

CHAPTER II

Indian Telecommunication Services Market: The Transitions

With the independence of the country and consolidation of democratic governance and centralized industrial planning, the telecommunication services sector became characterized by seller's market where government monopoly¹ existed. With Federal Integration Act of 1950, the government monopoly over the telecommunication in the independent India assumed the status of a legal monopoly, which was a continuation of monopoly practices of the East India Company and followed by the British Crown. India followed the monopoly practices of the predecessors with certain modifications as needed to suit the special circumstances of the independent India.

The Indian telecommunication services market, as the government was the only seller, was characterized by many of the features of a monopoly as discussed in the previous chapter with some exceptions and notably the first one, i.e. profit maximization. From the beginning of Indian telecom it was not run on a commercial basis as a profit - oriented venture, rather on welfare lines. Profit was not the motto of the communication services industry. It is evidenced by the declaration in the annual report of the department for 1931 that said "It is the accepted policy of the Government that the department should be so administered that there should be neither any substantial profit nor any substantial loss on its working under normal conditions..... While the department is commonly spoken of as a 'commercial' one and though as far as possible it is guided by the commercial considerations in the regulation of its business, it must be realised that in many directions it is debarred from observing strict business principles. Many of the purposes which it is required to serve are non-remunerativethe department is bound by a large volume of statutory and other rules, doubtless necessary for the

regulation of a public service, but which in the aggregate involve many restrictions of a kind unknown to private commercial concerns.²”. In spite of such statements, the government was always looking forward to augment its revenue, by increasing the share from the telecommunication services sector³. Therefore, it may be argued that the government was behaving like a monopolist.

Transitions of Market Structure in India

As the Government of India was constitutionally and legally vest with monopoly powers over telecommunication, it provided the communication services as a monopoly entity. Gradually changes set in from pure monopoly over entire India as a single unit to geographical monopolies (DoT & MTNL) and product/service segment monopolies (VSNL) and thereafter to Duopoly, Oligopoly and to Competition. Now again, it has come back to ‘bridled competition’ among limited number of players (i.e. Oligopoly). It is already discussed in the previous chapter that the market structure altered continuously from one form to another. After the issue of license to private companies in four metros(Delhi, Mumbai, Kolkata and Chennai) for installing and running cellular services the market structure of Cellular Services changed from monopoly to duopoly and to oligopoly and to competition and thereafter back to oligopoly.

It is evident from the forgoing discussion of analysis that a mere chronological presentation of unfolding events would not bring out the changes in the market structure of the telecommunication segment effectively. It would just be another historical discourse often seen in literature. Further, in fact the Indian telecommunication services sector was geographically bifurcated into circles (separate license areas) and interestingly the policy makers promoted different market structures simultaneously across these geographical segments. Another, distinguishing feature of the telecommunication market in India is that it is experimented product wise. Certain products of tele-access continued to be under a monopoly market structure whereas for other

products the government followed a policy of calibrated competition progressively from duopoly to oligopoly etc. This situation is proved by the following facts:

- (a) The Telegraph Act, 1854 provided licensing provision under section 4. But when telephone was introduced, license was granted in 1881 for improving telephone facility. Telegraph continued to be wholly under the British Crown.
- (b) In 1986, when MTNL was formed for Mumbai & Delhi, the Government of India retained telegraph under the DoT. Only Telephone (Landline) was given to MTNL.
- (c) VSNL was formed for entire India, specifically to handle ILD traffic (product monopoly) only.

Therefore, analysis of Indian telecommunication market would be incomplete or rather would not bring out a fair picture unless it is done from a geographical- cum -product wise study. Hence, the analysis is done in this pattern as a novel approach, in this chapter.

From Avowed Monopoly to Partial Duopoly

From the time of its introduction of telecommunication services in India by the East India Company, it was a protected child and only government (whether the East India Company or the Crown or the successive governments in India after independence) could father its furtherance or nurturing. The history of telecommunication in India just shows an unbroken chain of continuation in the basic policy of these governments; even though with an aberration of a licensed company, through the Indian Telegraph Act and the Wireless telegraphy Act (when wireless technology was introduced). So it can be seen that changes in technology or improvement in the service or demands of the public etc. was insufficient for a change in the approach.

Immediately after the independence, Industrial Policy Resolution of 1948 and later the Industrial Policy Resolution 1956 ensured the continuance of Telecommunication in the Public Sector. The Union List in the Federal Constitution of India ensured the constitutionality of monopoly control of the Central Government of India over Telecommunications in the country. Even the manufacturing segment in the telecommunication industry was specifically reserved for the Public Sector and ITI (Indian Telephone Industries Limited) was established in 1948 as the ever first Public Sector Unit in the country. Thus, the Government of India was both a monopoly and a monopsony (the only buyer for the products) in the telecommunication sector of India⁴.

The entire telecommunication sector -manufacturing and services – followed monopoly market. But, it could not deliver the public what they desired in terms of on – demand - connectivity, timely service and cost effective/ cheaper access provision. This led to bringing changes in the telecommunication access provision rules and licensing provision was invoked by the Government to bring in new operators to the market. The international forum of trade discussions prompted the move.

Uruguay Rounds discussions were in place from 1986, where inclusion of services sector to trade discussions and their progressive liberalization also were deliberated. Telecommunication services were specially on their agenda of talks and the participating countries finally allowed to include Value Added Services (VAS) in WTO treaty. As already seen India began its liberalization of the telecommunication services in 1986 by forming MTNL and VSNL and clearly setting apart a portfolio of operation for these companies. Furthering the liberalization efforts are seen from the time of New Economic Policy. Trade discussions at Uruguay had its clear and direct impact upon the policy makers of the country and the liberalization attempts are thus an off-shoot of the international trade discussions at Uruguay. It is true especially as the international financial organizations

came to the rescue of Indian economy from the BoP crisis of 1990-91, with strings attached for restructuring the economy.

By 1990-91, India had fallen trap to a Balance of Payment (BoP) crisis. To come out of the problem, the IMF and the World Bank offered loans with strings attached. But the TINA factor (There Is No Alternative) compelled the country to accept the terms and conditions enjoined in the loan offer. “The modus operandi of these loans was that the government set up committees to recommend reforms: their recommendations formed the basis for the conditionalities that went into the loan agreement. In December 1990, the Ministry of Communications set up a committee under M.B. Athreya⁵, an outside management expert, on the reorganization of DoT (Desai, 2006).” As a result Value Added Services were thrown open to competition and private entry (Sethi, 2006). According to the view of the Government, Value Added Services (VAS) included the following: (a) Electronic and voice mail, (b) Data, audio and video text messages, (c) Videoconferencing, (d) Radio Paging and (e) Mobile Telephones.

During those times, telephonic communication was all about Wire line telephones-the Plain Old Telephones (POTs). The communication ministry refused to allow private investment into any of the wire line services; nor did it agree to corporatization of the telecommunications business and divestment of a minority stake (Desai, 2006).

Invoking Licensing Provisions to initiate competition

It was by giving up monopoly and invoking the licensing provisions of the Indian Telegraph Act, 1885, that competition was brought to India. Hence, a discussion on licensing regime changes is required. Section 4 of the Indian telegraph Act, 1885 the parent legislation on telecommunications in India, empowers the Central Government of India to license any operator for providing telecommunication services in the country. But, the power was not used by the Union Government of India until the time of the initiation liberalization and the implementation of the NEP. It is during this

time that the Uruguay Rounds of WTO was holding frenzied talks on GATT on goods as well as on GATS on services.

Realizing the importance of telecommunications in any economy and absorbing the aspirations of the people for better connectivity, the Central government decided to accept the reality of the missing link and chose to issue licenses so that the private sector companies may supplement the efforts of the DoT in providing better communication facilities⁶.

Even after the declaration and implementation of the New Economic Policy⁷ (NEP) in 1991, the telecommunication services sector could not vigorously cater to the needs of the Indian public. As liberalization, privatization and globalization became part of daily news and analysis, the business community keenly demanded for effective changes in the infrastructure development of India.

