Legislative Framework for Installing and Maintaining Communication Infrastructure in India

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ABSTRACT

Indian telecom sector is witnessing a very rapid development. Telecommunication has reached to the level of fundamental need. Such a huge infrastructure can not be developed without clear policies and framework. The telecom industry is one of the prime contributors to India's GDP. The once monopolistic market is today, highly competitive. This has necessitated the growth of India telecom infrastructure. The government of India believes that for rapid economic development backed by social welfare, the telecom infrastructure in India needs to be uplifted. This necessitates the formulation of a comprehensive telecom policy that visualizes the future of the Indian telecom market. By the beginning of 2007, the telecom network in India consisted of 48 million fixed-line connections. Nowadays, a enormous majority of the population has access to telephone services. The highly competitive environment has ensured low pricing of goods and services that caters to the weaker sections of the society. Moreover, the augmentation of Indian telecom infrastructure has also widened the scope of the telecom sector to other allied ventures like mobile services, Internet, cable TV services, E-Commerce, and other forms of Information Technology. In terms of long distance calls, India telecom infrastructure has made remarkable growth. The present telecom and mobile-phone service providers in India, apart from BSNL include Hutchison Essar, Reliance Communications, Bharti Airtel, Idea, Tata Indicom, and a few others. In this paper, the history and evolution of legislative framework of Indian communication sector is depicted.

KEYWORDS: Legislative framework, telecom, telegraph act, maintenance

I. INTRODUCTION

The telecom services have been accepted the world over as an essential tool for the socioeconomic progress of a country. It has become especially important in the recent years because of enormous development of information and communication technologies and their significant potential for the impact on the rest of the economy. Building suitable telecommunication infrastructure has the same effect on escalation of telecommunication as telecommunication services have on development of the economy. Infrastructure investments can affect intensification beyond adding to the capital stock. Results from a recent World Bank study on growth in 120 countries between 1980 and 2006 shows that for every ten percentage- point increase in penetrations of telecom services like fixed, mobile, broadband etc, there is an increase in growth by 0.73 percent to 1.38 percent (Qiang, 2010)[1]. As can be seen these escalation effects are noteworthy and stronger in developing countries than in developed ones (Figure 1). As several countries including India are at a relatively early stage of infrastructure expansion especially for broadband, they are likely to gain the most from investing in telecom networks to reach the critical mass for higher impact and before it results into diminishing returns.
Therefore, development of an sufficient telecommunication infrastructure has become one of the major goals of policymakers. Figure-1 shows the Impact of telecom penetration on growth.

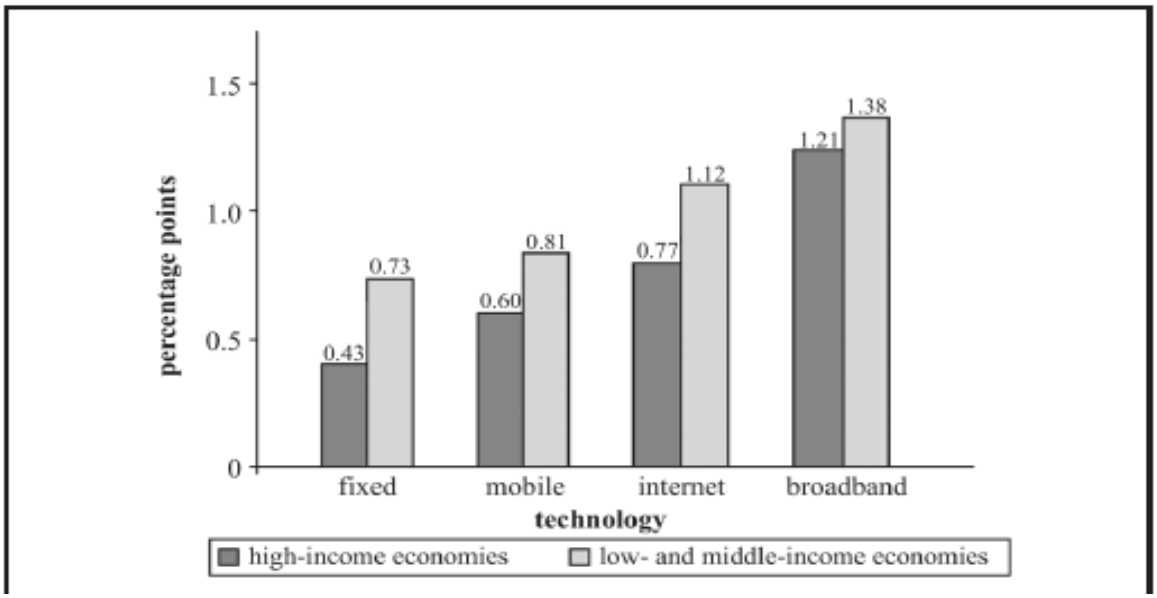

Figure1: Impact of telecom penetration on growth

Y axis represents the percentage point increase in economic growth per ten percentage point increase in telecommunication penetration.
Source: Qiang (2010)

