Bharti Airtel response to TRAI Consultation Paper on Issues Related to Telecommunications Infrastructure Policy

Overview of Telecom Infrastructure

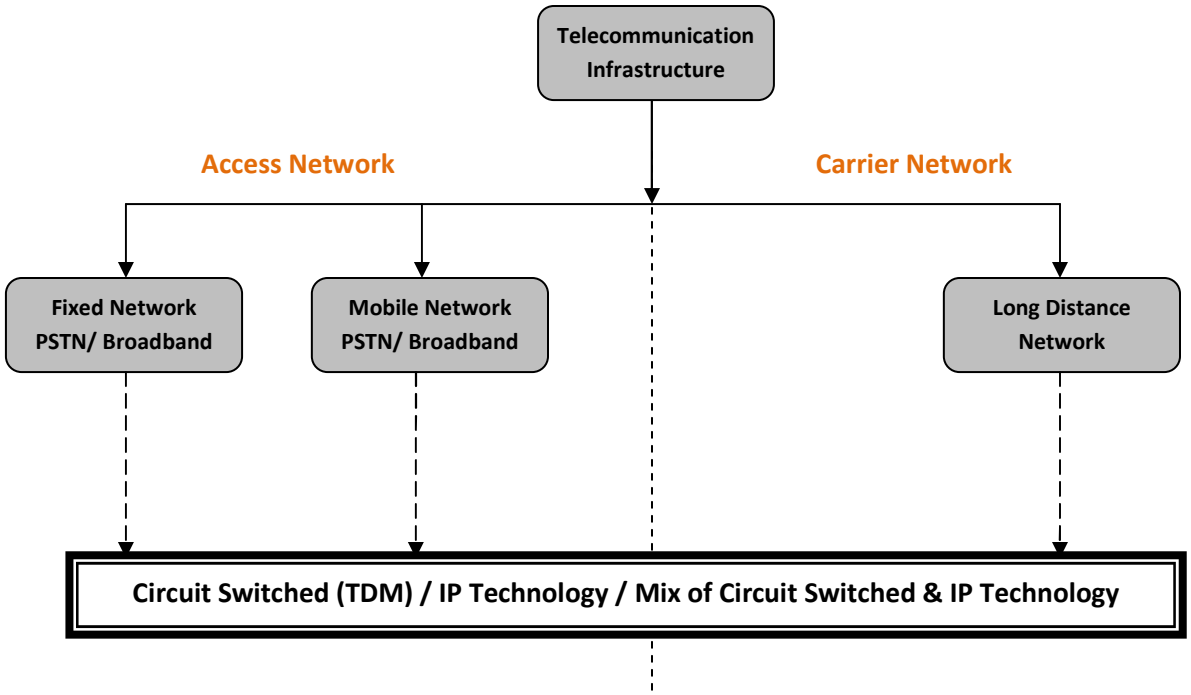
6.1 Do you agree with the classification of infrastructure elements described in this chapter? Please indicate additions/modifications, if any, particularly where you feel that policy interventions are required.

We tend to slightly dis-agree with the broad classifications done by the Authority. In our view the Telecommunications Network may be broadly classified as below:

1) Access Network: The access network may be fixed / mobile network for provision of PSTN/ Broadband Services to the end customer.

2) Carrier Network or the Long Distance Network

Both the Access as well as the Carrier network may deploy Circuit Switched (TDM) technology or IP technology or a combination of both for the provision of services to the end customer.



6.2 What measures can be taken to encourage more ILDOs and ISPs to set up cable landing stations?

At present there is no entry barrier to get into the business of Cable landing station as the ILD license is easily available at a fee of Rs. 2.5 Crores. However, it involves high initial costs in

setting up a Landing station that includes Land, Building, Backhaul connectivity, RoW Charges etc. It also involves considerable risk in making a large investment as the recovery of the costs is very slow and there is no certainty of the business. In light of above, following measures can be taken to encourage more ILDOs and ISPs to set up cable landing stations:

- ✓ Power to the operators shall be made available at cheaper rates instead of the commercial rates.
- ✓ Government shall consider lower license fee and other tax benefits for the ILDOs/ISPs setting up Cable landing station.
- ✓ Land and associated taxes for setting up a Cable landing station shall be waived off.