In October 1992, the Department of Telecommunication issued eight Cellular Mobile Telephone Services Licenses, signaling competition in the telecommunication services sector. It was issued two in each of the four Metro cities⁸ of Delhi, Mumbai, Kolkata and Chennai for a period of 10 years⁹. It was the bare minimum number of operators required in a Circle for bringing the effect of Competition. Certain legal tussles occurred were settled in October 1994 and the first Cellular services began on 31st July 1995. It was the beginning of a selective Duopoly Market Structure in the telecommunications services sector in India. Introduction of duopoly, per se, was a giant leap and a revolutionary step that a government could take at those times in India. The following table will give a factual picture of the state of affairs:

Table 2.1 – Telecom Services to Private Competition

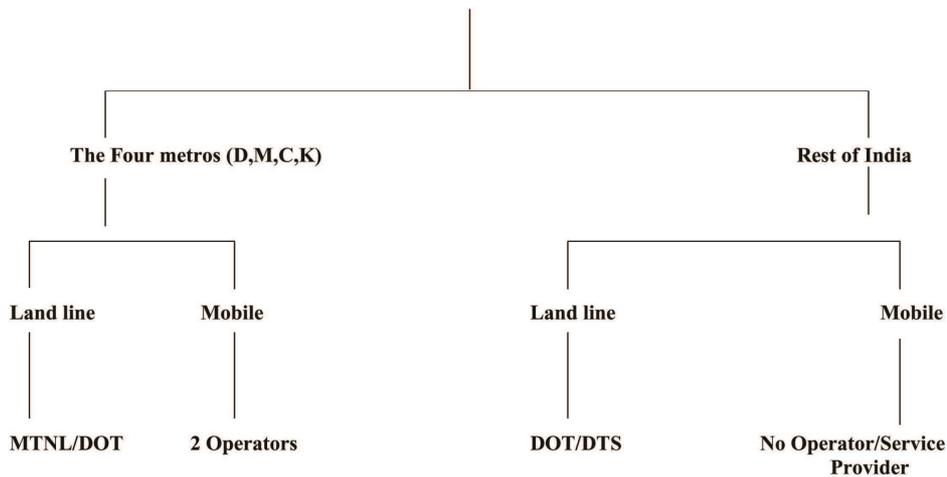
Metros	Company 1	Company 2
Bombay	BPL Telecom	Maxtouch
Delhi	Bharati Cellular	Sterling
Calcutta	Usha Martin	Modi Telstra
Madras	Skycell	RPG Cellular

Source: India’s Telecommunications Industry, Ashok.V.Desai, Sage Publications, p.77.

Thus, certain geographical territories of the Indian telecommunication services sector stepped into a Duopoly market vis-a-vis mobile technology. At the same time, in landline segment, the same metro circles continued to be monopolies. So a product monopoly/duopoly was experimented in India, simultaneously on a selective geographical basis. With the introduction of duopoly in metros in the mobile communication segment the Indian telecommunication sector stood as follows:

Figure 2.1 – Indian Telecommunication Services Sector in 1995

Telecommunication Services Sector in India with Mobile Services in the Metros in 1995



Source: Compiled

During these times also, telegraph was a monopoly with DoT for the entire India.

Solution to the Missing Link: Promotion of Mobile Telecommunication

Promoting mobile communication was taken as the ideal choice by the Government to find a long lasting and affordable solution to the lower telecom penetration in India. Choice of Mobile Technology as a solution to the lower teledensity and also to boost the growing economic liberalization sentiment abroad was prompted due to the following factors.

- (i) Mobile technology offered a cheaper solution and viable alternative to the costly landline (Average per line cost was Rs. 15000 -25000 for a landline whereas it was only near Rs. 2500 for a mobile line.
- (ii) The ongoing Uruguay Rounds forced India to liberalize the services sector and especially the telecommunication services.
- (iii) The Periodical evaluation report of the Missing Link Report highlighted that mobile technology was the feasible solution for developing countries to address its lower teledensity.
- (iv) The mobile giants like Motorola of USA/ Alcatel of France etc. from the developed countries found developing countries as the markets to keep the momentum of their product life cycle. This is mainly because developed countries had attained near total teledensity with the landline technology and mobile technology was only convenience enhancing (due to mobility feature) product for the people. But for developing countries, it was the only cheaper solution for its problems.

It was perceived to be difficult for the government to finance setting up and running a separate mobile network in the country in addition to maintaining the existing landline and telegraph services. But given the social mind set up of the people of the country it was a difficult choice for the government to openly bring private competition in telecommunication. India was evidently

aspiring for a greater role in the global governance set up and desired to be characterized as a developed nation. But various parameters underlying the concept of development were adverse for the country and one such point was poor teledensity¹⁰. Developed nations already showed higher teledensity, with the then prevailed wired technology ie. Land Line. It was a time when the mobile technology was getting absorbed world over. India required an overnight shot up in teledensity to fill the gap of ‘missing link¹¹’. Therefore, Government, taking stock of these situations and the special features the mobile communication technology decided to give a call to the wireless/mobile technology especially as it was cheaper than the prevailing wired technology.

The declaration of NTP 1994 was based on the G.S.S Murthy and ICICI committees which openly said ‘that the government could not cope with the investment requirements of telecommunications and had to allow private investment (Desai, 2006).’ With the declaration of NTP 1994, the Government of India declared its intention of opening up the Basic telephone services also to competition and invited bids for issuing licenses. Initially the following six service areas and operators were selected and one private service provider each was given license for operation in the basic (fixed/wired) services along with the incumbent i.e DoT. During these days, India was participating in the WTO formation discussions¹². Along with this, GATS formation discussions were also going on.

Table 2.2 – Extension of Partial Duopoly

Sl.No	Operator	Licensed Service Area (Circle)	Category of Circle
1	Bharti	Madhya Pradesh	B
2	ShyamTelelink	Rajasthan	B
3	Reliance Telecom	Gujarat	A
4	Tata Tele-Services	Andhra Pradesh	A
5	Essar Commvision	Punjab	B
6	Hughes Ispat	Maharashtra	A

(Compiled from different reports)

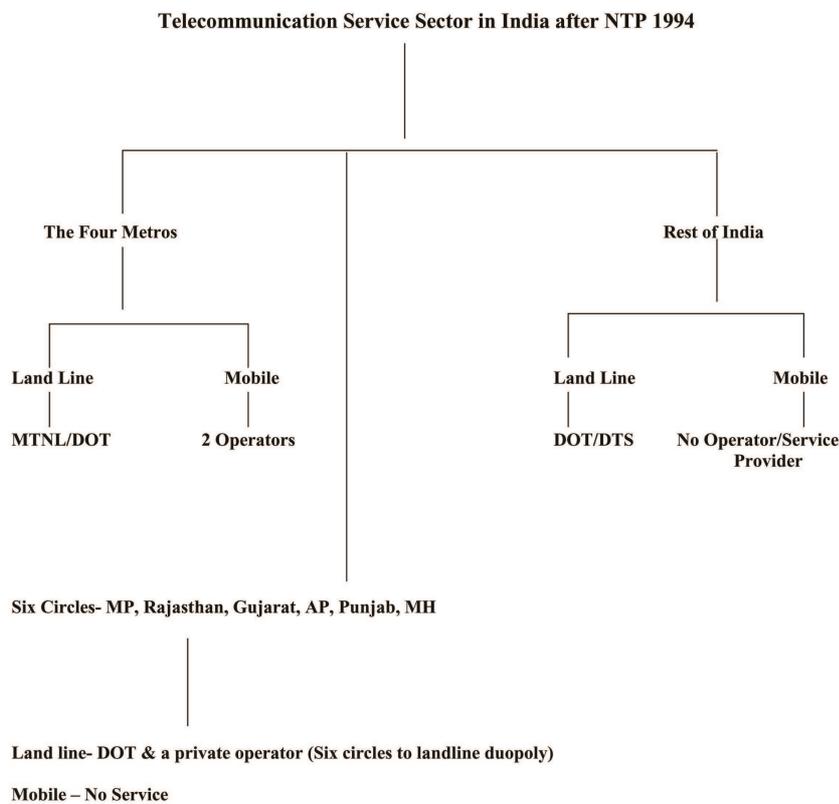
Thus, the Government allowed private entry in the communication sector in 1994 through NTP 1994 and at the same time averted the possible public outcry and the foul call of the unions. By naming mobile technology as just a Value Added Service (which is wireless), whereas sending out the message that the Landline technology and products continue to be the major items of telecommunication, the government voted for a silent strategy that has caused a tectonic shift in the communication services sector of the country.

NTP 1994 was declared with great enthusiasm and vision. It was in fact, the second revolution in the telecommunication sector of India, whereas the first one was the implementation of licensing policy in India in 1881. The Policy aimed at providing 'world class' quality telecom services and development/proliferation of telecom services in India. One of the major goals of the NTP1994 Policy was to increase accessibility to telecom services.

Before the implementation of the policy the telephone density in India was about 0.8 per hundred persons compared to world average of 10 per hundred persons. The telephone density in India was lower than that of other developing countries such as China, Pakistan and Malaysia¹³. NTP 1994 was a clear declaration of the desired future course of action while accepting the

past mistakes of the independent India. It was a mea culpa (I'm guilty) statement with atonement. Under NTP 1994, Indian policy makers openly acknowledged that Indian telecommunication facilities were not adequate as well as bereft of world class quality. NTP 1994 was a declaration of an intention and charting out a definite course of action to radically change the existing ground realities and thus was a revolution as such after the introduction of telecommunication in India in 1851.

