage of disappointed customers (>60%) were greater than the percentage of impressed customers (fig: 4.8).

In order to determine the utilization of broadband service, Garrett ranking was used to rank the data set and it was found that education was ranked first followed by information search, email& chat, social media, downloading music, online games and VoIP (table: 4.25).

While online games were found to be one of the major reasons for promotion of broadband in Korea, People in US used broadband mostly for information search, news/weather etc.

The summary of findings for the hypothesis is picturized below, where the green line indicates significant and the red line insignificant relationship among the variables.
5.2 Discussions and Suggestions:

The discussion section of the study is further classified into five sub-sections. In which, the first three sub-sections discusses the three sides of the service triangle i.e 5.2.1 discusses the external marketing practices of BSNL with selected incumbent operators in OECD Countries; Based on primary data 5.2.2 discusses BSNL internal marketing practices and its’ effectiveness (job satisfaction) and 5.2.3 discusses the interactive marketing (service quality) and its effectiveness (customer satisfaction) which leads to customer loyalty.

As promotion of broadband service is also influenced by various other factors, the next two sub-sections i.e 5.2.4 discusses the need for broadband utilization and 5.2.5 discusses the demographic and economic factors of the Country.

Suggestions to the organization are presented at the end of the discussion part in each sub-section.

Though telephone was invented in 19th century, it was considered as one of the basic amenity only by 20th century. Towards establishing a wider infrastructure for telecommunication, many incumbent operators made huge investments across the globe and enjoyed their monopoly position for more than 3 quarters of the 20th century (by the end of 20th century) (Li & Xu, 2004). After 1990’s, globally the sector experienced a drastic change (Beard & Hartman, 1999), notably after the emergence of internet the entire globe reduced to a digital e-village which has enforced all the organizations to be market oriented (Lean, 2005) in order to sustain, compete and grow.

Looking into wireline sector, the transition from analog signal to digital signal (Annual Review of Broadband Communications, 2005), signified that wireline sector is no more limited to voice, because DSL was considered as a catalyst behind this transition, in particular convergence of data, video and voice over twisted copper wires. The convergence of triple-play has created a tough competitive environment for broadband service, so Uparami (2009) has stated that every ISP (Internet Service Provider) in this competitive environment should incorporate market oriented strategies to improve their performance. World Bank report has stated that, in developing countries
the public sector should bring in market oriented reforms and targeted incentives to promote their broadband service (Qiang, Rosotto, & Kimura, 2009). The wireline service providers were given prime importance as it was evident that in majority of the ITU (International Telecommunication Union) member countries the fixed line incumbents emerged as broadband dominants.

BSNL, the fixedline (wireline) incumbent operator in India, is experiencing a downturn revenue in wireline services and also unable to generate much revenue from the wireless sector, but it has to retain its' leading position in broadband market. So the researcher aimed to study the marketing strategies of BSNL used in marketing of fixed broadband service (DSL).

Earlier, the marketing strategies were used mainly to attract new customers, but later on it incorporated practices to retain existing customers (Bruhn & Grund, 2000). While there were various marketing strategies adopted, 3M’s of service triangle was considered. With respect to external marketing, the study underwent a descriptive research to compare the basic products used in promotion of broadband service, the security features of the products, price charged for the products and the service, promotional strategies used for promotion of broadband service and the place which indicates the easy accessibility of service. In order to measure external marketing practices of BSNL, the study compares the traditional 4P’s of BSNL with incumbent operators of selected OECD countries.

Though customer satisfaction is the ultimate goal of an organization, many studies have stated it could be achieved only by having satisfied employees. Berry (1981) has stated that only “happy employees could make happy customers”. For which the organizations should consider employees as internal customers and should take measures to satisfy internal customers which in turn would influence the external customer satisfaction that is significantly evident from SPC (Service Profit Chain) (Heskett et al., 1994). Lings (1999) has mentioned that organization should consider both the internal marketing and external marketing practices as the two sides of a coin, in order to achieve effective interactive marketing.
Pondicherry SSA, which had minimum broadband penetration of 1% in 2011 (fig: 2.4.2), was considered for the study to analyze the internal marketing and interactive marketing practices of BSNL.

5.2 External Marketing (Product, Price, Place and Promotion):

In the knowledge era, the emergence of broadband has given access for wide information at the finger tips of end users across the globe. Due to easy accessibility of information, customers could make comparison of price; determine the availability of various products and their features and so on. So the researcher tried to compare the external marketing practices of BSNL with incumbent operators of selected OECD countries.

5.2.1 Product:

With respect to product, as the invisible product (service) offered is one and same by every service provider, the study compared only the visible products which are supplied in the kit (fig 2.3.1) by many service providers, for eg: AT&T & BSNL. In the basic kit, MODEM & phone are the major instruments or devices used for transmission of digital signals over copper wire, splitter is also considerably important because it plays a vital role in separating the voice and the data signal. Moreover, the purchased product cannot be restricted to a specific service provider, for eg: MODEM purchased in France could be used in India, but with only on condition that the MODEM should synchronize with the broadband phone. To avoid confusions AT&T has its on-line shopping portal where it has given a wide choice for MODEMs, splitters, adopters etc. In case of BSNL, the customers could purchase it from other vendors and the MODEMS that are compatible with BSNL are specified on the web. While AT&T provides a self-installation CD along with the kit, most of the BSNL customers get it installed by the BSNL employees.

As, the broadband customers are connected to the internet for a longer period of time there are chances for data disturbances due to lack of security. Many service providers like AT&T, BSNL offer firewall as inbuilt security. In addition to these security features, there are chances of spams through e-mails; In Pingdom (2011) it was
mentioned that approximately 89% of emails were spam, which is also a threat for the internet users. So, AT&T went a step further and offers life time package which includes various facilities like free medical assistance, fire engine contact, two-way firewall security, email-spam checker and so on for its’ u-verse high speed internet customers.