Internet Exchange Point

6.3 Do you perceive the need for effective Internet exchange point(s) in the country to efficiently route domestic IP traffic?

And

6.4 If your answer to issue in 6.3 is in affirmative, please comment on the licensing framework of the entities for setting up Internet Exchange Points in India.

And

6.5 Will it be desirable to permit those Unified licencees to setup IP exchange points in the country who have no vested interest in routing of the IP traffic?

- While we believe that there should be effective Internet exchange point(s) in the country to efficiently route domestic IP traffic, at the same time there shall not be any bar on the number/ ownership of the internet exchanges. This will not only bring the competition in the sector by ending any monopoly/inefficiency of the mandatory interconnection points but will also encourage the operator setting Internet exchange point to offer innovative tariffs to the interconnecting ISPs.
- Moreover, at present ISP license already allows an operator to act as an internet exchange point. Thus, there is no need to make any change in the current licensing framework or mandatory internet exchange point in the Country.
- It is submitted that making a mandatory interconnect point for ISPs will not serve the purpose as even today most of the small ISPs are connected to the one or more Class A ISPs which in turn are connected to each other via peering. However, the domestic exchange of internet traffic is very less as compared to international bandwidth usage as majority of the content is hosted outside India. Therefore, measures should be taken to bring more and

more content to India which will increase domestic traffic and also improve upon the domestic bandwidth utilization.

- Therefore, we suggest that, Government shall incentivize the operators in reducing the data centre costs by way of providing power, land etc. at a lower cost, so that content hosting costs becomes competitive in comparison to international market which in turn will encourage/ boost the hosting of content in India and domestic bandwidth utilization.

Mobile Virtual Network Operator

6.6 Please give your comments on the changes proposed in para 3.5 of Section C of Chapter 3.

Bharti Airtel Response:

The Authority has proposed the following modification in the MVNO Recommendations:

- *A Unified licencee who does not possess spectrum may be allowed to work as an MVNO in any service area. The Unified licencee ceases to be an MVNO if he gets his own spectrum.*
- *An MVNO should fulfill all the obligations of the Unified Licencee.*
- *An MVNO may be allowed to use the spectrum of an MNO and also to set up infrastructure including Radio Access Network(RAN)/Base Station Subsystem, if required.*
- *There should not be any limit to the number of MVNOs attached to an MNO. However, an MVNO cannot get attached to more than one MNO in the same service area. Additionally, the MNO should ensure that there is only one MVNO in one revenue district.*
- *MVNO should pay spectrum charges as per the slab applicable to the parent MNO.*
- *For counting the roll out obligations, the MNO can take into account the roll out done by the MVNOs attached to it.*

In this regard, we would like to submit that:

- The concept of MVNO has been successful in those markets where (i) the number of service providers are limited (ii) adequate spectrum is available with MNO to lease-out the spare spectrum to MVNO (iii) ARPU levels are on higher side, which enables MVNO and MNO to co-exist (iv) the market is mature and highly penetrated

- On the other hand, the Indian telecom market is extremely competitive with the presence of 11-12 telecom operators in each service area (ii) the existing operators are facing the huge scarcity of spectrum to provide QoS to its own subscribers and there is hardly any spectrum to be spared out (iii) the tariffs are amongst the lowest in the world and ARPU are consistently coming down (iv) the market penetration is around 60% and most of the service providers are aggressively rolling out their networks to enhance penetration even in rural

areas. Under these circumstances, the concept of MVNO seems to be irrelevant at this point of time.