Figure: 2.2 – Indian Telecommunication Services – Post NTP 1994



Source: Compiled

From the above diagram, it becomes very clear that India was administering the test dose of competition in an all-time government monopoly, in an extraordinarily cautious approach, while going ahead gradually but decisively. If India is thought of as a single administrative unit with respect

to telecom (instead of the circle based division), it would become clear that the Government of India opened up the Indian Telecom services sector (Land line/Fixed services OR Mobile services) without much opposition applying the Trickle Down Principle (gradually reaching to each geographical area) with the only change that the trickling down was faster than expected. The Government introduced competition in the Land Line segment even when it was provided by DOT/DTS.

Thus, for the first time in the telecom history of India, competition was allowed both in the mobile sector and the basic services, even though in select circles. “The New Telecom Policy is not only a commercial venture of the Central Government but the object of the Policy is also to improve the services so that the said service should reach the common man and should be within his reach. The National Telecom Policy is a historic departure from the practice followed during the past century. Since the private sector will have to contribute more to the development of telecom network than DoT/MTNL in the next few years, the role of an independent telecom regulatory authority with appropriate powers need not be impressed.....¹⁴.”

Now the market structure in India in telecom service provisioning was as follows:

1. Mobile Services:- Duopoly
Only by Private operators each and only in four Metros as a duopoly.
2. Land Line Services:- Partial Duopoly
 - (a) Delhi & Mumbai – Provided by MTNL only - Monopoly
 - (b) Six Circles - DOT and a private operator - Duopoly
 - (c) Rest of India - Only DOT - Monopoly
3. Telegraph Services : - The whole of India - DoT – Monopoly
4. International Telephony:- VSNL – Monopoly until 2004¹⁵

5. Other Telecom Services (Fax etc.)
 - (a) Delhi & Mumbai – MTNL - Monopoly
 - (b) Six Circles - DoT and a private operator - Duopoly
 - (c) Rest of India – Only DoT - Monopoly

From Partial Duopoly to Oligopoly Market (1995 -2008)

In a Duopoly situation of market, there will be two operators offering same/similar service, which is a close substitute for the other. There will be competition between the two, for increasing the market share and profitability. Duopoly is also called as limited oligopoly. Both duopoly and Oligopoly are imperfect markets. Increase in market share is effected in the following ways:

- (a) By finding new additions to the existing stock of customers (New Customers of the product)
- (b) By weaning away the existing customers of the competitor

In the long run, a duopoly market can survive only if it reaches an optimum point where the competing firms have reached an average level of equal subscriber base. If a competitor causes changes in the equilibrium conditions of the market (mainly by varying price), the other should respond quickly or else the market will swing to the other side, leading to a near monopoly situation and failure of the market structure. A duopoly market generally faces certain risks.

- (1) Possibility of collusion- The two operators might get into collusive behavior for their ends, thus harming the society and the government.
- (2) Cartel formation – As only two competitors are there, the possibility of cartel formation and thereby failing the social ends of law may occur.
- (3) One may become greater and the other carves a niche market, but the smaller would face the threat of take over always.

The Indian telecommunication market was vertically split into two, on the basis of the technology used (i.e. on the basis of product/service) for providing connectivity (i.e. communication access). The Plain Old Telephone (Wired/Fixed) communication infrastructure and service continued to be in the monopoly and the new wireless communication infrastructure and service was given over to private competition. Thus, the Government permitted a limited competition or managed competition¹⁶, in the telecommunication sector. It was in fact, product wise categorization of the telecommunication services market.

Duopoly where two sellers/suppliers operate, per se, is a limited Oligopoly. It is so said because, in an Oligopoly, the number of sellers/suppliers will be more than two, but limited to a few. The permission/license of the government given under section 4 of the Indian Telegraph Act, 1885, to private companies to establish, run and maintain the telecommunication operations was a major step taken by the government.

The tryst with ‘duopoly- in-cellular-only’ and ‘only-in-four-metros’ approach could not continue for long. There were two major factors that compelled the government to further open up.

- (i) Lower network externality in the mobile segment.
- (ii) Limited mobility due to non availability of the mobile network in other parts of the country.

At the same time, there was adoption of a technology break out in the wireless segment, which was called as CDMA¹⁷ (Code Division Multiplication Access) which could offer service without wires but in the nature of fixed service. CDMA technology revolutionized landline segment and mobile segment in one stroke, as it was a hybrid product. The existing operators of other technologies cried foul, but a policy gap enabled aggressive marketing of the product. CDMA technology became popular and mobility became a reality, but it was basic services as per the policy. Finally,

the government had to regularize the provision of service using CDMA technology.

A further, auction based issue of 34 CMTS Licenses was done for 18 telecommunication circles for a period of 10 years during December 1995. Six Basic Telecommunication Services licenses were granted in the year 1997-98 by way of auction through tender for providing basic telecom services in six select circles (states). Under the terms of the BTS Licenses, a licensee could provide fixed line basic telephone services as well as wireless basic telephone (CDMA) services. These licenses were issued for a period of fifteen years. It was under NTP 1994 that the licenses were issued so far and duopoly came into being in many circles in India separately for mobile and landline technologies.

The Government had taken the approach of maximizing its budgetary revenue from the telecom segment. Therefore, under the NTP 1994 regime the telecom operators were required to pay hefty fees/charges to the government on various counts and it affected the viability of operation/provisioning service directly. Therefore, in 1999 the government came out with NTP 1999 (New Telecom Policy, 1999)¹⁸ whereby a revenue sharing regime was devised. But in return, the companies had to agree on giving up duopoly status and accept competition, with stringent licensing conditions. It was also another way of bringing competition in the telecom segment and at the same time compensating the loss of revenue to the government in the shifting the regime to revenue sharing regime which was more equitable. Thus, the bailout package offered to the beleaguered telecom operators brought competition along with it.

In principle, Indian telecom ushered into an era of cautious competition with the declaration of NTP 1999. During this time itself, there were serious deliberations taking place regarding corporatizing DTS- the service provisioning arm of DOT. Due to stiff opposition from the government servants employed in DOT/DTS, the idea of corporatization was left in the air, for playing float and to obtain a final consent from the concerned parties.

Finally, on 1st October 2000, the government entity (DTS) became BSNL and took over the service provisioning aspect of telecommunication, to compete with the private sector. “With one stroke of a pen, the 143 year old Department had been cast adrift into a world of turbulence and intense competition and forced to chart its own, uncertain destiny. It was wonderfully ironic: an old man turned overnight into a babe in the woods and forced to cross swords with fleet-footed private players who had shown how adroit they could be in a price war (Saxena, 2009)”. Corporatization DoT to BSNL was the result of such international commitments for providing a level playing field¹⁹ to new operators including the foreign operators.

Subscription to GATS compelled the country to open up further and NTP 1999, a modified telecom policy was issued, whereby duopoly was given up. NTP 1999 offered the licensees a flexible license fee regime based on revenue. Under this migration package, the license period for all the CMTS and FSP licensees was extended to 20 years from the date of issuance of the Licenses and existing land line PSUs were licensed to enter the mobile telecommunication services sector. With the change in fee regime, government changed the license regime to bridled competition, initially bringing in PSUs to all circles as a new operator for mobile services. NTP 1999 was a broad visional policy leading to progressively strengthening competition in the sector. Based on TRAI recommendations, the Government of India issued fourth license for a cellular operator in a circle. Seventeen new CMTS Licenses were issued for a period of twenty years in the four Metro cities and thirteen Telecom Circles. In 2001, BTS Licenses were also issued for providing both fixed line and wireless basic telephone services on a continual basis.

During all these years, licenses were issued separately for setting up mobile services or land line services by an operator. It was so in India, because India had provisioned mobile services as Value Added Services (VAS) only. But GATS provisions mandated that access provision was to be treated as technology neutral. By the end of 2003, India came to accept that access

provision should be treated as technology neutral. It means whether telecommunication access is provided through landline (FSP - wired with no mobility) or WLL (wireless Fixed with limited mobility) or Cellular Mobile it is basic service providing access provision²⁰. Therefore, separate licenses are not required. A single license would authorize the companies to provide access provision through any technology. In 2003, based on TRAI recommendations a Unified Access Services License (UASL) Regime was allowed in India. After the introduction of the UASL in 2003 and until March 2007, fifty one new UASL Licenses were issued based on policy of First Come-First Served. Meanwhile, in 2007 and 2008 the Government issued dual technology licenses for providing services through both GSM and CDMA network. Subsequent to these developments there was a major boost to the process of competition spirit as the government decided to remove the cap on the number of operators in a circle. The policy of not further issuing new licenses in the telecommunication services sector kept the market as oligopoly.

From Oligopoly to Competition (2008-2012)

Based on TRAI recommendations, the Government decided to enhance the number of telecom operators in the country. Installing, running and maintaining a telecom network involves huge amount of investment and expertise. Hence, the government was issuing licenses only to high net worth joint venture partners with telecom track record. In 2008, it was changed and any corporate body could bid for spectrum. Thus, 122 licenses were granted all over India increasing the number of operators in the circles. It ushered in the era of open competition. It led to serious allegations of setting aside the constitutional and legal principles of equity and justice. Judicial intervention was sought to remedy the situation.

