

## **Evolution of Telecom Sector in India**

<sup>1\*</sup>Kapil Kumar, <sup>2</sup>Kapil Kumar  
<sup>1</sup>*Evolution Of Telecom Sector In India*  
<sup>2</sup>*Ph.D Scholar - Singhania University*  
Corresponding Author: \*Kapil Kumar

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**ABSTRACT:** The telecom sector has impacted every aspect of our lives across all States in India. It has been recognized as a key to the rapid growth and modernization of the economy and a very important and significant tool for the socio-economic development. The sector has come a long way from being monopolized by the government of India to the current state wherein, Private participation from Industry is allowed and actually has become one of the largest market in the world.

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### **I. INTRODUCTION**

The telecommunications industry has an impact on every aspect of our lives, from the simple reality of enabling telephonic communication between people in different locations to enabling supply-chains to work seamlessly across continents to create products and fulfill demands. Telecommunication services are now recognized as a key to the rapid growth and modernization of the economy and an important tool for socio-economic development for a nation.

#### **Evolution of Telecom Sector in India**

The modern system of communications in India started with the establishment of telegraph network. In order to ensure telegraph network's exclusivity and establish government control over all electronic communications, Government of India has come up with various telegraph statutes, which laid the foundation of the present regulatory framework governing telecommunications (both wired and wireless). In early days, India witnessed increasing number of wired telephone connections. Even when wireless communication was introduced in the form of cellular phones, it was not immediately accepted by the Indian masses, mainly on account of high price of cellular phones as well as high tariff structure prevalent at that point in time. With the reduction in price of Mobile phones and mobile tariff, there was increasing adoption of Mobile communications. Telecom industry in India is having the lowest telecom tariff globally.

Like elsewhere, telecommunications in India started as a state monopoly. In the 1980s, telephone services and postal services came under the Department of Posts and Telegraphs. In 1985, the government of India separated the Department of Post and carved out the Department of Telecommunications ("DoT"). As part of reforms exercise taken up by the government, it was set up two new public sector undertakings: Mahanagar Telephone Nigam Limited ("MTNL") and Videsh Sanchar Nigam Limited ("VSNL"). MTNL looked after telecommunications operations in two megacities, Mumbai and Delhi. VSNL provided international telecom services in India. DoT continued to provide telecommunications operations in all regions other than Delhi and Mumbai. Telecommunication services were not treated to be a necessity that should be made available to all people across all States in India but rather a luxury item for few select people.

In the 1990s the entire telecom sector in India was owned, controlled and operated by the Government of India, which was liberalized and private sector participation was allowed in a progressive manner. To begin with, telecom manufacturing sector was deregulated and the government of India then allowed private players to provide value added services ("VAS") such as paging services. In 1994, the government formulated the National Telecom Policy 1994 ("NTP 1994"). Under NTP 1994, it was recognized that existing government resources would not be sufficient to achieve telecom growth as envisaged and hence it becomes really important to bring private investment to bridge the resource gap especially in areas such as basic services. As markets and telecom technologies started converging and the differences between voice (both fixed and wireless) and data networks started blurring, the need had emerged for developing the modern telecom network. Accordingly, private sector participation was allowed in basic services.

The government anticipated that a major part of the India's growth would be reliant on direct and indirect contributions of the telecom sector and accordingly it was felt the need for a comprehensive and forward looking telecommunications policy. It has then paved way for New telecom Policy 1999 ("NTP 1999"),

which largely focused on creating an environment for attracting continuous investment in the telecom sector and allowed creation of communication infrastructure by leveraging on the new technological development.

Most importantly, the government recognized the necessity to separate the government's policy wing from its operations wing so as to create a level playing field for private operators. Therefore, the NTP 1999 directed the separation of the policy and licensing functions of DoT from the service provision functions. In line with the recommendation of NTP 1999, the Government corporatized the operations wing of DoT in October 2000 and created it as Bharat Sanchar Nigam Limited ("BSNL") which operates as a public sector undertaking. Thereafter in 2002, the monopoly of VSNL also came to an end. Government then issued licenses to select operators to provide Basic & Cellular Services in India. Unified Access Regime: Prior to the introduction of Unified Access Regime, basic and cellular operators were issued separate licenses to operate and provide basic and cellular services in different telecom circles in the country.

Under unified licensing, a Telecom service provider can offer both fixed and mobile services. Thus, while cellular operators can offer basic services, basic operators can offer cellular services all under the same license. Further, as part of the unified licensing, the Government has no control over technology which is actually left to the market forces. Unified licensing has greatly benefitted the consumers in terms of lower prices due to the economies of scale and affordable telecommunication services. Further unified licensing also simplifies the procedure of providing license in the telecom sector and thereby ensures flexibility and efficient utilization of resources keeping in mind the technological developments.