In- Building Solutions

6.7 What methods would you propose for reduction of the number of towers?

- The Indian telecom industry continues to experience rapid growth, and has become the second largest market in the world in terms of mobile subscribers, with urban penetration above 130%. This growth would not have been possible without the growth of tower and associated infrastructure, which is an inherent and vital part of the telecom ecosystem. As a result, the country has witnessed proliferation of telecom towers, especially in urban areas. Currently, there are more than 400,000 telecom towers across the country. This proliferation is largely due to lack of spectrum, which is a scarce natural resource. The lack of spectrum has lead to the installation of more no. of Mobile towers, so as to maintain\provide better quality of service (QoS) to the consumer. The absence of Local Loop Unbundling (LLU) has also resulted in the large scale proliferation of telecom towers. However, the emergence of innovative technologies such as IBS and other upcoming technology such as Distributed Antennae Systems (DAS) etc may prove helpful in reducing the proliferation of telecom towers.

- In light of the same, we would like to propose the following ways to reduce the number of towers:

  - ✓ Adequate spectrum shall be allocated to the operators based on their subscribers.

  - ✓ Encourage and promote sharing of tower infrastructure by the operators.

  - ✓ Government should encourage the service providers to use IBS and other innovative technologies. This can be done in terms of providing support like nil RoW charges, tax incentives, reduction in license fee etc.

6.8 In what ways do you think that IBS can be encouraged for better in building coverage, better QoS and reduction in level of radiated power from Macro cell sites?

- We agree that the adaptation of innovative solutions such as IBS serves the purpose of reducing telecom towers. Going forward, such solutions could be made mandatory on the lines of current bye-laws for fire safety, rain harvesting, waste management. However, suitability of IBS is primarily in large buildings such as large commercial complexes, stadiums, airports, etc.

- IBS would help in reducing the number of towers and also, in reducing the visual impact of towers. The usage of IBS needs to the incentivized for encouraging its wider acceptance in existing buildings and new buildings.

Distributed Antennae Systems

6.10 Do you agree that innovative technologies such as 'Distributed Antenna System' (DAS) can be effectively utilised to reduce number of towers and migrate towards tower-less cities?

And

6.11 What are the impediments in adoption of new technologies such as DAS and how can these be removed?

The new technology such as 'Distributed Antenna system' is at the nascent stage and may be encouraged to reduce the number of towers. However, there are constraints/impediments in terms of dedicated power supply, slow RoW clearance and back haul connectivity to adopt these new technologies.

It is also submitted that license does not stipulate use of any specific network and is technology neutral. Hence, the operator should not be mandated to deploy these technologies and the same should be left to the operator choice.

Standardization of Tower Design

6.12 Would you agree that the design of towers can and should be standardised?

And

6.13 If yes, how many different types of towers need to be standardised?

And

6.14 What are the important specifications that need to be included in these standards?

And

6.15 Which is the best Agency to standardise the tower design?

- While designing the towers, the specifications taken into consideration are load bearing capacity, a common foundation design for appropriate scalability of towers' heights, to support a tenancy of 3-4 operators per tower; proper laying and shielding of cables, structural stability, ability to withstand high wind speeds especially in cyclone prone areas,

nature of soil, load bearing capacity of the building in case of a roof top tower, shear strength, pollution, fire, etc.

- At present the following agencies such as Indian Institute of Technologies (IIT), Structural Engineering Research Centre (SERC), Central Power Research Institute (CPRI) and State Electricity Regulatory Commissions (SERC), are involved in validating the design of the towers and buildings for structural safety. We would request the Authority to formulate a list of certifying agencies consisting of the above as well as other agencies that have proven track record in structural engineering.

- Since, operators are already using various standardized designs based on above conditions. Hence, there is no need to have mandatory standards as long as these are approved from the authorized agencies for its structural safety.

Reducing Visual Impact of Towers

6.16 What is the likely cost of camouflaging the towers?

It is difficult to assess the cost of camouflaging towers, as it would depend on the camouflaging needs and required designs to enable it. There could be a significant cost associated with camouflaging the towers.