The other major reason for insecure data is the usage of dynamic IP (Internet Protocol) which is allotted to the user once he gets connected and is assigned to different users after he/she disconnects. From available sources, it was found that BSNL has 15000 dynamic IPs. Notably for business users who want their information to be secured, could make use of the provision of static IP, i.e the IP which is allocated to one user could not be used by others. BSNL offers one free static IP for customers who enroll for higher packages like 3000 INR and above per month.

Though products are at par with other countries, BSNL could make use of advanced facility, like AT&T, and enhance measures to secure data of its customers.

5.2.1.2 Price:

The only revenue generator of traditional 4P’s, which emerged as one of the major differentiating factor for broadband service in addition to speed was identified as one of the major reasons for the wide digital gap that exists across the globe. To make fixed broadband as an affordable and widely available service (ITU 18.13), the prices of fixed broadband were considerably brought down after 2008, with in a period of 4 years there was a fall of 32% in developed countries and a drastic fall of 82% in developing countries (chart 2.3.1). Despite this drastic fall, the average cost for fixed broadband was still higher in developing countries i.e on an average it costs $160 and still remained too expensive for many people. So to make broadband as an affordable service, service providers came up with various pricing strategies like flat-rate, Time of the Day, tiered based, usage based and value based pricing. All these pricing relates only to the monthly subscription fee.

Flat-rate, one of the pricing strategies, was used by many incumbent operators as penetration pricing across the globe. It was incorporated as initial pricing in the earlier time periods to shift the narrowband users to broadband, as it did not charge for the time
spent on the net. BSNL & AT&T has also included flat-rate pricing system as penetration pricing strategy. A report by CISCO has specified that flat-rate should be included only as the initial pricing scheme and it could not be used for long term revenue generation. So service providers should gradually move from flat-rate pricing to usage based and value based pricing.

While BSNL has shifted from flat-rate to usage based pricing, AT&T a step forward has shifted from flat-rate to usage based and value based pricing. Apart from this many service providers, have introduced tiered-based pricing scheme where the price varies in terms of data usage levels called tiers. AT&T has introduced 250GB (Giga Bytes) data cap for its fixed line broadband internet users, signaling that “Internet traffic is not free” (Nicosia, et al., 2012).

Time of the Day (TOD) pricing aimed at new customers with data usage offers at specified time period in the day. France Telecom offered ‘Dolphin Plan’ as TOD where the customers can have unlimited access only at specified times i.e early morning, late lunch and late night time. BSNL offers TOD to its pre-paid customers’ i.e they are not charged for using the internet from 2:00 a.m to 8:00 a.m. This strategy attracted many BSNL pre-paid broadband customers.

As pricing is considered as an important factor which determines profitability/growth of an organization, incumbent operators should adopt sustainable revenue models in order to lead the market (Sen et al., 2013). Even though, BSNL has adopted various pricing plans, the major criteria lies in how far the employees are aware of this pricing system in promoting it.

Service providers should also provide discount offers not only to attract new customers but also to retain their existing users and to compete in the broadband market. While Korea Telecom offered discounts only to customers who entered for a longer contract period i.e three years, BSNL offers discount for its customers who enters a contract for a year and above.
As Price plays a vital role in broadband promotion, BSNL should not only consider making use of various pricing strategies but also communicate to its customers if any changes are to be made in the price for broadband service.

5.2.1.3 Promotion:

Promotion refers to all the strategies that motivate the present or potential customers to buy the goods/service. BSNL uses brochures, pamphlets and also organizes mela programs for two to three days at their exchanges to promote fixed broadband service. It also has a separate marketing team “UDHAAN” which involves in direct selling of landline and wired broadband services. In addition to these promotional strategies, the government, awareness programs, plans and policies, co-branding, bundling were identified as some of the demand side factors to promote broadband (Reynolds et al, 2003). This signifies, it is not only the service providers but also the active and dynamic role of the government and regulatory authorities which has a greater contribution towards promotion of broadband.

Unlike wireline or wireless services, usage of broadband requires certain basic understanding to determine why these service, what is its use, how to be benefited out of it and so on. With this cognition, countries like Korea, Japan, Singapore etc., have initialized awareness programs depicting the need and use of broadband service before promoting the service, for eg: ‘e-cartoon’ program by Singapore government, the digital literacy program by the Korean government etc. It could be noted that no other country has created an awareness program like Korea which targeted 10 million population including house wives, farmers, fishermen, military etc.

Similarly, looking into the role of government, it was Korea which took initiative and formulated effective plans and policies in implementing the broadband service. The telecommunications ministry of Korea, identified in 1980’s that broadband is going to lead tomorrow’s globe. It started initializing various plans from 1996, for eg: the first National Informatisation Plan was set for four years from 1996, by 1999 Cyber Korea project was formulated for three years, all the plans and policies were in process year
after year and still it is an ongoing process for the Korean Government (Broadband Policy Development in the Republic of Korea, 2009).

France which was inspired by the Korean government also framed the digital numerique program in 2008, in order to achieve 100% penetration of broadband by 2012. Digital France 2020 was formulated in 2011 to digitalize the country by making broadband as an affordable service to everyone in the country.

When it comes to plans, NBP (National Broadband Plan) was found to have a greater influence on fixed broadband promotion (1.7%) compared to the competition in the market (www.itu.int). Recognizing the crucial role of NBP, 146 governments framed NBP by 2013, in which 70% (102) are the developing nations (ITU, 2013). US included NBP only by 2010, France by 2006 and India by 2004.

