

## Telecom Sector in India from Origin to Horizon: A Review over policies, regulations and strategies.

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**Abstract:** India is the world's fastest growing industry in the world in terms of number of wireless connections after China, with 811.59 million mobile phone subscribers<sup>1</sup>. TRAI has released their monthly Indian Telecom subscription report, and according to it, India has total of

1002 million telecom subscribers, out of which 975.78 are wireless (mobile) and 26.27 are wireline (landline) Urban India witnessed a monthly subscription increase of 0.01% percent or 0.05 million subscribers, while rural mobile subscriber base increased slightly by 0.57 percent or 2.38 million<sup>2</sup>. Indian telecom sector is more than 165 years old. Telecommunications was first introduced in India in 1851 when the first operational land lines were laid by the government near Kolkata (then Calcutta), although telephone services were formally introduced in India much later in 1881. Further, in 1883, telephone services were merged with the postal system. In 1947, after India attained independence, all foreign telecommunication companies were nationalized to form the Posts, Telephone and Telegraph (PTT), a body that was governed by the Ministry of Communication. The Indian telecom sector was entirely under government ownership until 1984, when the private sector was allowed in telecommunication equipment manufacturing only. The government concretized its earlier efforts towards developing R&D in the sector by setting up an autonomous body – Centre for Development of Telematics (C-DOT) in 1984 to develop state-of-the-art telecommunication technology to meet the growing needs of the Indian telecommunication network. The actual evolution of the industry started after the Government separated the Department of Post and Telegraph in 1985 by setting up the Department of Posts and the Department of Telecommunications (DoT).



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**Key words:** Telecommunication, Mobile, Broadband, ISP, Regulations, Policies, Strategies, Wireless Cellular Mobile Communication.

**Beginning of the Telecommunication in India:** Telephone services in India began in a very small scale with the commissioning of a 50-line manual telephone exchange in 1882 in Kolkata. This was less than five years after the invention of the telephone by Alexander

Graham Bell. India had approx. 82,000 telephone connections at the time of independence (1947) and by 1984 the number of connections had slowly risen to 3.05 million<sup>3</sup> India's telecom network was notoriously unreliable and only available to a small section

<sup>1</sup><https://www.linkedin.com/pulse/history-indian-telecommunication-varun-reddy?forceNoSplash=true>

<sup>2</sup>Telecom Regulatory Authority of India (TRAI)

<sup>3</sup><http://www.knowindia.net/telecom.html>



of households along with the corporate sector. The telecom sector was a government monopoly until 1994 when liberalization gradually took place. Cellular service was launched in November 1995 in Kolkata.

In 1990s the telecom sector was opened up by the Government for private investment. In 1995 TRAI (Telecom Regulatory Authority of India) was setup. This reduced the interference of Government in deciding tariffs and policy making. The Government of India corporatized the operations wing of DoT in 2000 and renamed Department of Telecom as Bharat Sanchar Nigam Limited (BSNL).

In last 10 years many private operator's especially foreign telecom companies successfully entered the Indian wireless telecom market. The telecom sector in India experienced a speedy growth over the past decade on account of regulatory liberalization structural reforms and competition, making telecom one of the major substances in India's growth story.

### **Evolution of Wireless Communication in India**

#### **Pager Services**

Pager communication technology was launched in India in the year 1995. Pagers were looked upon as luxury devices that offered the much needed mobility in communication, especially for businesses. The pager based business for telecommunication was on the top in 1998 with the subscriber base reaching nearly 2 million<sup>4</sup>.

- **Mobile Communication**

First mobile telephone service on non-commercial basis started in India on 48th Independence Day at country's capital Delhi. The first cellular call was made in India on July

31st, 1995 over Modi Telstra's MobileNet GSM network of Kolkata. Later mobile telephone services were divided into multiple zones known as circles. Huge competition among the service providers and the price conscious market in India, has triggered the prices to drop and therefore cheapest call rates in the world.