The Court Judgment: Return to Oligopoly?

The government set aside certain criteria which they had been following so far for issuing licenses under the 'no cap policy'. Under the no cap policy

122 Licenses were issued in 2008 for providing 2G services. Litigations ensued the process of new issue of licenses. In Centre for Public Interest Litigation and others versus Union of India and others with Dr. Subramanian Swamy versus Union of India and others, Supreme Court ordered cancellation of the 122 licenses issued by DoT after January 2008 pointing out procedural lapses. It had a profound impact on the telecommunication services market in India. The court judgment virtually sealed the leap towards open competition and the telecommunication market was brought back to the pre 2008 stage of oligopoly. It brought back the market to the pre 2008 scenario of oligopoly, where a few operators operated in each circle.

It was a landmark judgment whereby the Supreme Court upheld the principles of rule of law and equity above business conveniences and considerations. In 2004, the principle of margin appreciation prompted the court to validate offer of licenses to private operators. But, when the government initiated the no-cap-policy to grant any number of licenses in a circle, the judiciary struck it down on the basis of the legal principles of equality and justice. As MNP feature already existed in India, the cancellation of licenses did not affect the subscribers from the point of view of connectivity. But, from the business/investment point of view, it was a shock unparalleled to several joint venture entities. However, the telecom services industry easily swung back to oligopoly market structure and consolidation process (M&A) became easier.

Concentration ratio in the oligopoly telecom market

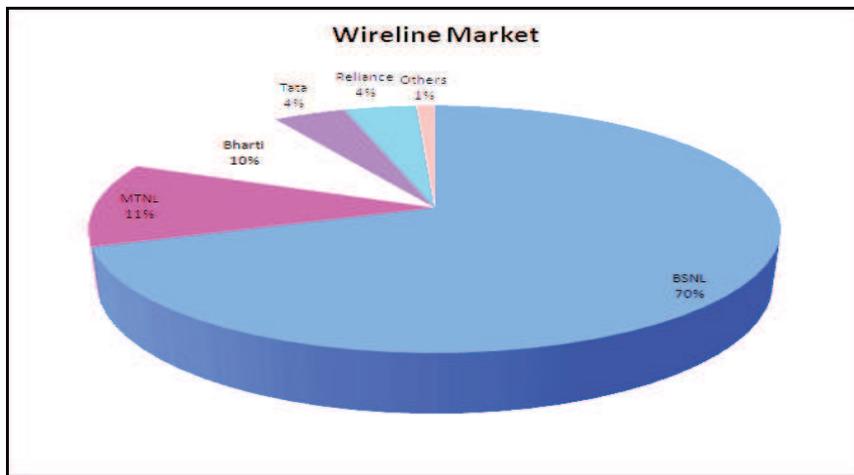
In economics, concentration ratio is a measure of the total output produced in an industry by a given number of firms in the industry. It is the measure of the percentage of market share in an industry held by the largest firms within that industry. In other words, it is the ratio of the combined market shares of a given number of firms to the whole market size. It is common to consider the 3-firm, 4-firm or 5-firm concentration ratio for finding the oligopolistic

nature of a market. Analysis of the concentration ratio is often a measure to consider the market nature of an industry.

Wire line Segment in India

In Fixed Line segment virtually the entire market is with BSNL, successor of DTS and DTO. MTNL with Mumbai & Delhi alone has 11 % and Bharti has 10%. Thus, even with monopoly like presence of BSNL, one cannot but consider MTNL of Mumbai & Delhi, and Bharti with very close percentage of 10. Therefore, it is an Oligopoly market with 3 firm concentration ratios of 91%.

Figure 2.3 – Wire line Market in India

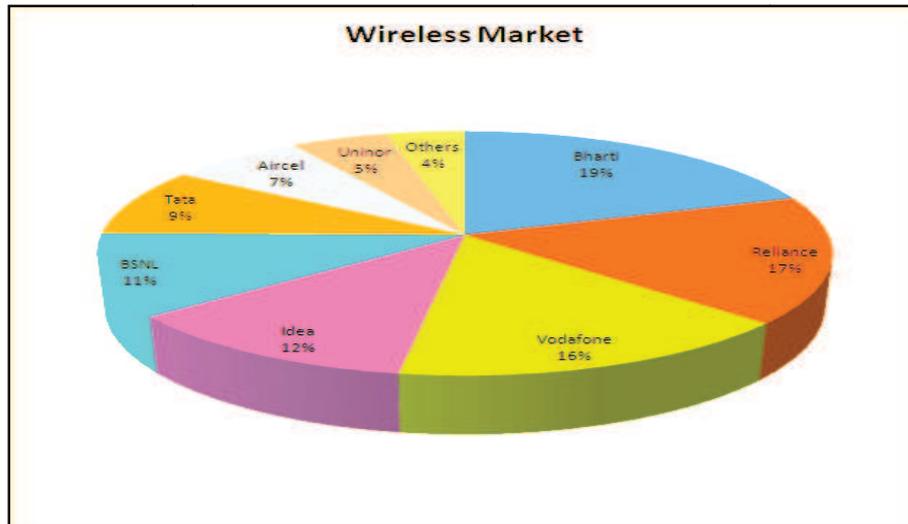


Source: TRAI, Position Paper, February 2012

Wireless Segment

In the wireless segment, five firms hold 75 percent of the total market currently. They are: (a) Bharti 19 per cent, (b) Reliance 17 per cent, (c) Vodafone 16 per cent, (d) Idea 12 per cent, (e) BSNL 11 per cent.

Figure 2.4 - Wireless Market in India



Source: TRAI, Position Paper, February 2012

So, the wireless segment is facing a five firm concentration ratio of 75 per cent. Or else one may say six firm concentration ratios of 84 per cent when the 9 per cent share of Tata's also is taken as significant.

Changes in the Indian Telecommunication Services Market

Change in the market structure in Indian Telecom Services Sector can be analyzed considering the various aspects of a competition market in the economy.

- (a) Number of operators
- (b) Pricing the telecom service
- (c) Supply of product/service
- (d) Availability of substitutes
- (e) Economies of Scale
- (f) Economies of Scope
- (g) Barriers to entry

Number of Operators: Number of players in a market determines the nature and structure of the market. It is the point whereby it is decided whether the market of a product/service is monopoly/duopoly/oligopoly/perfectly competitive.

In a monopoly only one operator would be providing the product/service. In India only the government was providing telecom service and it was entrusted to DTS (Department of Telecom Services). It was a clear case of monopoly situation where telecom connectivity was given by a single operator, in a geographical space.

When Mobile services (an alternative technology for telecom connectivity) were introduced, two private operators each were allowed in the four metros and it was a situation of duopoly (product wise), whereas in the same 4 metros, land phone services were provided by a monopolist – either MTNL or DoT. In order to evade the public gaze and possible opposition the government placed the mobile telecom services under Value Added Segment (VAS) and propagated the view that land phone would continue to be the mainstream telecommunication model in India while opening up mobile communication access technology for the entire India, in a step by step approach. But, the mobile segment grew out of proportions and assumed such greater role in telecommunication sector increasing teledensity manifold, as even greater than the land phone segment, with much lower per line investment.

Later licenses were given to six private operators in basic services, one each in a circle (selected from A and B circles equally) to operate in six selected circles along with the DoT, and it was duopoly in those circles, for the basic communication services. Gradually, as many operators were allowed as were eligible as per licensing conditions in all the circles creating a clear case of managed competition ushering in an era of oligopolistic competition, in the Indian telecommunication services segment. As the mobile technology

turned out to be the major source of greater revenue, the companies started undermining land phone segment and reduced further investment in it.

The telecom sector went through a tectonic shift in the telecom market structure in India from monopoly to duopoly and thereafter to competition and back to oligopoly. Thus, the Government of India shortened it with Oligopoly structure of competition by allowing only a few firms for competition. It was ensured and made possible through the stringent licensing conditions which act as entry barriers to the prospective operators. Thus, India implemented a 'managed competition' or rather 'administratively bridled competition' in the telecom sector.

Until October 2007, there were varying restrictions on the number of licenses issued in a circle for operation. And that is how it was a duopoly or thereafter an Oligopoly. In October 2007, accepting the recommendations of TRAI, the government decided to progressively enhance the level of competition or rather reduce the executive control on the cap on the number of licenses that can be issued in a circle for providing telecom service. Such artificial fixing of maximum number of licenses (i.e. managed competition/oligopolistic competition) that can be issued was removed. As per the order, "the Unified (Telecom) Access Services (UAS) licenses are technology neutral and the licensees are required to provide access services and meet the stipulated roll-out obligations using wire line and/or wireless technologies by utilizing network equipment that meets the prescribed standards." Thus, telecom services, irrespective of technology (CDMA/GSM/Fixed) or segment (Local/NLD/ILD/etc.), may be provided by an operator, as the operator is given a UAS license. Through the issue of UAS license, the government of India ensured the following:

- (a) Recognized that telecommunication access was technology neutral (That is to say, tele-access is the issue to be solved, regardless of the technology used for realizing it).