Compared to other countries, though the NBP in India was framed by 2004 itself to achieve a target of 10 million broadband subscribers by 2010 and 20 million broadband subscribers by 2020, it could not reach the target. So the year 2007 was declared as ‘year of broadband’ in order to promote the broadband service, further NTP’12 (National Telecom Policy) was framed with the objective of “Right to Broadband” and to reach a target of 175 million subscribers by 2017 and 600 million subscribers by 2020 which includes mobile, fiber, cable broadband subscribers (Department of Telecommunications). Despite all these efforts the growth of broadband is still in the nascent stage.

In addition to the significant contribution of plans and policies towards the promotion of broadband, Ford et al., (2007) have determined that the main reason for slower growth in broadband could also be impacted by the demographic and economic conditions which were found to have 86% impact on broadband diffusion while plans and policies had just 14% of contribution.

Bazar & Bataar, found infrastructure, government policy regulations, economic development, culture, language and IT (Information Technology) penetration as some of the major determinants for diffusion of internet with in a country, Aurberic (2003) identified location (urban or rural), education and income levels as major determinants.
for XDSL service. In Korea, culture was found to have a greater impact towards broadband diffusion.

From the demographic profile of India, it could be found that the rural population which accounts for 70% is considered as one of the major constraints for diffusion of broadband within the country. Recognizing the need for rural promotion of broadband service, BSNL signed a treaty with USOF in 2009 and planned to achieve 8,88,832 wireline broadband connections which covers both the individual users and government institutions as their customers by 2014 and has also planned to establish 28,672 Kiosks by 2014 (Government Of India, 2011-2012).

Looking into the economic development, India had a very low GDP per capita of $1498 compared to Korea, France and US whose GDP per capita were greater than $25,000. This is also one of the major reasons for less broadband penetration in India. Because studies have identified that there exists a high correlation between GDP and broadband diffusion within a country (Reynolds et al., 2003).

Further Ford et al., (2007) have supported that economic and demographic factors have greater contribution towards broadband diffusion within a country through BPI (Broadband Performance Index) score. It could be evidently stated that, even though Korea leads the globe in IDI (IDI Ranking, 2011), e-commerce and e-governance but based on the BPI score it was ranked 4th with 0.003 as over performance indicator and France ranked 13th with 0.056 BPI. In US, though the growth of broadband was not up to its expectations, it ranked 14th with an underperformance score of .006 and the results signified that compared to policies, the economic and demographic factors have greater impact towards broadband diffusion. To be noted in particular, the construction of apartments was one of the advantages for greater broadband diffusion in Korea. The government has certified the buildings with broadband certifications in form of stars (Lee & Chan-Olmsted, 2004).

It is not only BSNL, but also the government and TRAI should take effective measures to promote fixed broadband service. Since promotion of broadband signifies the
e-readiness of the country by promotion of various e-activities like e-education, e-health, e-marketing, e-commerce, e-governance etc.

**Bundling:**

Broadband customers in Finland preferred to have incumbents’ service mainly due to the bundled offers offered by them. Customers prefer for bundled products mostly because broadband which is a triple/quadruple play service could be purchased as standalone product, data+voice, voice+video, data+video and also as data+voice+video+wireless. The main significance of bundled products is that the reduced cost, i.e the cost of purchasing each product/service individually is costlier than the bundled offers. One more advantage is that the customer could drop to just one service provider to get their problems solved with respect to various bundled broadband service. BSNL which is also in the process of promoting bundled offers could try to implement it at the earliest and generate revenue out of it. It could also serve as a better means to attract new customers.

**5.2.1.4 Place:**

Though retail outlets contribute significantly for the accessibility of service, the emergence of ‘always-on’ broadband connection has necessitated customers to expect high speed and consistent network support for quicker access of information and also faster and reliable customer support. Thus the web-portal plays a crucial role in promotion of broadband service. In case of AT&T, it has on-line shopping, web enabled platform for purchase of broadband related products (www.att.in). Moreover, it also provides a toll free number for its customers i.e once they get connected they could make use of toll-free numbers for billing inquiries, customer service etc.

France Telecom web portal gives complete details of major DSL service providers in France, with an added provision to check the availability of DSL service, i.e the people could just enter their area code and find whether the DSL service is available or not based on which they could select the type of broadband. In case of US, the service providers have published maps that represent the coverage area for wireless broadband and for wireline broadband; where the customers have to enter their street address into
their database, and at times on a service by service basis in order to check availability of wireline broadband connection (Columbia Telecommunications Corporation, 2010).

Even though BSNL has its own web portal for access to on-line directory, download applications, online billing; and toll-free numbers for bill details, registering complaints etc., its’ online directory should be updated at regular intervals because the database to check for availability of DSL service is not clear to the retailers, customers and sometimes for employees. BSNL could be innovative as France Telecom and AT&T, where the user could check for availability of DSL service on the website.

Overall, looking into 4Ps of BSNL, it could be observed though it is on par with other incumbent operators of selected OECD countries. BSNL should focus on giving effective devices (visible part of the product) to the end user, because ITU stated that the effectiveness of broadband could be realized only by using quality devices. It should also be further innovative in utilizing the technology completely to enhance the promotion of broadband service in the external marketing. The pricing strategies of BSNL could be stated clearly in its website like AT&T website which explains the plan in detail, i.e what are all the applications that can be used with the plan and how quickly it can download the application etc.

As it enlightens the customer in choosing the plans, the BSNL employees should also have appropriate knowledge of all the available plans, it is supported by Sasser 1976 states that organization should consider marketing to its internal customers (employees) initially and then to the external customers (cited in (Caruana & Calleya, 1998)), because, if an organization wants to have successful external marketing, it should have excellent internal marketing (Gronroos, 2000). Thus, the study tried to analyze the internal marketing and its effectiveness (internal marketing and job satisfaction) of BSNL by interviewing the employees of Pondicherry SSA who are involved in promoting landline and fixed broadband services.