6.17 Can camouflaging be made mandatory? If so, can this be made part of the design standards of the towers?

- Camouflaging of towers should not be made mandatory. In this regard, it may be noted that the operators are setting up the towers based on the network planning and by considering other aspects like coverage, capacity and QoS parameters. Moreover, types of the tower i.e GBT, RTT or RTP depend upon the various aspects. Thus, the design of the tower and related issues like camouflaging should be left to the operator.

- Notwithstanding the above, there could be special consideration made for camouflaging towers in and around certain specific urban areas having heritage or other architectural significance; and not for all generic urban areas. Government should support the operators in this transformation by the way of setting off cost against the RoW charges.

Clearances from Local Authorities

6.18 Do you consider that the existing framework of different civic authorities to grant permission for telecom towers is adequate and supportive for growth of telecom infrastructure?

We believe that the current framework of multiple civic authorities granting the permission for telecom towers installation is a big impediment in the growth of the telecom infrastructure in the Country.

Herein, we would like to highlight the position of the Central Government in regards to framing of policy for ROW and tower installation.

Legal position under Indian Telegraph Act:

Indian Telegraph Act, 1885, as mentioned above, is a statute of pre-independence era, enacted with the main objective to provide powers to the Government and to any person licenced thereunder to place telegraph lines under or over property belonging whether to the private persons of to public bodies.

The Act defines "telegraph line" and "post" as under:

> *"telegraph line" means a wire or wires used for the purpose of a telegraph, with any casing, coating, tube or pipe enclosing the same, and any appliances and apparatus connected therewith for the purpose of fixing or insulating the same;*
>
> *(5) "post" means a post, pole, standard, stay, strut or other above ground contrivance for carrying, suspending or supporting a telegraph line;*

Section 10 of the Act empowers the "Telegraph Authority" to place and maintain "*telegraph lines*" and "*posts*" in or upon any immovable property in the following terms:

> ***10. Power for telegraph authority to place and maintain telegraph lines and posts to place and maintain telegraph lines and posts*** *– 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:*
>
> *Provided that –*
>
> *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.

Section 11 of the Act empowers a Telegraph Authority to enter on property in order to repair or remove telegraph line/s or post/s whereupon it might have been placed, in the following terms:

> ***11. Power to enter on property in order to repair or remove telegraph lines or posts –*** *The telegraph authority may, at any time, for the purpose of examining, repairing, altering or removing any telegraph line or post, enter on the property under, over, along, across, in or upon which the line or post has been placed.*

It would thus be seen that a Telegraph Authority has been vested with very wide powers to enter upon any immovable property to place, maintain, repair, alter and/or remove any telegraph line or post in or upon any immovable property. The only restriction imposed is the requirement of obtaining permission of the local authority concerned, wherever the telegraph line or post is to be placed or maintained on a property which is vested in or is under the control or management of any local authority.

The legislature viewed that licencees should have these powers, because the licenses granted always strictly limit the area of operations of the licencees and it would be somewhat anomalous for local bodies and private persons to have the power to neutralize the licenses granted by the Governor-General in council by objecting to the licensees' operations, or by hampering them by the extraction of fees for permission to work under their licence.

The legislature was also conscious of the fact that when the property belongs to a municipal board or other local authority, the powers conferred by the Act cannot be exercised over it without the consent of that authority and that consent may be given subject to conditions; and that among other conditions which can be imposed is one requiring that any expense to which the local authority may be put by the exercise of the power shall be made good. However, in the Statement of Objects and Reasons, it was specifically clarified that "*no provision is made for the payment of compensation on any other account to a local authority whose property is made use of for this purpose, it being considered that, as the construction of telegraphs is a matter in which the public are interested, no charge should be made for accommodation of this sort when it can be granted without inconvenience to the public or expense to the local authority concerned*".

Section 19-B of the said Act lays down 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, all or any of the powers which the telegraph authority possesses with regard to a telegraph established or maintained by the government or to be so established or maintained.