NTP-99 had predicted the need for design of world class telecommunication infrastructure as the key to rapid economic and social development of the nation. Stressing the need for creation of necessary infrastructure for country's growth, India's Eleventh Five Year Plan (2007-12) includes strategies and plans for infrastructure development and inclusive growth, through both the public and private sectors [2]. Provision of telecommunications and broadband connectivity, to provide the benefits of the Internet to citizens all over the nation, has been included as vital infrastructure priority under this Plan. With substantial investment in telecom infrastructure expected over the coming years, it is important to have an effective policy framework in place. Mobile communication in future is not going to be limited between Person to Person but will extend to Person to Machine and Machine to Machine. Examples of applications for mass machine to machine services include smart power grid, smart metering, consumer products, health care and so forth. Number of devices to be connected on wireless platform is expected to be 50 billion globally by the year 2020 [2]. Expecting current development rates to prolong approximately 1.5 billion and 5 billion connections, including for devices, can be anticipated in India by the year 2015 and 2020 respectively. Maintaining such exponential escalation in mobile both for personal and machine communication and meeting the latent demand for broadband access calls for establishment of enormous infrastructure requiring significant investment. This infrastructure policy covers various elements of the infrastructure like fiber optic network, Base transceiver stations (BTS), cable landing stations, IP networks, evolving technologies like In Building Solutions, Distributed Antenna System etc. The telecom infrastructure can be classified as below.

1. Fixed Network
2. IP Network
3. Mobile and Wireless Network
4. Broadband Network
5. Long Distance Network

II. INDIAN TELEGRAPH ACT

In general terms, telecommunications infrastructure includes the organizations, personnel, procedures, facilities, and networks employed to transmit and receive information by electrical or electronic means [3].The telegraph laws of 1854, 1860 & 1870 did not provide the legal basis for telegraph department and telegraph licensees to use private property for their operations. As telegraph network developed and expanded with introduction of telephone, it became necessary for telegraph department to use private and local government authorities' properties to place and maintain lines and posts. The telegraph act established in 1885 deals with maintenance of telecom infrastructure. Section -10 of Part-III of telegraph act empowers telegraph authority to place and maintain telegraph lines and posts in any immovable property [4]. It reads as follows.

The telegraph authority may, from time to time, place and maintain a telegraph line under, over, along, or across, and posts in or upon any immovable property. The provisions for the same are as follows.

a. The telegraph authority shall not exercise the powers conferred by this section except for the purposes of a telegraph established or maintained by the [Central Government], or to be so established or maintained;

b. The [Central Government] shall not acquire any right other than that of user only in the property under, over, along, across in or upon which the telegraph authority places any telegraph line or post; and

c. Except as hereinafter provided, the telegraph authority shall not exercise those powers in respect of any property vested in or under the control or management of any local authority, without the permission of that authority; and

d. In the exercise of the powers conferred by this section, the telegraph authority shall do as little damage as possible, and, when it has exercised those powers in respect of any property other than that referred to in clause (c), shall pay full compensation to all persons interested for any damage sustained by them by reason of the exercise of those powers.

If a private owner or user obstructs or resists the telegraph authority's attempt to use its property, the telegraph authority may ask the district to intervene.Section-11 authorizes telegraph authority to enter private property for examining, repairing altering or removing any telegraph line or post. According to Delhi High court, the telegraph authority's accountability under this section is a corollary of its function under section -10 to maintain and operate telegraph equipment. According to section 18 (1), If any tree standing or lying near a telegraph line interrupts, or is likely to interrupt, telegraphic communication, a Magistrate of the first or second class may, on the application of the telegraph authority, cause the tree to be removed or dealt with in such other way as he deems fit. Section 19-A of the telegraph act states that 'Any person desiring to deal in the legal exercise of a right with any property in such a manner as is likely to cause damage to a telegraph line or post which has been duly placed in accordance with the provisions of this Act, or to interrupt or interfere with telegraphic communication, shall give not less than one month's notice in writing of the intended exercise of such right to the telegraph authority, or to any telegraph officer whom the telegraph authority may empower in the behalf.'

Section 19-B of the telegraph act states that The Central Government may, by notification in the Official Gazette, confer upon any licensee under section 4, in respect of the extent of his license and subject to any conditions and restrictions which the Central Government may think fit to impose and to the provisions of this Part, all or any of the powers which the telegraph authority possesses under this Part with regard to a telegraph established or maintained by the Government or to be so established or maintained. Provided that the notice prescribed in section 19A shall always be given to the telegraph authority or officer empowered to received notice under section 19A (1).

III. LEGAL FRAMEWORK FOR FIXED NETWORK

Fixed networks have been mainly deployed by the Basic Services Operators (BSO), the incumbent Public sector operators BSNL and MTNL, and some of the UAS licensees. For creating the switching and the transmission infrastructure, subject to the technical conditions specified in the license, the service providers are free to decide the number, location, technology and types of switching and transmission equipment. According to the license conditions, the technology should be based on standards issued by ITU/TEC or any other International Standards Organization/ bodies/Industry. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, shall be permissible for use regardless of its changed versions. The service provider is also obliged to furnish complete technical details with all calculations for engineering, planning and dimensioning of the system/network, concerned relevant literature, drawings, and installation materials regarding the applicable system. The service provider also has to ensure the Quality of Service (QoS) as prescribed by the licensor or TRAI.