5.2.2.1 Internal Marketing:

The major objective of internal marketing which emerged in 1980’s was to treat employees as internal customers (Berry, 1981), who play a crucial role during service
delivery. As their attitude and behavior have a greater influence towards the customer perception of service quality internal marketing has to be considered as a competitive weapon for organization (Berry et al., 1988).

From the experts’ interview, it was found that BSNL has not included internal marketing in an organized manner, but some of the internal marketing practices like vision, training and development, rewards and recognition were found to match with the dimensions of Foreman and Money IM (Internal Marketing) scale (1995).

With regard to vision, BSNL gives a clear picture of its vision and mission during its initial training periods. With respect to training, i.e before the arrival of webinar training, BSNL employees were organized and trained in the training centers. BSNL has 41 training centers of which 12 are RTCs (Regional Training Centers), 14 are CTTCs (Circle Telecom Training Centers) and 7 are DTTCs (District Telecom Training Centers)(BSNL). With respect to rewards, BSNL uses both monetary and non-monetary rewards for its employees.

Lin & Lin (2010) have stated, employee satisfaction measures the effectiveness of internal marketing. So the study adopted the JSS (Job Satisfaction Scale) to measure facets of job satisfaction, as its’ the most preferred scale for social service sectors with high reliability and validity. The study adopted census method to include all the employees because the main concept of internal marketing is to bring the individuals to collective and moreover studies have stated that internal marketing is not just limited only to frontline employees but includes all the employees of the organization. Based on the completed questionnaire 180 was identified as the final sample size of the employees. In order to study the relation between internal marketing and job satisfaction of the employees CCA was performed. Before CCA (Canonical Correlation Analysis), Pearson correlation was performed as suggested by (Hair et al., 2010), it was found that Pearson correlation was 0.412 which indicated a moderate association between internal marketing and job satisfaction construct. While the correlation coefficient (0.6) from the CCA represents the association between the constructs, the squared correlation co-efficient represents the explained variance of the construct, i.e the result depicted that only 38.5% variance of the construct was explained. Further, with respect to individual constructs,
out of three internal marketing dimensions only vision and development were significant and rewards was found insignificant. With respect to job satisfaction construct only communication, nature of work and promotion were significant and the rest were insignificant.

As Lovelock et al., (2004) mentioned, visions are imaginary statements which are framed for a period of 10 to 20 years in order to achieve their mission. BSNL had a clear vision, i.e “To become largest telecom Service Provider in Asia “, and mission, i.e “ To provide world class State-of-art technology telecom services to its customers on demand at competitive prices; to provide world-class telecom infrastructure in its area of operation and contribute country’s economy“ (danu75), it remains the same from the period of its establishment. Due to longer association of employees with the organization i.e 70.5% (based on years of completed service) of employees have completed a service of more than 20 years (table 3.8), it signifies that employees have a clear vision/focus of their organization.

With respect to training, it could be specifically stated that the emergence of information technology has brought a major change in imparting the knowledge and skills to human resources (employees). In the earlier days, the employees were given prior information about the training date, time and place, so that they got assembled to a common place for a day or two and got trained. Once after the emergence of IT (Information Technology), in particular broadband service, the employees were assembled in the conference room of each SSA for webinar training through video conference which focuses mainly on training technical skills. Even though employees are adapted to upcoming technologies, they have a feel that just one day program was not sufficient to clarify their doubts, due to lack of face to face interaction.

With regard to interpersonal skills, the training was provided only once to the employees throughout their service period. But in the present scenario, in addition to technical skills, employees should also be trained with inter personal skills such as personality development; communication in particular i.e interaction with superiors, co-workers, customers etc. This kind of training would enhance the customer consciousness
of the employees, because employees are not only expected to be knowledgeable but also friendly and courteous with their customers in the competitive world.

The rewards and recognitions was found to be insignificant, because the employees have a feel that earlier they were awarded with both monetary and non-monetary rewards, but in recent years they were not recognized even with appreciations which signifies the lack of motivation by the management and superiors in particular. Moreover, as it is human nature to expect their work to be praised and appreciated, the management could try and develop such a motivating factor, which was found to have a greater influence towards job satisfaction from both theory and practical perspectives.

5.2.2.2 Effectiveness of Internal Marketing - Job Satisfaction

From the CCA result it was found, out of 8 facets only 3 facets (nature of work, communication and promotion) were significant and the rest (pay, fringe benefits, co-worker, contingent rewards, operating procedures) were found to be insignificant.

Compared to other public sector employees, though BSNL employees’ pay were quite high it was found to be insignificant. The main reason for this could be cut-off of fringe benefits. Fringe benefits cover both monetary and non-monetary benefits (Spector, 1997), BSNL has offered medical insurance, LTC etc., as some of the fringe benefits to its employees, but in recent years their benefits were cut off completely in particular after their pay hike. Despite high pay, employees expect fringe benefits from the organization since it gives a feel of being associated with the organization.

Many employees feel that they were sometimes overloaded with their job due to lack of knowledge and skills about the technical oriented broadband service. With respect to operating procedure / working conditions, employees have a feel that they are not secured for their life in particular the phone mechanics who represent 56.67% of the total employees (chart 3.4) state that during rainy seasons, if the cables are damaged there are chances for accidents which could at times lead to death. The other major constraint is non-availability of cables, cable damages are due to two main reasons, one is due to soil erosion because the cables were installed 2 to 3 decades before and the other major reason is digging of road by the water supply, electricity, roadways etc., spoils the cable.
Irrespective of whether the cable is damaged either by the external or by the natural forces, the ultimate result is poor signal quality. So cables are to be replaced to improve the service quality which is not only the expectation of the external customers but also of the internal customers.

