Chapter III

Conceptual Framework of Broadband & Wireless Telecom Services
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CONCEPTUAL FRAMEWORK OF BROADBAND & WIRELESS TELECOM SERVICES

3.1 INTRODUCTION

The word telecommunication was adopted from the Spanish word Telecom. It is a compound of the Greek prefix Tele - (τηλε-), meaning "distant," and the Latin communicate, meaning "to share." A basic telecommunication system consists of three primary units that are constantly present in some phase. A transmitter takes information and converts it into a signal. A transmission medium relies mainly on physical channel and free space which extends the signal. A receiver takes the signal from the channel and changes it back into useable data.

3.2 SOCIETY AND TELECOMMUNICATION

3.2.1 Economic Impact-Microeconomics

Telecommunication has a significant social, cultural and economic impact on modern society. On the Micro economic scale, societies have used telecommunications to help establish global business empires. In urban centers throughout the world, home owners use their telephones to set up and set up a mixture of house services ranging from pizza deliveries to electricians. Even relatively poor communities have been taken down to use telecommunication to their vantage. In Bangladesh's Narshing district, isolated villagers use cellular telephones to address directly to wholesalers and arrange a more honest monetary
value for their commodities. In Cote d’Ivoire, coffee growers share mobile phones to follow hourly variations in coffee prices and sell at the best cost. Because of the economic benefits of good telecommunication infrastructure, there is increasing concern about the inequitable access to telecommunication services amongst various nations of the universe—this is known as the digital divide.

3.3 SOCIAL IMPACT ASSESSMENT

Telecommunication has played a significant role in social relationships. However, devices like the telephone system were originally advertised with an accent on the pragmatic proportions of the device (such as the ability to take business or order home services) as opposed to the social dimensions. It was not until the late 1920s and 1930s that the social dimensions of the device became a prominent theme in telephone advertisements. New promotions started appealing to consumers' emotions, emphasizing the importance of social conversations and staying connected to family and friends. Since then the role that telecommunications has played in social relations has become more and more significant. In recent years, the popularity of social networking websites has increased dramatically. These websites permit users to communicate with each other as well as post photographs, events and profiles for others to pick up. The profiles can list a person's age, interests, sexual preference and relationship status. In this way, these websites can play a substantial part in everything from organizing social engagements to suit. Prior to social networking websites, technologies like short message service (SMS) and the telephone also had a significant impact on social interactions.

3.3.1 Other Impacts

In ethnic terms, telecommunication has increased the public's power to access music and cinema. With video, masses can view films they have not
experienced before in their own place without having to go to the video store or Movie Theater. With radio and the Internet, people can listen to music that they have not found out before without having to travel to the music shop.

### 3.4 TELECOMMUNICATION & GOVERNMENT

Telecommunications has developed a basic infrastructure like electricity, roads, water, etc. and has also emerged as one of the vital elements of economic growth needed for overall socioeconomic growth of the nation. "The National Optical Fiber Network Program (NOFNP) of 7.5 lakhs kms, networking 2.5lakh villages is being further speeded up by allowing willing states to guarantee its execution, of reimbursement of monetary value as fixed by the Department of Telecommunications.” As anticipated, the government has induced a provision to impose ‘Swatch Bharat Cess’ on certain or all taxable services. Though at that place is no clarity on the amount or date of carrying out. If carried out, it will be negative for the sector.

### 3.5 BROADBAND

Wireless broadband is a technology that provides high-speed wireless Internet access or computer networking access over a spacious field. Increase in Broadband connectivity is being seen as an integral driver of improved socioeconomic performance. Broadband services empower masses and leave individuals to access new career and educational chances, assist businesses reach new markets and better efficiency and enhance the Government’s capacity to save critical services like health, banking and commerce to all of its citizens. There were 60.87 million Broadband subscribers in the country as of March 2014.
3.5.1 Concept of the Broadband & Wireless Telecom Services

Robert (2005) has defined broadband as any technology – currently, cable, telephone-based (DSL), wireless, or through electric power lines – that permits users to communicate at rates substantially faster than the older generation dial-up services, and unlike dial-up services, is always on.

3.6 DEFINITION OF BROADBAND

"A type of data transmission in which a single medium (wire) can carry several channels at once." Cable TV, for example, uses broadband transmission. In contrast, broadband transmission allows only one sign at a time. Most communications between information processing systems, including the majority of local-area networks, use broadband communications. The US Federal Communications Commission when referring to the internet regards broadband as 200kbps or more in at least one way.