### **Broadband communication**

Although Year 2007 had been declared as "Year of Broadband" in India. Yet India ranks one of the lowest provider of broadband speed as compared to other countries. Minimum broadband speed of 256kbit/s but speed above 2Mbits is still in an emerging stage.. Broadband growth has been overcome by many issues such as . Complicated tariff structure, Regional boundaries, metered billing, High charges for right of way, have all resulted in difficulty to the growth of broadband services in India

- **Next Generation Network (NGN)**

Next Generation Networks, multiple access networks can connect customers to a core network based on IP technology. These access networks include fiber optics or coaxial cable networks connected to fixed locations or customers connected through Wi-Fi as well as to 3G networks connected to mobile users.

- **Internet in India**

After US and Japan, India stands third with the largest Internet users in the world of which 40% of Internet being used is via mobile devices.

In October 2015, there were 375 million internet users in India. Currently, India has the

<sup>4</sup><http://telecomtalk.info/history-of-indian-telecommunication/67789/>



third largest internet users' base in the world but it is estimated that in beginning of 2016, India is expected to overtake the US as the second largest Internet users' base in the world<sup>5</sup>. About 306 million of these will access Internet from their mobile devices, up from 276 million in October this year, according to the report by Internet and Mobile Association of India (IAMAI) and IMRB.

“While Internet in India took more than a decade to move from 10 million to 100 million and 3 years from 100 to 200 million, it took only a year to move from 300 to 400<sup>6</sup> million users. Clearly, Internet is in majority in India today. Ninety-four per cent of users access the Internet through their mobile phones in Urban India. However, 64 per cent also use the desktop or laptop to access the Internet. But 90 per cent of those who use the mobile to access the Internet consider it their primary device for surfing.

- **Ecommerce Industry in India statistics**

No. of Indian consumers who opted the online medium for shopping in 2014 were more than 40 Million.

### **Policy and Regulations:**

#### **National Telecom Policy 1994**

In 1994, the Government announced the National Telecom Policy which defined certain important objectives, including availability of telephone on demand, provision of world class services at reasonable prices, improving India's competitiveness in global market and promoting exports, attractive FDI and stimulating domestic investment, ensuring India's emergence as major manufacturing /

export base of telecom equipment and universal availability of basic telecom services to all villages

#### **Telecom Regulatory Authority of India (TRAI);**

The entry of private service providers brought with it the inevitable need for independent regulation. The Telecom Regulatory Authority of India (TRAI) was, thus, established with effect from 20th February 1997 by an Act of Parliament, called the Telecom Regulatory Authority of India Act, 1997, to regulate telecom services, including fixation/revision of tariffs for telecom services which were earlier vested in the Central Government

#### **New Telecom Policy 1999**

The most important milestone and instrument of telecom reforms in India is the New Telecom Policy 1999 (NTP 99). The New Telecom Policy, 1999 (NTP-99) was approved on 26th March 1999, to become effective from 1st April 1999. NTP-99 laid down a clear roadmap for future reforms, contemplating the opening up of all the segments of the telecom sector for private sector participation

#### **National Long Distance**

National Long Distance opened for private participation. The Government announced on 13.08.2000 the guidelines for entry of private sector in National Long Distance Services without any restriction on the number of operators.

#### **International Long Distance**

In the field of international telephony, India had agreed under the GATS to review its opening up in 2004. However, open

<sup>5</sup><http://www.iamai.in/media/details/4486#sthash.QVPR3rSm.dpuf>

<sup>6</sup><http://www.iamai.in/media/details/4490>



competition in this sector was allowed with effect from April 2002 itself

### **Unified Access Services**

Unified access license regime was introduced in November 2003. Unified Access Services operators are free to provide, within their area of operation, services, which cover collection, carriage, transmission and delivery of voice

### **Internet Service Providers (ISPs)**

Internet service was opened for private participation in 1998 with a view to encourage growth of Internet and increase its penetration. The sector has seen tremendous technological advancement for a period of time and has necessitated taking steps to facilitate technological ingenuity and provision of various services

### **Broadband Policy 2004**

Recognizing the potential of ubiquitous Broadband service in growth of GDP and enhancement in quality of life through societal applications including tele-education, tele-medicine, e-governance, entertainment as well as employment generation by way of high-speed access to information and web based communication; Government has announced Broadband Policy in October 2004.