- (b) Recognized that wired access technology as well as wireless access technology was in fact equally “basic” access technologies. (ie. Wireless/ mobile were not simply a Value Added Service- This is the view under the GATS).
- (c) Technological advancement must be recognized and utilized for the improvement of standard of living of the people.
- (d) Policies/rules of the government should be framed/ modified in such a way as to enable commercial implementation of the advancement of technologies for improving the standard of living of the people.
- (e) Government received revenue from the operators for vacating its commercial competition space to enterprising companies.

Pricing the telecom service in India - Socially desirable pricing: Pricing is another very important parameter deciding the nature of the market. In a monopoly market, the monopolist determines the price. He is not simply a price taker. He has market power and he dictates the terms to the customers and prospective customers. Most often, he would become a monopsony also with respect to buying from his suppliers. There again, the market power will help him to withstand any pressure. He would fix the price as desired by him. Thus, a monopolist – cum- monopsony would be a strain on the economy, as it would be cost inefficient and escalating prices for greater profit. Further, it would not pay the normal market price adequately compensating the suppliers of the company, on its purchases.

The pricing methodology and philosophy adopted by the government was a social pricing²¹ for the telecommunication services, the societal technology and the government was clearly practicing socialism by charging a differentiated price- overcharging long distance NLD and ILD calls- for reducing the charge of local calls. Thus, telecommunication stands costlier as distance increases. Hence, those that required genuinely the telecommunication services because of greater distance ended up paying higher. Further, as it will be seen later,

the urban customers paid higher for their calls, so as to cross-subsidize the rural people.

Pricing in telecom may be:

- (a) Cost – based pricing
- (b) Socially desirable pricing

The investment required in telecommunication would be hefty and the return from it was low when compared to the sunken investment. As new technology would generally be costly, telecom technology was no exception. Return remained low, for many reasons. In telecom, Time is money. If an investment is made, and ready for operation, time-capacity sharing should take place at its optimum level. For wired line, the cables and equipments are dedicated for the customer specifically. If the customer does not use it, it would generate only a minimum rent amount, which was in no way matching the investment or the expected return. If the existing capacity remains idle, it would not generate income in telecom as required for survival, because pricing is based on the cost unit,” pulse”, which is a function of time. If more and more calls were made, from the existing infrastructure, it would accelerate income generation and service would become cost effective and thereby cheaper.

Pulse, ‘P’ = f (t), where ‘t’ stands for time used for transporting.

As data transmission has become increasingly vogue in the industry, there is another pricing model also in existence.

Pulse, ‘P’ = f (q), where, q stands for the quantity (kb/mb/gb etc.) being transferred.

Basically, various factors interplay here:

- (a) A greater critical mass is required. - It means that the number of customers with telephone is greater, with whom an operator could offer communication facility when a new customer is about to join him. For example, Videocon is a new company with very limited

number of customers. But, Videocon could attract new customers to its network offering a greater critical mass (anyone with telephone connection-land/mobile - using any technology of any operator) as there was assured interconnection facility with other telecom operators.

- (b) Network externality function - This is in fact, very much related to critical mass. Here, the concept is that utility of a phone would be greater (increased utility) for a customer, if more people are connected to the network. This is the reason why interconnection of operators becomes important, just as customer addition by an operator.
- (c) Lower/optimum tariff – It would lead to quantitatively increased use of the facility, in turn increasing the total telecom unit (i.e. pulse) consumed by the public, causing growth in revenue.

In telecom sector in India, the Government of India had taken the policy of ‘socially desirable pricing’ instead of the ‘cost based pricing’. “The principle of socially desirable pricing is to charge the customers only as much as they are able to pay (Varadharajan, 2012).” “The basic underlying principle for such a structure was that the tariff as a whole should be technologically independent (Saxena 2009)”. Further, the government was cross subsidizing the rural telephony with the higher price charged from the urban subscribers. Another element of cross subsidizing was also applied by the government in tariff fixation process. It was that the subscribers of NLD (National Long Distance) calls and ILD (International Long Distance) calls had to pay a higher price for the service just to subsidize the local calls of the operator. Hence, tariff for NLD and ILD remained higher just as urban tariff was kept higher. “However the move from socially desirable pricing to cost-based pricing, especially in an evolving telecom market such as that in India is difficult (Varadharajan, 2012).” But, in a competitive environment, existence, survival and growth depends on adequate profit which is directly correlated to proper pricing. The incumbent operators - DoT/MTNL until 30th September 2000 and

thereafter BSNL/MTNL - who had a strong established presence made it difficult for the new operators to price it differently, in a country where people are cost conscious generally. NLD (monopoly service of DoT) was opened up in August 2000 before corporatization of DoT into BSNL and ILD was opened up in April 2002. But, the new operators in the basic services had to toe the line of pricing of services as was done by the incumbent (DTS/BSNL/MTNL). It made the basic services operations commenced newly by the license holders unviable. The issue of unviability was compounded further by the licensing condition that of the total new connections being provided by a new operator, 10% shall be in the rural area. It was a move for universalizing telecommunication access.

So, pricing was not left to the operators either by the government or by the concept of social expectations because of the strong presence of an incumbent operator. Therefore, the welfare pricing approach of the government had its strong influence on the telecom psyche of the country and it belies the concept of free competition pricing, in spite of the fact of certain elements of free pricing is found in the industry.

In the mobile sector, due to the price skimming strategy²² of the operators, initially, charges were very high but had to lower it as WLL-LM service with CDMA technology provided mobility and lower tariff to the people even though provisioning the communication facility by itself was against licensing conditions. Finally, the government was compelled to grant license for it retrospectively and it was called as Unified Licensing Regime. Thus, competition in the mobile services brought the tariff down to a level of predatory pricing²³ (because of tower sharing and reduction in investment cost thereby) and was always compared with the land line charges to find out affordability to the masses. When Caller Party Paying (CPP)²⁴ rule was implemented by the TRAI, it also reflected the affordability issue (and socially desirable pricing), rather than cost-based pricing.

Supply of Product/Service in telecom industry: Level of supply of the product/service is an important factor in a competitive market. A monopolist

may curtail his production and maintain a particular level of supply so as to maintain his profit, pricing and demand for the product. A duopolist may collide with his competitor and create a market situation similar to monopolist (Privately dividing the market and thereby enjoying monopoly economic profit divided between them). Or a duopolist may move to a niche allowing the other to behave like a monopolist and often facing the threat of take over from the major operator. An oligopolist may join a cartel/or form a cartel and supply (by division of output)/price may be regulated accordingly so as to ensure profiteering (Such cooperation is called collusion/cartel). Another very important feature in an oligopoly market is competing and cooperating simultaneously so as to ensure revenue while facing another common enemy. Thus, here, enemies become limited friends for serving certain common purposes. Whenever there is an element of competition, the competitors may try to cooperate among themselves for ensuring that the untoward incident of 'losing - all - to - the - other' does not happen. Oligopolistic market may also show the features of a duopolistic market. Thus, oligopolistic competition may become a co-competition (co-operation –cum – competition among competitors) and the losers will be the government in revenue and the public in terms of quality of service, price of the product/ service etc.

In telecommunication services, supply of service was very much restricted during the monopoly situation ie. sellers market. But with the introduction of competition and increasing the levels of competition gradually, by bringing in mobile services, supply constraints were removed and the element of competition further improved competition and competitiveness of the market.

In this connection it is imperative to discuss three important aspects that helped supply of telecommunication services, viz. Universal Service Obligation, Roll out Obligation and Compulsory Access to POI.

*Universal Service Obligation*²⁵: In order to ensure universality (urban and rural) in supply of service the government imposed a Universal Service Obligation (USO) and has created a USO Fund for the purpose. It was

implementation of socialism in providing the telecommunication access service. With private operators coming to the market, they concentrated on urban elite who were their cash cows and it was cheaper for them to provide access to more people at the same time, constituting major portion of their revenue from the urban. The rural area was neglected, just for the same reasons. But, neglect of rural areas would cause a serious development divide in India, and therefore, the government undertook remedial measures for rectifying the anomaly. Establishment, collection and distribution of USO funds was such a deliberate step taken by the government for the rural people.

Roll out obligation: Another obligation of roll out obligation (the time frame within which an operator should actually commence providing service and build up capacity based on the spectrum obtained) is also imposed by the government to ensure supply and availability of the product. Roll out obligation is part of licensing conditions.