A more technical meaning reads: 'Broadband refers to a transmission speed of 1.54 million chips per search or more using a single medium, such as a wire, that has two or more channels carrying information at one time. Broadband refers to bandwidth and is also recognized as 'throughput rate.' It is contrasted with baseband transmission, which sends only one sign between two devices, as between a computer and a peripheral, and in contrast to narrowband, which transmits speeds more slowly, at a speed usually between 64 kilobits and up to 1.54 million chips per minute.
3.6.1 Types of Broadband

3.6.1.1 DSL Broadband

Digital Subscriber Line (DSL) is a technology that delivers broadband over your phone line to be used in the house or office. With DSL technology, large volumes of information are transported over a copper cable at rapid speeds.

3.6.1.2 ADSL Broadband

Asymmetric Digital Subscriber Line (ADSL) is a technology similar to the DSL technology. With ADSL, information is downloaded more rapidly than it is uploaded. ADSL is particularly useful for homes and businesses as it can download web pages and files at fast speeds. ADSL2 and ADSL2+ are new technologies proposed by some providers offering speed up to 24Mbps.

3.6.1.3 Symmetric Broadband (SDSL)

Symmetric broadband (SDSL) is a technology similar to ADSL broadband. SDSL broadband downloads information at the same velocity as it uploads data. Whereas ADSL broadband downloads the information faster than it uploads it. This case of broadband needs an additional phone line. SDSL broadband is particularly suited for businesses that ship large volumes of data.

3.6.1.4 Cable Broadband

There are various ways in which broadband can be surrendered to our PC; this character of broadband is delivered through a transmission line. Cable companies also offer television and telephone packages as well as broadband Internet services. Cable companies provide broadband, television or phone packages.
to about 45% of homes and businesses in the UK. We can only get cable broadband if a company has cabled our street.

3.6.1.5 Satellite Broadband

There are various ways in which broadband can be surrendered to our PC, PC; this character of broadband is delivered through a satellite. To get satellite broadband we must accept a dish antenna, and can be practiced virtually everywhere in India.

There are 2 types of satellite services:

- One-way satellite services download information via satellite and upload information via a telephone or IDSN line.

- Two-way satellite services download and upload data via satellite. This offers an even higher bandwidth and a faster focal ratio.

Satellite transmission may be affected by weather conditions. The price of establishing and running satellite broadband can be rather expensive compared with other characters of broadband. Satellite broadband generally has rather high response time (ping times) compared to other broadband, and thus is unsuitable for certain types of Internet Access such as online play.

3.6.1.6 Wireless Broadband

Wireless broadband is one of the ways in which broadband can be surrendered to our PC. This case of broadband needs an antenna to be installed to get tied to the Internet. Wireless broadband is especially suited for disseminating information between buildings and for places where access to ADSL or cable broadband is unavailable.
3.7 DEFINITION OF WIRELESS TELECOM SERVICE

Wi-Fi is a trade name for a wireless local area network (WLAN). It is a set of communication protocols to standardize the way that wireless devices, such as cellular telephones and radio transceivers. Wi-Fi networks are built using one or more wireless routers called access points. "Ad hoc" computer to computer Wi-Fi networks are also possible. The Wi-Fi network is connected to the larger Internet using DSL, cable modem, and other Internet access technologies.

3.7.1 Type of Wireless Telecom Services

3.7.1.1 Wireless ISP

Wireless Internet service providers typically employ low-cost IEEE 802.11. Wi-Fi radio systems to link up remote locations over great distances (Long-range Wi-Fi), but may use other higher-power radio communications systems as well.

3.7.1.2 Wi-MAX

Worldwide Interoperability for Microwave Access (Wi-MAX) is a set of interoperable implementations of the IEEE 802.16 family of wireless-network standards certified by the Wi-MAX Forum. Wi-MAX enables "the delivery of last mile wireless broadband access as an alternative to cable and DSL.

3.7.1.3 Broadband & wireless services’ Scenario in Corporate India

The contribution to the growth of national output in the form of labor productivity improvement of existing workforce due to ubiquitous broadband deployment in India is estimated at an approximate 50bn USD for the period 2010-
2020 (Source: Deptt of IT and Deptt of Telecom Ministry of Communication & Information Technology, Gov. of India and CII). In other words, high speed access to information and web-based communication can cause a vast deviation in our enterprise work force efficiency, which in turn affects your business economics. But today, simply having broadband connectivity is not plenty.