It is worth to be noted that TRAI in its January 2005 Recommendations on Unified Licensing has rooted for a new licensing regime wherein there will be no restrictions on usage of Internet Telephony or other IP enabled services provided that they are offered by operators with Unified License who have duly paid the prescribed registration charges and who will be subjected to license fees.

**Interconnection:** India today has a plurality of service providers and service networks. In such a situation, efficient interconnection between a variety of access networks (such as fixed, mobile, national long distance and international long distance) has to interconnect to make national and international connectivity possible. In 2003 TRAI implemented the Telecommunications Interconnection Usage Charges Regulation to fix terms and conditions of interconnectivity between service providers and to regulate arrangements among service providers for sharing their revenue derived from provision of telecommunication services.

A telecom license is an agreement between Department of Telecommunications (licensor) – a company owned by Government of India and the operator/service provider (licensee) and is only entered into upon the fulfillment of various conditions by the service provider. Telecommunication service in India can only be permitted with a valid license/registration.

It should be noted that the government is bound to ensure that its licensing decisions are rational, transparent and free from arbitrariness. The courts have time and again upheld this principle of transparency. In the case of Delhi Science Forum v Union of India, the decision of the government to invite tenders from non-governmental and private entities for license to provide telecommunications services was challenged in a writ petition wherein it was contended that the sensitive nature of telecommunications mandated that it should not be placed in the hands of the private sector and any step in this direction would not only endanger the national security of the country but would not serve the economic interest of the country. The Supreme Court dismissed the writ and categorically held that the privatization policy adopted by the government is a necessary consequence of liberalization and the grant of telecommunications licenses to non-governmental organizations would greatly improve telecom services. However the Supreme Court also emphasized the procedures adopted for such grant should be "reasonable, rational and in conformity with the conditions which have been announced."

The telecommunication services can be categorized into following main categories which are as under:

**Unified Access Services ("UAS") and Cellular-Mobile Telephone Services ("CMTS")** The country is divided into 23 service areas consisting of 19 telecom circle service areas and 4 metro service areas for providing UAS and CMTS.

**UAS:** UAS operators can provide, within their area of operation, wireline (basic) as well as wireless (cellular) services in a service area. Wireless services include Full Mobile, Limited Mobile and Fixed Wireless services. Further, UAS operators can also provide voice mail, audiotex services, video conferencing, videotex, e-mail, Closed User Group (CUG) as Value Added Services over its network to the subscribers falling within its

service area on non-discriminatory basis. No service can be provided by the UAS operator for which a separate license is required. However, intimation before providing any other VAS has to be sent to the DoT and TRAI.

**CMTS:** CMTS operators are free to provide, within their area of operation, all types of mobile services including voice and non-voice messages, data services and Public Call Offices (PCOs) utilizing any type of network equipment, including circuit and/or package switches that meet the relevant International Telecommunication Union (ITU) /Telecom Engineering Centre (TEC) standards<sup>18</sup>.

The UAS and CMTS operators are required to pay a certain percentage of Adjusted Gross Revenue (“AGR”) as license fee apart from paying spectrum charges. Frequencies are assigned by the WPC wing of the DoT from the frequency bands earmarked in the applicable National Frequency Allocation Plan and in coordination with various users. Consequent upon announcement of guidelines for Unified Access (Basic & Cellular) Services licenses in November 2003, some of the CMTS operators have been permitted to migrate from CMTS license to UAS License.

### **National Long Distance (“NLD”) and International Long Distance (“ILD”)**

**NLD:** It refers to the carriage of switched bearer telecommunications service over a long distance and NLD service licensee have the right to carry inter-circle traffic excluding intra-circle traffic except where such carriage is with mutual agreement with originating service provider. NLD service licensees can make mutually agreed arrangement with the Basic Service Providers for picking up the traffic for the leg between Long Distance Charging Centre (LDCC) and Short Distance Charging Centres (SDCCs).

**ILD:** It is defined as a network carriage (also called Bearer) service, providing the NLD operators in the country International connectivity to network facilities operated by foreign carriers in other countries. ILD service providers can provide bearer services so that end-to-end tele-services such as voice, data, fax, video and multi-media can be provided by Access Providers to the customers.