In exercise of the powers under Section 19-B, the Central government has issued notifications dated 24.05.1999 and 04.02.2002, whereby the private basic and cellular telephone service operators have been conferred the powers to seek way – leave from any person including any public authority, public corporation, autonomous body, State Government or Central

Government in the respective licensed service area, inter-alia, to place and maintain telephone lines under, along or across and posts in or upon property vested in or under the control or management of concerned owner.

Thus, on a cumulative reading of the aforementioned provisions of the Act, as construed in the light of is objects and reasons, and the notifications issued thereunder, the local bodies and State Governments, legally speaking, have no right to frame a policy which causes hindrance or impediments in the functioning of the establishment of the network and placement of telegraph lines and posts etc. in any part of the service area.

Reference may also be made here to Entries 31 and 96 of List-I of schedule VII of the Constitution of India, whereunder "telecommunication" is a Central subject and Central Government alone is exclusively empowered to legislate thereon. In tune therewith, Section 7 of the Indian Telegraph Act confers exclusive authority in favour of the Central Government for making rules consistent with the said Act for the conduct of all or any telegraphs, established, maintained or worked by the government or by persons licensed under this Act. Relevant portion of Section 7 reads as under:

> **7. *Power to make rules for the conduct of telegraphs*** – *(1) The Central Government may, from time to time, by notification in the Official Gazette, make rules consistent with this Act for the conduct of all or any telegraphs established, maintained or worked by the Government or by persons licensed under this Act.*
>
> *(2) Rules under this section may provide for all or any of the following among other matters, that is to say:-*
>
> *e. the conditions and restrictions subject to which any telegraph line, appliance of apparatus for telegraphic communication shall be established, maintained, worked, repaired, transferred, shifted, withdrawn or disconnected;*
> *f. the charges in respect of –*
>
> *i) the establishment, maintenance, working, repair, transfer or shifting of any telegraph line, appliance or apparatus;*
>
> *ii) the services of operators operating such line, appliance or apparatus;*
>
> *h. the time at which, the manner in which, the conditions under which and the persons by whom the rates, charges and fees mentioned in this sub-section shall be paid and the furnishing of security for the payment of such rates, charges and fees;*
>
> *any other matter for which provision is necessary for the proper and efficient conduct of all or any telegraphs under this act.*

The Central Government, however, has not framed rules for the conduct of telegraph established, maintained or worked by the Government or licensees.

We suggest the Government to formulate a National Telecom Infrastructure Policy (NTIP), in exercise of powers under Section 7 of the Indian Telegraph Act, 1885 and mandate all state governments to follow the same.

Moreover, there is a need to declare telecom as infrastructure and essential services so that the telecom services providers gets due importance from local bodies.

6.19 Is there a need to set-up a single agency for approval and certification of towers? Is there an existing agency that can do this work? If a new agency is proposed, what should be its composition and framework?

- Operators are providing the Building safety/Stability certificate issued by IITs, SERC,CPRI etc, which certify that the building on which the tower installation is proposed, is structurally fit to take on the weight of the tower.

- Thus, it is suggested that all state Governments should acknowledge and accept the building safety certificate issued by the above said organizations/agencies. Since the network is been expanding very rapidly, more agencies should be allowed to provide the certificate for the structural strength, NOC etc. to reduce the delays.

6.20 Is it feasible to have a uniform framework of guidelines including registration charges, time frame, single window clearance etc for granting permission for installation of telecom towers and laying of optical fibre cables? If so, can it be prescribed by the Licensor or the Regulator?

- It is suggested that the Government should formulate a National Telecom Infrastructure Policy (NTIP), in exercise of powers under Section 7 of the Indian Telegraph Act, 1885,which lays down clear guidelines to be followed by various states and local authorities for grant of approvals and certification for telecom towers and laying of optical fiber cables.

6.21 What can be an appropriate time frame for grant of permission for erection of towers?

Local bodies should grant the permission for setting up of the towers within 30 days of the request. In the absence of any communications from local bodies, it would be considered to be deemed approved.

6.22 How can a level playing field be ensured for telecom service providers vis-à-vis other utility service providers especially in reference to tower erection?