It is the nature of every human being to expect some kind of praise in form of rewards or recognitions, employees also have such an attitude who expects that their works to be honored from their co-workers, superiors and the management, because it gives them a feel of pride and satisfaction in doing their job. With respect to nature of work, it could be found that earlier employees were loaded with lot of manual work in particular the paper work for office personnel’s and field work for phone mechanics who were involved in laying cables to give new connection and to check fault. In recent years the emergence of information technology has brought a great change in the working conditions of the employees by reducing half of their work in particular for the employees involved in field works, i.e on one hand due to IT they are given a clear detail of where the problem is and it is sorted out with the help of JTO in the office, on the other hand the appointment of contract labors involved for digging and laying the cables too saves their time of work hood.

While communication refers to the communication between the superior and subordinate, with respect to BSNL it could be found more than the superior sub-ordinate relation, they have a strong employees union which passes or establishes a very good communication within the employees of the organization. While promotion is recognized as an opportunity for the development and growth of a person, it enhances the social status and also increases the responsibility (Robbins, 1993). Employees of BSNL, in particular, phone mechanics who represent more than half of the employees have already been promoted as phone mechanics from line man. They are aware that they have got less promotional opportunities due to their educational qualification and for other employees the promotional offer is based only on seniority basis. So employees have a clear idea that they have less chance for promotion.

Among the significant factors such as promotion, nature of work and communication, the organization has more chances to improve the communication, in
particular the superior to sub-ordinate communication and vice-versa which could create a feel of satisfaction. Furthermore, organizations should put considerable efforts to improvise the insignificant factors in order to improve the satisfaction level of the employees. In particular, praise and appreciation would be a motivational factor that in turn leads to increased job satisfaction. Working conditions which creates greater impact for both employees and customers during service delivery could also be improvised in terms of IT oriented customer service.

Further, from the CCA result it was found that vision, development factors of internal marketing construct was significantly related only with nature of work, communication and promotion of the job satisfaction construct. This implies that the internal marketing practices should be carried out in an organized way with expanded constructs such as selection, recruitment, training etc., in order to recruit service minded employees as suggested by Rafiq & Ahmed (2000). In addition to technical skills, the employees should also be trained to develop their inter personnel skills which would motivate the employees towards customer orientation process.

5.2.3 Interactive Marketing:

As Gronroos (2000) stated that the buyer-seller interaction could be used as the basis for marketing of an organization, interactive marketing is the marketing which establishes the relation between employees and customers. It is also referred as ‘service encounter’ or ‘moment of truth’ since this is the place, where the customers actually perceive the service and evaluate the service quality. Zeithaml et al., (1988) have stated that quality in many services is determined only during service delivery which has emerged as a key differentiator and competitive weapon for the organization (Berry et al., 1988).

Despite various service quality models SERVQUAL which measures the functional quality was considered, because it measures the customer - employee interaction and also plays a vital role in generating the five main constructs of CPQ (customer Perceived Quality) Rao (2007). In case of continuously delivering service, Oliver .R. L., (1989) has specifically mentioned, it is just sufficient to measure only the
performance. With this consideration the study adopted only the performance items of SERVQUAL because broadband is also a continuous service that operates 24×7.

As the SERVQUAL construct is an already developed construct to measure service quality, CFA (Confirmatory Factor Analysis) was carried out to determine the uni-dimensionality, convergent validity and discriminant validity of the construct. From the CFA results, it was found that the model was a good fit, since the fit indices (normed chi-square, CFI, RFI, RMSEA) were within the recommended values. To evaluate the convergent validity, item reliability, composite reliability and AVE, the thumb rule of Hair et al., (2010) was considered. It was found that the item reliability except for two items (SQ13, SQ26) were above 0.5 and hence discarding the weak loaded items the rest were considered. The item “Appearance of the employees” had lowest loading of 0.583 and “MODEM is in good working condition” had highest loading of 0.903 (table: 4.18).

Even though cronbach alpha has been tested to determine the internal consistency of all items, composite reliability was tested for CFA models since it does not assign equal weights to the items. From CFA results, it was found that the composite reliability of all items was greater than 0.7 which meets the rule of thumb criteria (Hair et al, 2010). Empathy had highest composite reliability of 0.830 and responsiveness had the lowest composite reliability of 0.75. AVE which is also used to establish the convergent validity of the constructs was found to be above 0.5 which indicates that the items explain at-least 50% variance of the construct (table 4.18). The results of item reliability, composite reliability and AVE indicate that the items of service quality represent only those constructs that it is intended to measure.

Though convergent validity is established, discriminant validity of the construct was also examined in order to establish that items of one construct do not get converged to items of other construct. As per Fornell & Larcker (1981), the discriminant validity was determined by comparing the squared correlations of the constructs with the AVE of the constructs, since all squared correlation co-efficient were less than the AVE represented in the diagonal of the matrix; it indicates that discriminant validity for the constructs exists.
While customer satisfaction is considered as a marketing tool to achieve the goal of the customer-centric organization, service quality acts as a major determinant of customer satisfaction (Angelova & Zekiri, 2011). In the competitive world, customers expect high quality service at affordable price (Malik & Chafoor, 2012). Moreover, after globalization the competitive pressure has enforced the IT and telecom companies to reduce their prices and improve their quality (Khan et al., 2012).

With respect to fixed broadband service, price fairness i.e charging reasonable price, billing accuracy, customer services were identified as major customer satisfaction determinants from various reports and studies in particular from Malaysian Telecommunications Authority, UK customer satisfaction survey, Tsou & Liao (2010) etc. In addition to satisfying customers, retaining customers plays a crucial role in highly intense competitive market, in particular for telecommunication service providers. To retain customers the organizations should first establish a long term relationship with its customers, i.e if a firm maintains a successful customer loyalty it is expected to lead to retention of customers (Li & Green). Zaim et al., (2010) have specified that an organization has to improve product/service quality to establish/maintain customer loyalty.