### **National Telecom Policy – 2012.**

Telecommunication has emerged as a key driver of economic and social development in an increasingly knowledge intensive global scenario, in which India needs to play a leadership role. National Telecom Policy-2012 is designed to ensure that India plays this role effectively and transforms the socio-economic scenario through accelerated equitable and inclusive economic growth by laying special emphasis on providing affordable and quality

telecommunication services in rural and remote areas. Thrust of this policy is to underscore the imperative that sustained adoption of technology would offer viable options in overcoming developmental challenges in education, health, employment generation, financial inclusion and much else. NTP-2012 is an initiative to create a conducive policy framework to address these issues and to touch lives of all citizens and transform India. By formulating a clear policy regime, NTP-2012 endeavors to create an investor friendly environment for attracting additional investments in the sector apart from generating manifold employment opportunities in various segments of the sector.

### **Strategies covered under NTP-2012**

#### **1. Broadband, Rural Telephony And Universal Service Obligation Fund (Usf)**

To develop an eco-system for broadband in close coordination with all stakeholders, including Ministries/ Government Departments/ Agencies to ensure availability of media for last mile access, aggregation layer, core network of adequate capacity, affordable equipment including user devices, terminals and Customer Premise Equipment and an environment for development of relevant applications.

#### **2. R&D, Manufacturing And Standardization Of Telecommunication Equipment**

To promote R&D, Design, development and manufacturing in the domestic telecom equipment manufacturing.

#### **3. Licensing, Convergence And Value Added Services**

To orient, review and harmonize the legal, regulatory and licensing framework in a time bound manner to enable seamless delivery of



converged services in a technology and service neutral environment.

#### **4. Spectrum Management**

To move at the earliest towards liberalization of spectrum to enable use of spectrum in any band to provide any service in any technology as well as to permit spectrum pooling, sharing and later, trading to enable optimal utilization of spectrum through appropriate regulatory framework.

#### **5. Telecom Infrastructure/ Row Issues, Green Telecom, Clear Skyline, Mitigation Efforts During Disasters And Emergencies**

To emphasize the active role of both private sector and Government including the State Governments and Local bodies to enable the growth of telecom infrastructure necessary for meeting the telecommunication demand of the country and leveraging USOF where appropriate.

#### **6 Quality Of Service And Protection Of Consumer Interest**

To strengthen the regulator for ensuring compliance of the prescribed performance standards and Quality of Service (QoS) parameters by the Telecom Service Providers.

#### **7. Security**

To mandate and enforce that the Telecom Service Providers take adequate measures to ensure the security of the communication flowing through their network by adopting contemporary information security standards.

#### **8. Skill Development**

To assess the manpower requirement at different skill and expertise levels by partnering with National Skill Development Council and industry to identify the relevant needs of the sector and prepare a roadmap.

#### **10. Cloud Services**

To recognize that cloud computing will significantly speed up design and roll out of services, enable social networking and participative governance and e-Commerce on a scale which was not possible with traditional technology solutions.

#### **11. Telecom Enterprise Data Services, Ipv 6 Compliant Networks And Future Technologies**

To formulate appropriate policies in the area of enterprise and data services to fuel further growth of India's ICTE sector and attract investments.

#### **13. Role Of Regulator, Changes In Legislation**

To review the TRAI Act with a view to addressing regulatory inadequacies/ impediments in effective discharge of its functions.

#### **14. Operationalization Of The Policy**

To take suitable facilitator measures to encourage existing service providers to rapidly migrate to the new regime in a uniformly liberalized environment with a level playing field.

**Conclusion:** India has gone a long way in the journey of telecom sector, also Govt. in India has taken very active participation for making Regulations, designing framework for new technologies and making and giving room to the new players. India is trying hard in keeping pace with the world.

Although we lack in infrastructure development, policy making, regulating the service providers, we are the fastest growing market in the world as far telecommunication is concerned. In the current year(2016) we are looking forward for entering into the 4<sup>th</sup> generation of the telecommunication





technology. Also India is very price conscious market so service providers are more focused in providing cheaper services sometimes compromising over quality.

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