Telecom Infrastructure industry must reflect its role as a key and critical utility given the heavy investments required, and also, the role this industry plays in the overall economic growth. As discussed earlier, adequate support is needed for the industry by recognizing the telecom services as a critical public utility. Also, the same level of priority must be accorded, as is

available for some other public utilities, by the local authorities especially in the context of granting Rights of Way (ROW).

6.23 Which agency is best suited to inspect the buildings and certify the structural strength of the buildings in case of roof based towers?

Pl refer to our response to Question No. 19.

Use of USO for rural areas

6.26 Please comment on the issues raised in paragraph 5.6 of Section A of Chapter 5.

- We recommend that an early announcement of a subsidy scheme for next phase of the telecom infrastructure for both wireline as well as wireless telephony and broadband be brought out.
- The scheme should be technology neutral and should include all technology platforms like GSM/ CDMA/ 3G/ BWA/ Wireline/ Satellite/ VSAT/ OFC etc.

IPV6

6.27 What measures are required to encourage the deployment and adoption of IPv6 in the country?

IPv6 adaption world wide and primarily in India is slow because the actual contents on IPv6 are less than 1%. Service providers are exploring alternate options like carrier grade NAT, Tunneling because of these limitations. OEMs so far have not taken aggressive approach for their hardware and software readiness to support dual stack because the same requires investment for development. We propose the following initiatives from regulator to expedite readiness of complete IP eco system.

i. Identify all content providers to make their applications and contents available on native IPv6 with time schedule. This shall substantially minimize impact on scalability challenges because of NAT.

ii. Identification and dual stack readiness of all OSS/BSS platforms used by service providers and enterprise customers. This shall help is monitoring & management of customer services without any impact.

iii. All OEMs are getting ready with dual stack in their products but not aggressively because they do not see potential in business from IPv6 transition. Licensor to make mandatory for all OEMs to support carrier grade dual stack in all existing products widely deployed by all internet service providers in India.

iv. End user devices (Mobile phones, Dongles, Desktop/laptop operating systems) are not ready with IPv6 support and there is no visibility on roadmap and commitment from vendors. Licensor may like to make it mandatory for support of IPv6 as well. This shall create demand for IPv6.

v. It is important for licensor to make it mandatory for all service providers to discourage trading of IPv4.

6.28 In your opinion, what should be the timeframe for migration to IPv6 in the country?

- Internet service providers are very keen to deploy IPv6 and we have already implemented 6PE to support IPv6 customers. Actual time depends on readiness of major contents, equipment providers, end user devices and OSS/BSS with IPv6 support. We propose one year for readiness of contents, vendors and applications providers and one more year for service provider to implement.

- In the interim period, government shall get additional blocks of IPv4s from APNIC to service providers in India and sustain growth and customer services.

IPTV

6.29 What measures do you suggest to enhance provision of IPTV services by various service providers?

6.30 Should there be any restriction on ISPs for providing IPTV services?

- We would like to suggest the following measures to enhance the provisions of IPTV services:

  a) Unbundling of the local loop
  b) License fee for the wireline services should be waived off
  c) The net worth of IPTV services provider should be reduced
  d) Issues between the broadcasters and the IPTV services providers should be resolved.
  e) Digitization with addressability would also promote IPTV.

- **There should not be any restriction on ISPs for providing IPTV services**

General

6.31 Please give your comments on any related matter not covered above.

The recommendation on other related matters are given below.

SACFA clearances:

- The site clearance basically requires examination from the point of safety for flight navigation and interference for existing wireless systems. Despite the above, we are required to coordinate with various government departments for site clearances which is a time consuming process. Thus, there is need to have a re-look composition of SACFA Committee for the purpose of faster and simpler site clearance process.

Misplaced apprehensions on health hazards of Electromagnetic radiation from Mobile Antennae-BTS:

- There is a need to increase awareness of local authorities and consumer groups. While, the operators are making their best efforts to educate the general public, however, the regulator's positive public position will be extremely helpful in this direction.