With this focus the proposed SEM model was developed with 11 hypothetical statements (fig: 4.7), the service quality was measured as second latent construct. From the analysis results, it was found only 4 hypothetical statements were significant and the rest were insignificant.

Service quality had significant relation with customer satisfaction, which synchronizes both with the theoretical concept and also with the results of many other studies (Agyapong, 2011; Ahmed et al., 2010; Ali et al., 2010; Cheng, 2008; Ofir, Turel and Serenko, 2005). Further based on the standard co-efficient of the service quality constructs, it was found that reliability, assurance, empathy and responsiveness were in tier 1, tangibility in tier 2 and network quality in tier 3 (fig: 4.6).

Brady & Cronin (2001) conceptualized reliability; assurance and empathy are service encounter factors/constructs, since it depicts the actual interaction between the
employees and the customers. In addition to these three factors, responsiveness was also placed in tier 1, while tangibility which refers to the physical equipments used for the promotion of the broadband service was in tier 2 and network quality which signifies the signal strength was in tier 3. In addition to all, reliability which plays a distinguishing role for service providers from its competitor’s i.e by responding to customer complaints immediately and providing reliable and consistent service was in tier 1 with highest standard co-efficient of 0.959. In addition to service quality, studies have identified price as one of the major determinants of customer satisfaction (Rahman et al., 2011; Haque et al., 2007). But, the study result found price to have an insignificant relation towards customer satisfaction which indicates that customers are not price sensitive. Though customer support and billing were also insignificant, studies (Laheem, 2012; Khuhro et al., 2011) have stated that organizations should focus on customer service in addition to price, Scott (2012) has stated that customer service must be focused in particular for fixed broadband service, since it serves as differentiating factor for telecommunication service providers from cable modem and other service providers. Ojo (2010) has identified customer service to have impact on both service quality and customer satisfaction. BSNL should focus on improving the customer service in addition to price and service quality.

Even though all the six constructs are statistically significant in explaining the service quality, the tier categorization represents a clear picture for organization by presenting them in an order of preference, which enables the managers to identify which constructs are to be improved in order to increase the service quality. The analysis implies that as reliability is one of the competitive factors, BSNL should take efforts to improve and maintain its reliability in addition to empathy, responsiveness as their primary preference because it has long term impact on customer satisfaction while responsiveness is related only for a shorter time period (Ahmed et al., 2010). Rogers et al (1994) has determined that empathy contributes significantly in reducing job tension and ultimately leads to increase in customer satisfaction. Because once customers feel that employee gives special attention and caring for them they have a feel of satisfaction.

Among the four main constructs in tier 1, BSNL should concentrate on increasing the reliability, assurance and empathy in addition to responsiveness as it would create a
feel of confidence among the customers. In particular, if the broadband complaints are cleared within the specified time without delay, it itself would increase the level of satisfaction and in turn intend to use the service for the future because broadband customers expect immediate solution for their problems.

Even though customer satisfaction is considered as the major determinant of customer loyalty, customers would wish to have a long term relationship with the service provider only if they have trust on the organization. In addition to customer satisfaction and trust, Zeithaml & Bitner (2000) have specified that service quality in telecom sectors ensures quality to establish and maintain loyal customers who are considered as profitable for the organization.

With customer loyalty as the endogenous variable, customer satisfaction, service quality, trust and customer support as exogenous variables, it was found only customer satisfaction and trust had positive and significant relation with customer loyalty. Customer satisfaction with greater co-efficient (0.641) had a greater influence on loyalty. This was found to be correlated with the study results of Akbar & Parvez (2009); Cheng et al., (2008); Henkel et al., (2006); Fornell et al., (1996), and thus customer satisfaction acts as a strong determinant of customer loyalty.

Trust which plays a crucial role in determining customer loyalty signifies that BSNL has ensured a trustworthy confidence with its customers which matches with study result of John, (2011). Compared to various trust influencing factors, though billing has no significant relation, accurate billing is expected to build trust in the minds of customers in the competitive broadband environment.

While service quality is considered as a key for competitiveness and in particular high service quality found to be translated in to customer loyalty (Boulding et al., 1993), from the study result it was found that the service quality has no direct effect on customer loyalty but has an indirect effect on customer loyalty with customer satisfaction as the mediating variable. It matched with the study results of Ali et al., (2010); Akbar & Parvez (2009). With respect to broadband service, it matched with broadband service in Hong
Kong Telecom Industry by Cheng et al., (2008), where service quality did not have direct effect on customer loyalty.

Annual review of broadband commission (2005) has stated that, for any new telecom service, customer service should be recognized as the competitive tool for telecom service providers. In particular, to differentiate from cable and other broadband service providers, because in the “always-on” broadband connection which has become an integral part of human life due to wide use of various e-applications and programs. Even if the customer gets disconnected even for few seconds he/she feels discomfort and on repeated problems they get a feel of dissatisfaction. Hence they immediately seek the help of the customer service to get the problem solved, but to solve the problems related to highly technical broadband service the employees are to be knowledgeable and also courteous to help customers. From the study result, it was found that customer support was insignificant towards both customer satisfaction and customer loyalty.

It could be mainly because the customer support employees are not recruited through BSNL, they are recruited as call-center employees through outsourcing. They don’t feel that BSNL is their organization and it is one of the major reasons for the insignificant relationship and it was also the opinion of customer support by the internal customers of BSNL. In case of AT&T, Rick Linder financial officer, has stated they have focused on call-centers to sell their service (Gubbins, 2009) (connected planet online.com) where the call center employees were recruited through outsourcing. So, BSNL should focus on to improvise customer service in order to be differentiated from its competitors.