3.8 CONCEPTUAL FRAMEWORK

A conceptual framework for studying subscribers’ satisfaction of broadband and wireless telecom services in Chennai city is developed using subscribers’ satisfaction with purchase attributes concepts. The framework aims to act as a step for determining how Subscribers satisfaction influences purchase attributes like information search, pre purchase decision and purchase accessibility, stability of purchase and post purchase behaviour. To this end, subscribers’ satisfaction is modeled as an influence on purchase attributes: based on research framework, the inquiry method is planned to distinguish the influence of pre purchase behaviour, purchase decision, purchase accessibility, suitability of purchase and post purchase behaviour of telecom broadband & wireless telecom services as the independent variables and subscribers’ satisfaction as the dependent variable. This work tests the influence of different dimensions of purchase attributes on the subscribers’ feelings of gratification and its influence on broadband services. Subscribers’ satisfaction is the buzzword today, once here everyone using this subscribers’ satisfaction is affected by the importance placed by the subscribers on each of the attitudes of the product/ service. The subscribers’ satisfaction measure allows an organization to understand the key drivers that create satisfaction or dissatisfaction; and what is really driving their satisfaction during a service experience. Subscribers’ satisfaction is the state of mind that subscribers have about a company when their expectations have been met or exceeded over the lifetime of
the product or service (Kevin Cacioppo, 1995). It is also a feeling or attitude of a subscriber towards a product or service after it has been used. According to Oliver (1980), satisfaction appears to mediate changes between pre-exposure and post-exposure attitudinal components. It is a major outcome of marketing activity whereby it serves as a link between the various stages of consumer buying behaviour (Jamal & Nasser, 2002). When subscribers pay money to buy a service he has some minimum expectations from the transaction. These expectations for the purchase have to be met substantially, if not entirely for the subscribers to become a loyal subscriber of the service (Aneja 1993). These expectations are fulfilled of a promise- quality, fair price, availability, after sale services, complaints handling process, information, and variety etc. the subscribers are demanding high quality services and low prices or charges. Better quality for the same cost is the motto of the subscribers. Sometimes they are prepared to overlook the inconveniences also to avail better services at a low cost. Various empirical researches show that there is a significant and positive relationship in service quality and subscribers’ satisfaction. Berry (1990) mentioned that there are ten 'Quality Values' which influence satisfaction behaviour, i.e. Quality, Value, Timeliness, Efficiency, Ease of Access, Environment, Inter-departmental Teamwork, Front line Service Behaviour, Commitment to the Subscribers and Innovation. Rueangthanakiet Pairot, (2008) defined subscribers’ satisfaction as the company's ability to fulfill the business, emotional, and psychological needs of its subscribers. However, subscribers have different levels of satisfaction as they have different attitudes and experiences as perceived from the company.

3.8.1 Service Quality

Service quality is one of the primary variables which impact the Indian mobile subscribers. Service quality is associated with various factors which affects
the relationship of telecom companies with subscribers. Firstly, as service is an execution that can't be tallied, measured and stocked, it is immaterial. The elusive way of service makes it troublesome for the telecom service provider to dissect, how the subscriber would see and assess quality. Also, heterogeneity of service makes it not the same as subscriber to subscriber and from supplier to supplier. It can't be guaranteed that execution of service faculty would be steady for all subscribers. Thirdly, the attributes of intertwined state underline that creation and utilization of service happens at the same time. Quality in service can't be designed in the plant, yet it happens amid association between the service supplier and the customer. Service conveyance process and subscribers’ cooperation in the process are key determinants to nature of service. In different words, subscribers choose it intuitively rather than by a goal judgment. These requirements can make a quality service which involves relation between expectation of the subscriber and the performance of the service. If the telecom company knows how subscriber evaluates a service then they would influence the decision of subscriber by providing better services. Here both subscriber and telecom services played a vital role in providing a quality service

3.8.2 Behaviour of Subscribers’ towards Services

Mobile telecommunication service has grown fast in providing multiple services to their subscribers. Since the services are growing in rapid manner, services provided to the subscriber should be flawless. This can be done by providing a better customer relationship and thereby avoiding negative feedbacks of subscribers. Satisfaction of customers can intimately provide a lasting relationship and profit to the organization. Behaviour of a subscriber can be analyzed using various factors and many criteria’s, but services which are rendered through different technologies may frighten or demotivates the customer who in turn can
bring a detachment between this subscriber and telecom service. This relationship or the behaviour can be triggered through many ways, one is providing an active approach and another approach is influencing the subscriber based on his/her profile. Such that the subscribers make a better perception in getting a telecom service and to make the subscriber to be stable in their mobile network.