### **Internet Service Licenses (ISP)**

ISP licensees are primarily allowed to provide services such as Internet access (through any method including IPTV) and Internet telephony (which is a service to process and carry voice signals offered through the internet by the use of personal computers (“PC”) or Internet protocol based equipment). Currently the ISP license allows limited internet telephony by permitting connections between the following:

- PC to PC (within or outside India).
- PC or an Adapter conforming to standard of any international agencies like ITU or IETF etc in India to PSTN/PLMN abroad.
- Any device / Adapter conforming to standards of International agencies like ITU, IETF etc. connected to

ISP node with static IP address to a similar device within or outside India. India is currently the world’s second-largest telecommunications market with a subscriber base of ~1.05 billion and has registered strong growth in the past 15 years. The Indian mobile economy is growing with a rapid rate and will contribute substantially to India’s Gross Domestic Product (GDP). The country is the fourth largest application ( App ) based economy in the world. The liberal and reformist policies of the Government of India have been largely instrumental along with strong consumer demand in the rapid growth of the Indian telecom sector. The government has enabled easy accessibility of telecom equipment through a defined regulatory framework that has ensured availability of telecom services to consumer at an affordable prices. The deregulation of Foreign Direct Investment (FDI) norms has made the sector one of the fastest growing, which has generated huge employment opportunity in India.

The Indian telecom sector is further expected to generate approximately five million direct and indirect jobs over the next 5 - 7 years. The employment opportunities are expected to be created with the joint efforts to increase penetration in rural areas and the rapid increase and adoption of smartphone and thereby rising Internet usage. India is expected to overtake US as the second-largest smartphone market globally by 2018 and to maintain high growth rate over the next few years as people switch to smartphones and gradually upgrade to 4G.

### **Market Size**

The mobile industry is expected to create a total economic value of Rs 14 trillion (US\$ 217.37 billion) by the year 2025. It would generate around 3 million direct job opportunities and 2 million indirect jobs during this period. The total number of telephone subscribers in the country rose by 11.13 per cent year-on-year to 1,151.78 million in the September-December quarter of 2016. The Indian telecommunication services market will likely grow by 10.3 per cent year-on-year to reach US\$ 103.9 billion by 2025. The revenue of mobile handset industry rose 22 per cent to Rs 1.36 trillion (US\$ 21.12 billion) in 2016. In 2017, around 200 million mobile handsets will be made out of India out of the 270 million mobile handsets to be shipped.

According to the Ericsson Mobility Report India, smartphone subscriptions in India is expected to increase five-fold to ~950 million users by 2025, while the total smartphone traffic is expected to grow seventeen-fold to 5Exabytes (EB) per month by 2025.

## II. CONCLUSION

The telecom sector in India has traversed a very long path from Government Monopoly to the sector opening to the private participation. A lot of Indian business houses and foreign multinational companies participated and help India in bringing up this sector to the current state, wherein it has impacted every aspect of our lives across all States in India. It has helped India as a key enabler to the rapid growth and transform various Industries of doing business / service operations, which has eventually helped in the overall socio-economic development.

## REFERENCES

- [1]. Ramesh Subramanian, (2008), “ The (Continuing) Evolution of India’s Telecom Policy, Information Systems Management Department, School of Business, Quinnipiac University, Hamden, CT USA, Publisher: Communications of IIM Ahmedabad
- [2]. Harsh Dwivedi &Kavya Saini, (2011), Indian Telecom Sector: Paradigm Shift, INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT & MANAGEMENT, VOLUME NO. 1 (5), Page 29.
- [3]. Vaishali & Pravin Shaikh, (2014), Business strategies in Telecom sector in India, INDIAN JOURNAL OF APPLIED RESEARCH, Volume No. 4(6), Page 263.
- [4]. Muhammad Hassan Raza & Imran Raza, (2013), Technological Management and Modern Telecommunication Market Place, World Applied Sciences Journal, Volume No. 21 (11), Page 1651.
- [5]. Cuwen P. Assessing the meltdown in the telecommunication sector. 2005.
- [6]. Menon S. The role of diverse institutional agendas in the importation of convergence policy into the Indian communications sector. 2005.
- [7]. Nigam V, Thakur T, Singh VK, Singh RP. Benchmarking of Indian mobile telecom operators using DEA with sensitivity analysis. Benchmark Int J. 2012; 19(2):219–38.
- [8]. Bhargava, Manish, Bhardwaj A, Rathore APS. Six Sigma Methodology Utilization in Telecom Sector for Quality Improvement- A DMAIC Process. IJEST. 2010; 2(12).
- [9]. Bhattacharya M. IES Telecom Sector in India: Vision2020. Department of Telecommunications, Ministry of Communications & IT, and Government of India. 2010.
- [10]. Arora M. Role of CRM in the changing face of Indian telecom industry. VSRD International Journal of Business and Management Research. 2013 Apr; 3(4)

\*Kapil Kumar. “International Journal Of Engineering Research And Development .” International Journal Of Engineering Research And Development , vol. 13, no. 09, 2017, pp. 01–04.