In today’s scenario, any organization in general and telecom organizations in particular are in a position to retain their customers (Jhoshi et al., 2011), where customer satisfaction, quality of service are considered as major determinants of customer loyalty. BSNL which has to retain its customers should take keen efforts to establish loyal customer base by satisfying the needs and wants of the customers. It should also improve the customer perception of service quality, as it is considered as critical dimension for competitiveness (Lewis & Mitchell, 1989).
While the SEM results depicted that, customer satisfaction had greater influence on customer loyalty, the study further tried to investigate how much percentage of satisfied customers were loyal by using the customer satisfaction - customer loyalty matrix which was used by Gerpott et al., (2001) in their study to measure customer loyalty for mobile telecom in Germany.

From the obtained 2x2 matrix, the first quadrant represented the impressed customers, the second quadrant represented optimistic customers, the third the disappointed customers and fourth the pessimistic customers. From the result, it was found the percentage of disappointed customers were more than 60%, which was greater than the percentage of impressed customers (>30%). It clearly represents that, BSNL has to reduce the percentage of disappointed customers which signifies its weaker position in holding the loyal customers. This could be improved only by offering high quality service at reasonable cost.

So far the study focused only the internal marketing and interactive marketing and its effectiveness separately. But the actual relationship underlies only in the interaction between the employees and customers of the organization. Even though studies have found internal marketing has greater impact in increasing the service quality delivered by the employees. The study focused on to determine the job satisfaction towards customer perception of service quality. Since it is globally proven fact that only satisfied employees could deliver quality services to its customers (Rao, 2007).

In order to analyze the above relation, the individual employees and customers were grouped based on the operating area i.e telephone Exchange wise, as a result 22 samples were obtained. Due to limited sample size the study tried to determine the correlation between the variables. From the analysis it was found there was only a slight positive correlation which was insignificant.

The major reason for this was due to insignificant job satisfaction factors which had greater impact towards the behavior and attitude of the employees towards service delivery. In order to improvise it the internal marketing practices of BSNL could be put forth in an organized manner and also be incorporated by the interaction with human
resource department and marketing department because internal marketing is not limited to just one department.

In addition to internal marketing practices the job satisfaction of employees could also be influenced by the demographic profile of the employees. From the sample it was found 62.2% of employees were above the age of 50 years, 65% have not completed or just had their school education, 38.3% of employees have more than 30 years of completed service. The age of the employees and education level of the employees also could be a major barrier for employees to have complete understanding about the service.

This could serve as major constraint because it is not only the broadband customers should be aware of the service, but also the employees should be aware of it. Since they play a major role by interacting with the customers and are also considered as the representatives of the organization. BSNL should measure employee satisfaction at regular intervals if the organization wants to improve its service quality which is considered as key competitive tool. As Rafiq & Ahmed (2000) stated that employees should be motivated to deliver consistent service to its customers, BSNL should reward its employees for their work which would motivate the employees and give a feel of satisfaction.

As most of the employees of BSNL are in the retirement stage, BSNL could implement its internal marketing strategies in an organized way not only to recruit service minded employees but also train already existing employees towards customer oriented service. So it should take measures not only to measure the satisfaction of customers but also to measure the satisfaction of employees at regular intervals. It should also try to provide reliable service with friendly, courteous and knowledgeable employees which would ensure to reduce the percentage of dissatisfied customers. Furthermore it should be innovative in promoting the service and also update its web portal that provides its users with easy access to information as done by AT&T and France Telecom.

5.2.4 Broadband Utilization:

Globally customers prefer to have broadband service for varied applications such as email, chat, social media, on-line trade, on-line marketing, information search,
education, VoIP and so on. Even though the need for application varies from person to person, but on the whole, the usage of broadband in a country is measured based on the major usage of the service. Korean users use internet connection mainly for information search, send or receive email, to play games and to be entertained. US internet users use it for email, information, news/weather, sports/games (Lee & Chan-Olmsted, 2004). In India on-line video, on-line music downloads; on-line games are some of the major applications used by Indian users (india-bb-sub-base.htm). This has driven the researcher to identify the major applications that necessitated the need for broadband service by BSNL customers in Pondicherry SSA. Based on garrett ranking scores, it was found education ranked first, information search second, email third, social media fourth, downloading music fifth, online games sixth and VoIP 7th (table 4.25).

Among all factors, on-line gaming was found to be one of the most popularly used application by Indian users, which was used as killer application for broadband promotion in Korea, Hong Kong and China (Reynolds et al., 2003). VoIP is also considered as one of the major application for promotion of fixed broadband service since it accounted for 155 million VoIP subscribers globally as on March 2013. Six countries (US, Japan, France, South Korea, Germany and China) alone have contributed to 80% of the total VoIP subscriber base. While US lead in terms of subscriber base with 34.2 million subscribers, France had 22.48 million subscribers and South Korea had 12.54 million subscribers. In terms of penetration France ranked first because 96.8% of its fixed broadband subscribers were VoIP subscribers and in Korea VoIP subscriber base represented 68% of fixed broadband subscribers (point topic.com).

While the killer applications have been identified as one of the marketing strategies to promote broadband service like on-line games in South Korea; VoIP in France, Japan; BSNL which is also in the process of promoting on-line games could be faster in implementing it in the present competitive broadband world.

5.2.5 Demographic Factors:

Studies state that service quality of DSL service varies as the distance varies from telecom service provider (i.e telephone exchange) to the customer premises. The study
aimed to analyze the above statement, from the result, it was found there was no significant difference between service quality and distance. Because, majority of the customers i.e 60% of them were located within the distance of 2Km and the rest were within the distance of 5Km range which is the specified limit for DSL service with reduced latency drop. It is mainly because all the exchanges in Pondicherry SSA were located within the range of 5Km radius. But we cannot assume the same scenario for all the 38000 exchanges in the country. Because as mentioned earlier, that rural dominates the urban, there are chances for wide variations in distance between the exchanges within the same SSA, which significantly implies that distance between the customer premises and the telephone exchanges varies drastically within India. But in case of Korea, it was one of the significant factors for DSL promotion in Korea because most of them were located within the distance of 2.5 Kms.