3.8.3 Dominance of Subscriber

Since the subscribers are the asset to a telecom company, they need to take care of better relationship with their subscribers in providing value and profit to the organization. This factor plays a vital role for telecom organization in managing both service and the subscriber in order to attain success in their business. Here the at most concern is that the organization has to take care of the dominant relationship of their subscribers, because they are the substantial part in improving the business of the telecom circle. This dominance relationship can be suppressed or the subscribers can be satisfied based on the services and quality that is been offered by the telecom company which considers all the constraints like physiological factor, purchasing factors, individual profile and their attitude towards betterment of a service.

When telecom sectors provide a new service to the subscribers, they should concentrate not only on quality and other factors rather they need to fulfill the objectives of the subscribers provided that they ensure better service for longer period. Also they should focus on what actually customer needs that service, his/her necessity towards that service and fulfillment of that service in serving the subscriber.
3.9 SUBSCRIBERS’ BEHAVIOURAL FACTORS

To study the relationships between the subscribers' preferences, purchase decision, product usage and subscribers loyalty. The study explains that subscribers’ satisfaction and image directly influence subscribers’ loyalty. Factors such as innovation, promotion, usage and purchase decision and subscribers’ satisfaction have a direct impact on the telecom broadband services. Factors such as reliability, quality of service, cost/value, and attributions have a direct impact on subscribers’ satisfaction. Subscribers’ perception and satisfaction will lead to too subscribers’ loyalty dimensions: attitudinal and behavioural that will result in subscribers’ intention to recommend intention to have the purchase decision of the telecom services.

In Oliver (1997, p. 13), the following definition has been proposed as being consistent with the conceptual and empirical evidence to date: Satisfaction is the consumer’s fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is provided) a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment. A company has to ensure that in every aspect with their dealings with the subscribers, whether it is on at order time, delivery or just simple communication, they must guarantee that they understand the needs of the subscribers and how those needs can be met.

This chapter entertains the general field of consumer (subscribers) satisfaction research in a manner expanding upon more general treatises. Whereas the field has been studied from many perspectives, the most common appearing in the areas of subscribers’ satisfaction surveys and subscribers’ satisfaction strategy, an alternative approach will be proposed. Most typically, works Brand value.
Loyalty is often measured as a combination of measures including overall satisfaction, likelihood of repurchase, and likelihood of recommending the brand to a friend.

3.9.1 Series of Attribute Satisfaction Measurements (Affective and Cognitive)

Subscribers’ satisfaction is influenced by the perceived quality of product and service attributes, and is moderated by expectations of the product or service. The researcher must define and develop measures for each attribute that is important for subscribers’ satisfaction. Consumer attitudes toward a product develop as a result of product information or any experience with the product, whether perceived or real.

Cognition refers to judgment: the product was useful (or not useful); fit the situation (or did not fit); exceeded the requirements of the problem/situation (or did not exceed); or was an important part of the product experience (or was unimportant).

Judgments are often specific to the intended use application and use occasion for which the product is purchased, regardless if that use is correct or incorrect. Affect and satisfaction are closely related concepts. The distinction is that satisfaction is “past experience” and represents the emotional effect produced by the product’s quality or value.

3.9.2 Intentions to Repurchase Measurements (Behavioural Measures)

Behavioural measures also reflect the consumer’s past experience with subscribers’ service representatives. Satisfaction can influence other post-purchase/post-experience actions like communicating to others through word of mouth and social networks. Additional post-experience actions might reflect
heightened levels of product involvement that in turn result in increased search for the product or information, reduced trial of alternative products, and even changes in preferences for shopping locations and choice behaviour.

3.10 INTER-DISCIPLINARITY OF CONSUMER RESEARCH

Different research disciplines diverge in their presuppositions about the human nature, factors influencing consumer behaviour, market response, etc. Therefore, they naturally employ different research approaches. However, despite that seemingly insurmountable abyss between disciplines, we see that many research topics and methods overlap, and that there is no clear-cut line between different domains of consumer research. Many consumption-related issues are being increasingly addressed from interdisciplinary or multidisciplinary perspectives.