Compulsory Access to POI: The strong presence of three incumbents (BSNL, MTNL & VSNL) was a concern for the new telecom operators and fear of abuse of dominant position was nipped in the bud by ensuring access to Point of Interconnection (POI) compulsory. This was to ensure free supply of the service in India and augmenting network externality factor favoring the new operators and the telecommunication services sector as a whole as an inevitable infrastructure for development. Compulsory access to POI was a part of the Agreement on Basic Telecommunication services of WTO.

Availability of Substitutes: In the monopoly telecom market there was no substitute. The only product available was land line connectivity provided by the Government/DTS. With the introduction of mobile services in India on a stage by stage approach, the prospective customers took it upon themselves initially as an additional service and thereafter as a close substitute to the existing land phone connectivity, even though the Central

Government had considered it as a Value Added Service. The market perceived it as a superior substitute product for the land phone due to the feature of mobility and connectivity. Further, the lower chances of going faulty on account of the elements, enthused them to grab it as the ‘all- in – one- communication solution -they- waited for’. It is because of this perception by the market that some of the authors consider that duopoly and competition in the telecommunication segment of India, had already set in with the introduction of eight operators in the four metros. Their view is that land phone or mobile phone, it is basically provision of telecommunication connectivity, and that they are close substitutes.

Availability of substitutes was ensured through a gradual approach, but at the same time it cannot be said to be a perfect substitute. Because value addition in the form of wired broadband came bundling with landline at cheaper rates. So there was always an element of differentiating the products, even though the basic feature of voice communication could be substituted. Value added products came to be offered as added features of the product.

Availability of substitutes is restricted through legislation in the country. As it stands now, the technology has challenged the existing tariff in the voice telephony segment.

Voice calls can be made from:

- (a) Land phone to Land phone(Wired/CDMA)
- (b) Land phone to mobile(GSM/CDMA)and vice versa
- (c) Land phone/mobile to internet telephony(through computer)
- (d) Internet telephony to Land phone/Mobile(IP telephony)
- (e) Internet telephony to internet telephony(IP telephony)

Economies of Scale: Economies of Scale refer to bringing down the per unit cost of a product (average cost of a product) through reaching an optimum level of production. On the telecom service side, if maximum

number of customers can be served and round the clock making use of the installed equipments, it would bring down the per unit cost of call. It would bring greater revenue to the operator. In telecom, there is an urban- rural divide. It is costlier for the operator to serve the rural customer as a dedicated line is to be installed up to his premises however far he lives in a village. Further, the variable income from the customer would be comparatively low as number of calls made by him would be lower, generally. Even in urban areas, the exchange would have reached its economy of scale in operation, but demand for new connections may be waiting. But the waiting numbers would not be sufficient for installing a new set of costly exchange equipments. Thus, capacity addition may be delayed and waiting list may swell up causing discontent among the prospective customers. Therefore, it was always a delicate balance for the telecom operator to reach the economies of scale.

Economies of Scope: It refers to bringing down the average cost of the firm (not the average cost per unit of the product) itself by offering various products/services. For example, a telecom company providing broadband facility in addition to the voice calls facility in its land line. A mobile service company offering value added services through its network, would generate higher revenue and the average cost of the firm would come down.

Barriers to entry: Barriers to entry determine the nature of the market structure. In the monopoly situation where it was the government itself, telecommunication services were forbidden waters for others. It was a legally protected monopoly which turned out to be a natural monopoly. Hence, there was a perfect barrier to entry.

Gradually, it was opened up by utilizing the licensing provision existed in the enabling legislation and barriers were being removed. But the initial investment cost, requirement technological expertise etc. were real barriers. In addition the government put forth stringent licensing conditions and hefty fees. As industrial analysts pointed out, reaching a point of Break

Even would have taken more than eight years for a telecom operator in India. Such hurdles, acted as barriers to entry and therefore, there was no perfect competition in the market. The competition was a managed competition.

For a prospective operator, the following played the role of barriers to entry:

- (a) Obligation for universal service - compulsorily providing service in the rural area irrespective of economic viability. Rural service is not cost efficient, when compared to the urban segment. Thus, the USO feature compulsorily imposed on the operators is in fact a socialist approach seen in telecom.
- (b) Huge spectrum license fee, entry fee, Performance Bank Guarantee etc
- (c) Huge annual fee which was later changed to revenue sharing regime
- (d) Compelled to follow the irrational pricing structure of non-competitive cross-subsidizing and socially desirable pricing.
- (e) Changing Government policies.
- (f) Fear of being compelled to address the changing perceptions of the security concerns of the country at extra cost.
- (g) Regulatory/juridical interventions by TRAI and TDSAT respectively.
- (h) The strong presence of a public sector unit (BSNL/MTNL) with public confidence.

The move from monopoly to duopoly and thereafter to oligopoly, enabling competition incrementally, is a fascinating study of the telecom sector in India. The elements of competition are present in some features whereas it is restricted by executive action of the government in some other features

as seen above. So, the telecommunication market model in India follows a limited competition model, where the government desires to build it as a social infrastructure with the help of FDI and private sector. The basic nature of telecommunication is that it nurtures the concept of social beings among humanity as “no one can live as an island”. Communication connects the peoples and builds up the society. The role of the regulator (TRAI) includes ensuring that competition is not cut-throat and there is a deliberate attempt to reach a level playing field between the incumbents (DOT/DTS/BSNL/ MTNL) and the private mobile service providers. The first license for a mobile operator was given in India in the year 1995. But, DTS/BSNL/MTNL was prevented from entering in the mobile segment until the year 2002. It was a time given to the new operators to establish them and begin operation on a strong footing. Further, the international telephony continued as a guaranteed monopoly of VSNL until 2002 and thereafter it was opened up.

The government removed the cap on the number of licenses that can be issued in a circle. There is presence of limited number of operators in a circle even though the government has removed the cap on the licenses that can be issued in a circle. The government has through its executive action shown its willingness to provide license to any eligible applicant. But the eligibility conditions per se is a barrier to free entry and other obligations like roll out obligation and no transfer of license in three years of obtaining etc. are barriers to exit; Thus, it becomes very clear that the telecom market is an Oligopoly market and there is competition within and among the operators. TRAI, Competition Commission and other regulatory arms of the government manages the competition.

Transitions in Market structure: An Analysis

1. In India, when the telecommunication was a governmental monopoly, it was not run strictly on a commercial basis²⁶. It was not a commercial monopolist industry, legally kept reserved for the

exploitation of the subscribers by profiteering. A commercial monopoly would be profit oriented and one would be able to apply the economic principles of a monopoly market structure to that set up. Where as in the Indian context, though, some of the features of a monopoly situation can be traced to the industry structure of those times, the absence of a profiteering mind and exploitation of consumers make one think otherwise. Still exploitation in the form of command to bear with the inefficiency of the only provider existed.

2. There was only one supplier for the telecommunication services in any form i.e. The Government of India. Further, the supply of service was very much limited as capacity addition was dead slow. But, it was so, not for manipulating supply demand factors and to influence pricing thereby with the object of profiteering. A true monopolist doing so would popularize the product and try hard to increase the demand. In India, the increase in demand for the phone was the result of an improving the standard of living. As the people desired for better standards of living, they desired for telecommunication facilities at hand. It is because of the fact that telecommunication had assumed the position of societal technology.
3. As transportation facility improves telecom needs grow. Because people and goods travel greater distance. Thus, improvement in mobility per se demanded better communication facilities.
4. A true monopolist would set up barriers to entry and make it a permanent measure for his undisturbed sailing through. The Government of India, the sole supplier of the service never removed the provisions in the Indian Telegraph Act, 1885 which enabled licensing of operators²⁷, even though it was not implemented as Telegraph was an item classified in the Schedule A of the Industrial Policy Resolution, 1956 which was further emphasized by the Socialist thoughts of the governing structure.

5. Socialist thoughts were deeply ingrained in the minds of the rulers in those times. It made them practice the principles, to a certain extent as possible. That is the reason for differentially charging the services. For example, higher rate was charged from NLD and ILD callers for subsidizing (cross- subsidy) the local calls. Another instance is that of charging the urban customers higher for subsidizing the rural customers even for the local calls.
6. It was the Government of the Independent India that showed the true monopoly powers of it in the telecommunication services sector in the country. While being under the British rule, there was a licensed private British company - The Oriental Telephone Company Pvt. Ltd²⁸. - in India providing telephone facility from 1881. But, the telegraph was under the monopoly of the British government. In these circumstances, it is not fully correct to argue that there was historical continuation of the British monopoly in telecommunication sector. But there is a school of thought stating that in Indian telecommunication it was a century old monopoly²⁹. If that is taken into account, that the Indian Telecommunication market continued as a monopoly was just a historical fact and a continuation of the British regime. On transfer of power from the colonial rulers of the country to the Indian hands, India willingly agreed to bind “ourselves to treaties as far back as 1792, concluded by the East India Company³⁰”. Further, our Constitution also has accepted the validity of all then existing laws of the land provided it does not contradict the fundamentals of our Constitution. By way of the Doctrine of severability, India accepted to sever only that portion of a law or clause that would contradict the fundamental principles of our Constitution. Thus, it becomes amply clear that what happened was that the Government of India just continued with the then existed telecom laws and policy even after Independence, except for the

aberration of taking over of telephone exchanges of the local kingdoms/licensed company, for bringing all the 196 exchanges under the same technology platform. In such a situation, where it was not a profit-oriented monopoly, it may not be fully acceptable to apply the economic principles applicable to a monopolist.