While Ford et al., (2007) have identified age and income as the potential determinants for broadband subscription, the study found that, there exists significant difference between age and education towards customer satisfaction. BSNL could make use of it to attract customers of varied age by promoting attractive applications.

Apart from age, income also plays a significant role towards broadband subscription, since it is costlier than wireline and wireless services; studies have highlighted income as major factor for broadband diffusion with in a country (Choudrie & Dwivedi, 2005; Kim et al., 2003; Aurberic, 2003, George et al, 2009). More over as the price for broadband service consumes a part of disposable income, from the web source global disparity, it was found price for broadband as percentage of GNI per capita, was 0.5% in US, 1.02 % in France, 1.4% in South Korea, and 5.84% in India. In some countries the price for broadband even exceeds too high as 3891% which is the price paid by Central African countries as proportion of their GNI per capita to avail a broadband service. Further, GDP was found to have a greater association towards broadband diffusion. So it is not only for BSNL, but for all service providers in general to consider the GNI per capita and GDP of the country in order to make the broadband service as an affordable service.
5.3 CONCLUSION:

Broadband, more than an infrastructure, has brought change in the nature and function of global markets by promoting various e-activities like e-education, e-governance, e-health, e-commerce, e-marketing etc. Broadband is not limited to only one technology or one service provider. It has created a tough competitive environment for firms to survive and retain their customers who are valued/considered as the greatest assets for the organizations. DSL identified as the leading broadband technology across the globe and in the country, signifies BSNL to make use of the opportunity i.e to make use of its wide wireline infrastructure to promote DSL service which is considered to generate long term opportunity. It should retain its broadband customers by establishing loyal customer base, which depends on customer satisfaction and trust of the customers towards the organization. In addition to all these factors, quality of service which has emerged as major competitive factor for firms to differentiate them in highly competitive broadband market and position them effectively. Studies have stated that only satisfied employees could deliver high quality service. As 3M’s of service triangle one of the marketing strategies which includes the external marketing, internal marketing and interactive marketing found apt for the study was analyzed.

With respect to external marketing, 4P’s of BSNL (DSL service) was compared with selected countries incumbent operators. It was found that BSNL was on par in terms of product and pricing strategies, but it requires effective promotional programs and also needs to upgrade its web portal to meet the end-user demand. More over though there are wide range of pricing strategies which leads to confusion while framing the pricing strategies, BSNL should give a clear description about the pricing and what kind of applications could be used under that plan, in case if the user wishes for some other application the employees should be capable of explaining about that to their customers. This could be achieved only if the product is first marketed to their employees and that could be achieved by using internal marketing tools such as training and motivating the employees towards customer-centric process which in turn leads to customer satisfaction. While globally it has been found that lack of skills as one of the major barrier for diffusion of ICT (Information Communication Technology) among the poor countries
SATRC (2012), the study also identified factors based on level of education of the employees. BSNL should take considerable efforts to motivate the employees towards customer service. As internal marketing of BSNL is in an unorganized form, the organization should take efforts to implement it with the coordination of HR and marketing department professionals, because internal marketing is considered as a prerequisite for external marketing. More over the top management support and assistance is required for effective internal marketing in BSNL which would ultimately result in effective job satisfaction of the employees.

Only if the firms adopt effective internal marketing and external marketing, its interactive marketing would be effective. Even though service quality determinants were found to be significant, BSNL should keep on measuring its service quality in order to know its position in the competitive market and also know its strengths and weakness which could be enhanced by improving the internal service quality of employees, because their attitudes and behaviors has greater influence on customer perception of service quality. In addition to service quality, BSNL should also take proper measures to improvise the billing and customer support factors of broadband service. Especially, in the fast developing global scenario, providing proper assistance in order to arrive at a solution to a problem surely builds a positive opinion in the minds of the customers. This is one of the major factors where the public sector lags behind the private sector i.e continuing the relationship with the customers in terms of service after sales. Similarly, customers expect delivery of bills in time with clearly stated charge details. Even though BSNL takes care by giving a voice alert through the landline number, there is not much influence of billing on customer satisfaction of BSNL broadband service.

BSNL to establish a long term relationship with its fixed broadband customers needs to incorporate the marketing strategies by clearly understanding the service triangle. In particular the internal marketing which is considered by many service sector organizations as competitive tool to differentiate them from their competitors, BSNL also should consider and adopt proper measures to implement it which ultimately not only leads to effective external marketing and interactive marketing but also promotes the success for the organization. Despite wide spread of applications; BSNL could make use
of online downloading music / games as the killer application program to promote broadband. More than as a beneficiary factor for BSNL, broadband (DSL) due to its significant contribution towards promotion of various e-activities, plays a significant role in indicating the e-readiness of the country. BSNL could achieve its objectives in the near future, if it focuses and adopts market orientated strategies in promoting its services.

As any study has its own limitations which stands as scope for future research, this study also had its own limitations that provided space for future research which is mentioned below.

5.4: Scope for Further Research:

As broadband is a multi-technology service and the study focused only on the DSL service, it ensures a future path to carry research with respect to other technologies such as fiber broadband, cable modem, fiber +DSL (hybrid technology of fiber) either as individual study or as a comparative study. With respect to service providers, the study focused only on the wireline incumbent operator (BSNL), so that a future research perspective can be there based on a comparative study across various service providers in the same technology or different technologies. As the study considered only one SSA of BSNL, it paves the way for future scope of research by including few more SSAs from BSNL based on four major regions or individual circles.