Many interdisciplinary concepts and factors are of interest for research on consumer satisfaction with eco-efficient services and PSS. Contrary to the suggestions from many traditional neoclassical theories, consumption patterns are much more flexible and prone to various influences. Today consumer behaviour is increasingly dynamic as the choice of alternatives increases with the growth of global markets. The complexity of the decision-making process and a large number of influencing factors suggest that changing consumer behaviour towards more sustainable consumption is a challenging process, which requires level coordination of individual and societal.

3.11 SUBSCRIBERS’ SATISFACTION MODELS

Companies try to maintain their loyalty with their subscribers by improving product and service quality. As a result, in the last decade, many national indices have been developed in order to measure consumer satisfaction across a
wide range of organizations. Thus, at the national level, the Customer Satisfaction Index (CSI) is used to measure companies and organizations how they satisfy subscribers’ needs. The CSI’s model can be also used for comparing services and products within an industry. Most countries have set their own subscribers’ satisfaction indices to measure subscribers’ satisfaction and the business performance of companies and organizations.

3.12 SUBSCRIBERS’ PERCEPTION

Perception is an opinion about something viewed and assessed and it varies from subscribers for subscribers as every subscriber has different beliefs towards certain services and products that play an important role in determining subscribers’ satisfaction. Subscribers’ satisfaction is determined by the subscribers’ perceptions and expectations of the quality of the products and services. In many cases, subscribers’ perception is subjective, but it provides some useful insights for organizations to develop their marketing strategies. Providing high level of quality service has become the selling point to attract subscribers’ attention and is the most important driver that leads to satisfaction. Therefore, subscribers’ perception and subscribers’ satisfaction are very closely linked together, because if the perceived service is close to subscribers’ expectations it leads to satisfaction. Satisfied subscribers’ provide recommendations; maintain loyalty towards the company and subscribers in turn are more likely to pay price premiums (Reich held, 1996).

3.13 SUBSCRIBERS’ LOYALTY

Subscribers’ loyalty is a crucial factor in companies’ growth and their performance. Loyalty is linked to the repeat business. Thus, a subscriber is loyal when he is frequently repurchasing a product or service from a particular provider. Oliver defines loyalty as “A deeply held commitment to re-buy or re-patronize a
preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behaviour” (cited by Kotler, 2000). The perceived value of the product and the service affects subscribers’ judgment about his/her satisfaction or loyalty to the product or the service. The significance of subscribers’ loyalty is that it is closely related to the company’s continued survival and to strong future growth. Subscribers that are very satisfied with a company are very likely to remain with that company that leads to future revenue for the company. It is now a widely accepted business theory that subscriber retention optimizes profitability; the cost of acquiring new subscribers is higher than the cost of retaining existing subscribers. Therefore, the aim of a service company is to satisfy their subscribers in order to stimulate them to retain and to repeat their service purchase.

3.14 PURCHASE STABILITY (SUBSCRIBERS’ UTILITY)

Subscribers’ retention is the activity that a selling organization undertakes in order to reduce subscribers’ defections. Successful subscriber retention starts with the first contact an organization has with subscribers and continues throughout the entire lifetime of a relationship.

3.15 SERVICE

Service industries are playing an increasingly important role in the overall economies of the countries of developing countries. The 21st century is considered to be as the service industry. Services include all economic activities which are intangible, not physically apparent like products, which provide value to the subscribers. Service has become very crucial in all business industries due to globalization and the IT developments. Services are now seen almost in every part of our life, starting from the most essential demands, like eating to other
entertainment activities, such as: sport, travelling, etc. Service is not bound to only service based businesses, like: banks, telecommunications, hotels, restaurants, and beauty salons, but it is found on all companies' strategic tools for gaining a competitive advantage. Now a day’s products heavily rely on its services to acquire competitive advantage, and to satisfy subscribers’ needs.

3.16 CONCLUSION

It this chapter, attempts were made to cover general hypothetical establishments under which this study can be molded along with exact study. It has covered all the points to assemble appropriate data to improve subscribers’ relationship with a telecom organization. These theories have covered from various journals over varying periods of time which served to incorporate the old with new hypothetical idea in the study. These theories have covered aspects like subscriber telecom service relationship, subscribers’ expectation towards a service, subscribers’ behaviour, subscriber longing towards a service and better service provided by telecommunication companies.