7. The GATS (General Agreement on Trade in Services) rule and the consequent changes made in India in the sector reinforce the point that it was not an economic/commercial monopoly. According to the GATS rules, a service run entirely under a governmental authority would not fall under the purview of GATS. Article I (3) (b) of the GATS excludes “services supplied in the exercise of governmental authority³¹”. These are services that are “supplied neither on a commercial basis nor in competition with other suppliers³².” as they are “provided at non - market conditions³³”. Hence, market conditions (i.e. competition) are promoted by WTO and GATS.
8. In another sense, the trends of monopoly still exist. Spectrum, the natural resource available for wireless communication is still the absolute property of the Government of India. It auctions spectrum, and the operators utilize it for running the service. Here, market is open for various operators including private entities and 100 per cent FDI enterprises. But, the natural resource is made available to them on competitive bidding but the quantity available is controlled and restricted by the owner – cum - supplier under strict supervision and control.
9. The strong presence of three incumbents (BSNL, MTNL & VSNL) was a concern for the new telecom operators (Indian & Foreign) and their fear of ‘abuse of dominant position’ (by the incumbents) was nipped in the bud by the Union Government by compulsorily ensuring access to Point of Interconnection³⁴ (POI) in India. This was to ensure free supply of the service in the country and augmenting

network externality factor favoring the new operators and the telecommunication services sector as a whole. Compulsory access to POI was a part of the Agreement on Basic Telecommunication (ABT) services of WTO/GATS.

Thus, it becomes clear that various features of competition and at the same time various rules/guidelines that manage competition are found in the telecom market of India.

A deeper introspection of structural transition in Indian telecom industry would make one feel about the global telecom market integration in the post WTO regime. GATS which was signed under the aegis of WTO, has aided as facilitator of this integration process. India is no exception. In the next chapter we will deal with GATS regime vis – a vis Indian Telecommunication services industry.

¹ After independence, Government of India took complete control of the telecom sector and brought it under the Post & Telegraph Department. (WP (CIVIL) NO. 423 of 2010, Centre for Public Interest Litigation and others versus Union of India and others).

² Annual Report 1931, Post & Telegraph Department, Government of India.

³ The same fleecing approach may be traced even during the auctions of spectrum to the likely operators in the sector. The government held the spectrum – the radio frequency waves- the natural resources for the mobile telecommunication services and was auctioning it to the highest bidder. Does auction of spectrum and grant of license are consistent with the principle of public trust. When service tax was introduced in 1994, telecommunication was one of the three services on which tax was introduced. Government realizes huge revenue from service tax collection from telecommunications.

⁴ Until the formation of MTNL (Mahanagar Telephone Nigam Limited) and VSNL (Videsh Sanchar Nigam Limited) in 1986, there was only one telecom service operator in India and that was the Department of Telecom (DoT). In the year 1986, VSNL was formed exclusively with object of handling international long distance (ILD) calls(service bifurcation) and MTNL was formed with the sole objective of providing telecom service in Delhi, the National Capital of India and Mumbai, the Financial Capital of India(regional/geographical bifurcation). Thus, as for providing telecom

service to the people of India, until 1986, there was only one entity (DoT for the entire India and for all telecom products) and thereafter there were three entities (DoT, VSNL & MTNL). Even after the formation of MTNL and VSNL, the operators were monopolies in their respective spheres as there were no competitors for the same product in the same geographical territory. Therefore, it may be concluded that formation of MTNL and VSNL was only an administrative bifurcation of the entire spectrum of services scenario, for the convenience of DoT, the existing operator. It is so, especially because that the DoT was doing all functions, including policy formulation, regulation and policy implementation, even after this bifurcation. Because of the perfect division of geographical territory of operation (Delhi & Mumbai for MTNL and rest of India continuing with the Department of Telecom Services (DTS)) or service to be provided (local, national, international) there was no change in the market structure of Industry from the economic point of view. Thus, monopoly structure of the Industry continued. Thus, in 1986, in Indian Telecommunication Services Sector, there came a product wise monopoly (VSNL for ILD operations) and two geographical monopolies (MTNL in Bombay & Delhi and DoT in Other parts of India). It may be pointed out here that there is a school of thought saying that it was the end of the monopoly market structure of the telecommunication services sector in India. According to this school of thought, only DoT was providing the service (any tele - communication service) for the entire India and that DoT was providing Local, STD and International call services and telegraphy services. In 1986, product division was undertaken and VSNL was formed exclusively for ILD services and geographical bifurcation was undertaken carving out Mumbai and Delhi for MTNL. Thus, they say that there came three operators on the Indian soil and that it was the end of monopoly structure. But, it can be established unambiguously that there was no competitor on the same geographical territory for the same product and therefore, it was only an administrative bifurcation at that time, with DoT continuing to frame policy and regulating the telecommunication services sector.

In the year 1984, the Government of India, established C-DoT (Centre for Development of Telematics), as an autonomous body. The C-DoT is a Government of India owned Telecom Technology development centre. It was established with the initial mandate of designing and developing digital exchanges and grew rapidly and catapulted to a Next Generation Technology Centre developing various intelligent software applications. It has played a vital role in altering the telecom map of India, by supporting technology innovation and transfer of technology. The rural India grew inclusively in telecommunication connectivity because of the strong initiatives taken by the organization, with the support of the government. Even though C- DoT was not providing telecommunication services, it did heavily impact the acceptance and demand

for telecommunication services in India, through its interventions and calibrated ideas like halo revolution anywhere any time and telecom access rather than ownership, which refers to VPTs even in deep rural India.

Thus, a plethora of changes were being initiated by the government in the structure of the sector with the silent strokes given to the sector during 1980's in both the services scenario and the manufacturing scenario. The above factors along with the changing vision of the people on the expectations from the government led the government to think of introducing cellular mobile services in India, initially in the four Metros, namely, Bombay, Madras, Calcutta and Delhi, initially. It was an experiment considering these Metros as a test market and introduction of Cellular services there as test marketing the product/service in the country. The government thought that it would give necessary inputs for deciding on a pan India roll-out of the Cellular service.

⁵ The Athreya Committee, 1991, set the agenda for the telecom privatization and growth of recent years, enabling India's IT revolution and global recognition. It had other members like Dr. Sam Patroda; Mr. N Vittal, IAS; Dr. V. Krishnamurthy; late Mr. M. R. Pai, Consumer Activist etc.

⁶ *Economic Survey 1997, Telecommunication*, Government of India, p.4.

⁷ The New Economic Policy of India was announced on 24.7.1991. It was aimed at meeting India's competitiveness in the global market; rapid growth of exports, attracting foreign direct investment; and stimulating domestic investments. With a view to achieve standards comparable to international facilities, the sub-sector of Value Added Services was opened up to private investment in July 1992 for the following services: (a) Electronic Mail; (b) Voice Mail; (c) Data Services; (d) Audio Text Services; (e) Video Text Services; (f) Video Conferencing; (g) Radio Paging; and (h) Cellular Mobile Telephone.

⁸ This was the beginning of a duopoly market structure in India. Duopoly is brought in Indian telecom with respect to GSM Mobile services and only in the four Metros.

⁹ 1994 and 1995 CMTS Licenses were initially for 10 years.

¹⁰ Telephone density has significant correlation with the per capita GDP of the area. (Effects of Globalization on developing countries, World Bank Publications. p. 30).The correlation between teledensity and per capita GDP could be represented by a straight line in a logarithmic graph. This relation was first mentioned by A.G.W. Jipp. a German engineer, in his book published in 1962. The graph is helpful to compare the telephone infrastructure development of different countries or regions, on the basis of teledensity. (Robert J. Chapuis and Amos E. Joel (1982):*100 Years of Telephone Switching*, Amsterdam: Elsevier Science Ltd).

“Telecommunications should be regarded as a complement to other investments and an essential component in the development process which can raise productivity and efficiency in other sectors and enhance the quality of life in the developing world. ... There is moreover a clear link between investment in telecommunications and economic growth. The economic and social benefits an efficient telecommunications system confers on a community or a nation can be clearly perceived.” (The missing link, Report of the Independent commission for worldwide Telecommunications Development, December 1984).