IV.LEGAL FRAMEWORK FOR MOBILE NETWORK

The License conditions require the service providers to furnish details of the technology proposed to be deployed for operation of the service. It stipulates that the technology should be based on the standards issued by ITU/TEC or any other International Standards Organization/ bodies/Industry. Any digital technology having been used for a customer base of one lakh or more for a continuous period of one year anywhere in the world, shall be permissible for use regardless of its changed versions. The service provider has to follow the national fundamental plans including numbering plan, routing, transmission plan etc. To ensure rollout of network and facility based competition the UASL license conditions state that “The LICENSEE shall be responsible for, and is authorized to own, install, test and commission all the Applicable system
for providing the Unified Access Services under this License agreement.”

V. LEGAL FRAMEWORK FOR IP NETWORK

Internet Service Providers can set up ISP nodes according to the guidelines issued by the Licensor. Addressing scheme for Internet Telephony shall only conform to IP addressing Scheme of Internet Assigned Numbers Authority (IANA). IP addresses can have up to 128 bit binary address or higher. An ISP can set up International Gateway Station using satellite medium for Internet with prior approval of the Licensor. An ISP is permitted to set up, maintain and operate submarine cable landing station for international gateway for Internet with the prior approval of the Licensor. The Landing Station for International Gateway for Internet shall be used only for carrying Internet traffic.

VI. LEGAL FRAMEWORK FOR INFRASTRUCTURE SHARING

As per the terms and conditions of the CMTS/UAS Licenses, the access service providers were initially permitted sharing of “passive” infrastructure viz., building, tower, dark fiber etc. only. However, in April, 2008, in order to ensure an optimum utilization of the available resources and to bring down the cost of providing service, the Government issued ‘Guidelines on Infrastructure sharing among the Service Providers and Infrastructure Providers’. As per these guidelines, the service providers were permitted to share the active infrastructures limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only.

VII. LEGAL FRAMEWORK FOR INTERNET EXCHANGE

Internet offers access to content and users anywhere in the world. The ISPs have to secure network connections to all potential senders and recipients of content. Reciprocal interconnection makes it possible for an ISP to access the entire global Internet “cloud” for its subscribers. The Tier-1 ISPs can dictate interconnections terms and conditions. Smaller ISPs in remote areas must meet the entire cost of accessing large Tier-1 ISPs using expensive international bandwidth. In countries where there is no local facility for exchange of Internet traffic, the ISPs must pay for international transit facilities to deliver local traffic. An important way to reduce cost of Internet traffic for the ISPs is through development of Internet Exchange Points (IXPs). IXPs offer traffic switching and routing flexibility. By using an IXP, ISPs can individually and collectively reduce their bandwidth and line transmission costs, provide more reliable service with lower latency, and operate more efficiently. This arrangement improves quality of service by reducing the transmission time, number of routers and distance traffic must travel. It provides a neutral, universally supported “clearing house” for the exchange of traffic, making it possible to keep local traffic local. On the basis of recommendations made by TRAI in Sept 2002, National Internet Exchange of India (NIXI) was set up by the Department of Information Technology (DIT) in 2003. An ISP at any NIXI node must, at a minimum, announce all its regional routes to the NIXI router at that NIXI location. All ISPs connecting to that NIXI node are entitled to receive these routes using a single Border Gateway Protocol (BGP) session with the NIXI router. This will guarantee the exchange of regional traffic within a NIXI node. This is referred to as forced regional multi-lateral peering under the policy. In the event, one NIXI member is already providing transit to another NIXI member, the exchange of regional routes may also happen using a separate private connection between the ISPs. ISPs should announce only those routes that belong to their AS (Autonomous System), i.e. their own network, and their customer routes at the NIXI. An ISP in any region can aggregate traffic from other ISPs in the region and connect to the NIXI through a single connection. The NIXI router will only exchange information but not carry any transit traffic. All NIXI members must ensure that they suitably and proactively upgrade capacity from time-to-time so that they do not end up dropping traffic that other peers are exchanging with them. An ISP must upgrade its port capacity or take additional port if 95th percentile of its OUT or IN traffic in a month crosses 70% of its port capacity, for 3 months. For traffic exchange at a NIXI node between ISP A and ISP B, B will pay to A (through NIXI) an amount equal to Rs. 25 per Gbyte x [traffic from A to B - traffic from B to A]. Here, the prevalent concept is "Requester Pays" to promote domestic content. It is currently proposed that the settlement of this be done by paying this money to the NIXI and the NIXI pays the net of all such settlements to the respective ISP. The tariff of Rs. 25 per GB can be reviewed from time to time by NIXI based on the prevailing bandwidth prices [5].

VIII. CONCLUSION

Indian telecom sector needs a transparent and effective legal framework. Licensees should be covered under unified license. A single agency should be formed for certification and approval of mobile towers.

IX. REFERENCES

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