- ¹² In February 1997, a multilateral agreement on basic telecommunications services was agreed to among member governments of the World Trade Organization. As part of this agreement, the Indian government has reaffirmed its commitment to further liberalize the Indian telecommunications sector through the licensing of new basic and cellular service providers. (As filed with the Securities and Exchange Commission on October 2, 2006, *Securities And Exchange Commission*, Washington, D.C., Form 20-F, Annual Report Pursuant to Section 13 Or 15(D) of The Securities Exchange Act Of 1934, for The Fiscal Year ended March 31, 2006, Commission files number 1-15252).
- ¹³ See for more details- <http://cis-india.org/telecom/resources/national-telecom-policy-1994>; and http://www.trai.gov.in/Content/telecom_policy_1994.aspx, visited on 10th April 2014.
- ¹⁴ Delhi Science Forum Vs. Union of India – AIR 1996 SC 1356.
- ¹⁵ Vide a letter dated 23rd February, 1994 issued by the Chairman, Telecom Commission, Government of India in respect of “*VSNL’s euro issue – policy regarding paging services and monopoly of VSNL*” it was decided that VSNL would have a monopoly for 10 years in basic services (voice telephony) starting from 1st April, 1994. It (The assurance of guaranteed monopoly status for a period till 31st March, 2004 for VSNL in International Long Distance (ILD) Services) was also confirmed that the Union Cabinet had decided upon maintaining status quo as regards VSNL’s monopoly status. On 26th March, 1999 the Government of India approved and announced the New Telecom Policy 1999 (NTP). The NTP explicitly stated that “*The subject of opening of International Telephony Service to competition will be reviewed by the year 2004.*”
- ¹⁶ Sunil Mani (2008): “Growth of India’s Telecom Services (1991-2007): Can it lead to emergence of a manufacturing hub?” *Economic & Political Weekly*, January 19, 2008.
- ¹⁷ CDMA technology could offer limited mobility also to the customers as they could move within the SDCA (A short distance of around 30 kms within an SSA). Thus, CDMA was a fascinating technology and later a private operator proved that the CDMA technology could offer total mobility to the customers through integrating looping technology. Thus, it was high time that the government accepted the technological

advancements and its commercial implementation for the public, instead of clinging on to the legal terminology and age old provisions of the Act. In effect, there was violation of license rules when CDMA technology was used to provide mobility to the customers. Because, corDECT, an indigeneous and cost-effective technology for providing fixed wireless local loop solution was developed by the IIT Chennai. It was a challenging advancement highly acclaimed by the UNDP as a fast and cheaper mode of accessing internet in developing countries and was adopted by various operators in India, as a value addition to the wired segment. At this time, Tata tele services and the Reliance Communications came up with the proposal for utilizing CDMA technology for the same result as expected from the use of corDECT and claimed it to be cheaper to corDECT. “The technology being mainly developed for Cellular Services could also provide subscriber mobility. This move blurred the distinction between basic services and cellular mobile services.” (Varadharajan Sridhar, Telecom revolution in India, Oxford University Press). Thus, came into being the WLL-LM services in India. Making use of it, the customers were provided extended mobility in violation of the licensing norms. On the issue of violation of norms the ministerial group on Telecom and IT committee noted that ‘if technology allows limited mobility as an extended service to the advantage of the customers, then it should be permitted.’ Thus, here the scenario being witnessed is that a technology break out, challenging the existing practices and laws in the telecommunication services segment.

¹⁸ http://www.trai.gov.in/Content/ntp_1999.aspx, visited on 18th June 2013.

¹⁹ Level playing field with respect to telecom liberalization refers to the demand of the private operators that they were ready to commercially compete with a company and not with a Government arm (DoT) providing telecommunication services in the same territory.

²⁰ For introducing mobile telephony to India, it was called as a Value Added Service initially.

²¹ Social pricing is not in fact a realistic or cost based pricing for any product or service. Social pricing refers to “what the traffic can bear”.

²² Price skimming is a pricing strategy in which a marketer sets a relatively high price for a product or service at first, then lowers the price over time.

²³ Pricing strategy in competition where prices are set very low undercutting the competitors, may be even lower than the cost of production, so as to drive out competition, and as an attempt to capture greater market share and become a dominant player.

²⁴ Under this pricing structure the person initiating the call should pay the entire cost of the call. If a call is made between two mobile users, then the person making the call pays the entire cost of the call. In the same way, if a call is made from a fixed network to a mobile subscriber then the user on the fixed network pays the entire cost of the call. In both these examples of CPP, the user receiving the call does not pay directly for reception of a call. (Project On: Critique of The Trai Consultation Paper On Calling Party Pays (CPP), Galia Kaplan, Jasneet Singh, Karthik Mahadevan, Prashant Narula, Rajan C. Indian Institute of Management, Ahmedabad,2001)

²⁵ Rural and remote areas cause higher capital cost of providing telecom services, and also generate lower revenue due to lower population density, low income and lack of commercial activity. Thus normal market forces alone would not direct the telecom sector to adequately serve backward and rural areas. Keeping in mind the inadequacy of the market mechanism to serve rural and inaccessible areas on one hand and the importance of providing vital telecom connectivity on the other, most countries of the world have put in place policies to provide Universal Access and Universal Service to ICT.

The New Telecom Policy - 1999 (NTP'99) provided that the resources for meeting the Universal Service Obligation (USO) would be raised through a 'Universal Access Levy (UAL)', which would be a percentage of the revenue earned by the operators under various licenses. The Universal Service Support Policy came into effect from 01.04.2002. The Indian Telegraph (Amendment) Act, 2003 giving statutory status to the Universal Service Obligation Fund (USOF) was passed by both Houses of Parliament in December 2003. The Rules for administration of the Fund known as Indian Telegraph (Amendment) Rules, 2004 were notified on 26.03.2004. As per the Indian Telegraph Act 1885 (as amended in 2003, 2006 and 2008), the Fund is to be utilized exclusively for meeting the Universal Service Obligation. (<http://www.usof.gov.in/usof-cms/home.jsp>)

²⁶ Indian telecommunication sector, even though was a natural monopoly legalized by the law, it was a benevolent monopoly, with the aim of serving the society. It means that the government of India ran telecommunication services just as a successor to the British rule. The British had not given it a greater social dimension, even though they funded slow but gradual building up of the infrastructure connecting places of commercial importance or seats of power/provinces as far as they are concerned. They never had the goals of national integration or mobility of people and improvement of the living standards of the subject people. The Government of India, as a successor to the British rulers took over the assets as public assets vested with it centrally for administration deriving adequate powers from various sources – Constitution of India, Existing telegraphy laws and subsequent industrial policy declarations - and continued building up the network in a tardy phase on the basis of incremental budgeting. There were no

serious thoughts or conscious efforts for building it up as a national economic infrastructure or social infrastructure which would benefit development of the nation, the economy and improve the living standards of the people. Instead, it was viewed from the point of view of national security, and a strategic importance was assigned to it. In fact, in India, the telecom network was given an infrastructure status recently only, until the time it was a sacred cow. Therefore, even though it was a monopoly of the sort (as the government of India was the only supplier of the services) it was not a commercial monopoly rather it was a benevolent monopoly. It is stated so, because of the fact that the government had given pricing (i.e. tariff fixation aspects for telephone services) a welfare dimension with socialist ideals and cross-subsidy, with the sole aim of inclusive growth.

- ²⁷ The Indian Telegraph Act was enacted in 1885. It gave the exclusive privilege of establishing, maintaining and working of “telegraphs” to the Central Government. It also empowered the Government to grant licences on such conditions and in consideration of such payments as it thought fit, to any person to establish, maintain or work a telegraph in any part of India. (Dr. Subramanian Swamy versus Union of India and others,2011).
- ²⁸ This company was established on January 25, 1881, as the result of an agreement between Edison, Alexander Graham Bell, the Oriental Bell Telephone Company of New York and the Anglo-Indian Telephone Company, Ltd. The company was licensed to sell telephones in Greece, Turkey, South Africa, India, Japan, China, and other Asian countries. (*The Thomas Edison Papers*, “The year of Innovation”)
- ²⁹ This view is accepted by many as the Act is called as the Indian Telegraph Act, naming the Act with the first telecommunication equipment and continuing the same even after the introduction of mobile communication.
- ³⁰ “Chinese checkers on border board: Will India make the winning move?” , A.G.Noorani, *The Economic Times*, 11 JUNE 2012.
- ³¹ www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm, visited on 15th October 2013.
- ³² www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm, visited on 15th October 2013.
- ³³ Dennis C. Canterbury(2012): Capital Accumulation and Migration, Studies in Critical Social Sciences, USA, BRILL, p.88
- ³⁴ Access to POI is compulsory under the GATS and it is ensured through the principles laid down in the reference paper with the aim of eliminating the possibility of abuse of dominant position by the incumbent operator(s) in the country.