

Bharti Airtel Response to the Consultation Paper on “Review of Tariff for Domestic Leased Circuits”

Tariff Regulation for DLCs in India

Tariffs for DLC were first placed under price controls by TRAI in 1999, and subsequently revised in 2005. In its 2005 regulation, TRAI noted that tariff regulation for DLCs would continue until such time that competition reached adequate and effective levels. TRAI further noted that its long-term goals were to establish effective competition in the sector such that regulation of tariffs was no longer required.

The Indian DLC market is now much more competitive than it was in 2005. The number of NLDOs has increased from 4 to 34, and 7 to 10 access service providers currently operate in each service area. The consumer now has the option to choose from multiple service providers. Effective competition has consistently brought tariffs down, to levels well below the prescribed ceiling. For some locations and capacities, discounts of up to 80-90% of the TRAI ceiling rate are offered. The net effect of price ceilings in such competitive locations is zero at best, and all operators, in response to increased competition, have voluntarily facilitated reductions in tariffs.

The Indian DLC market no longer requires price control mechanisms, and the Industry is ripe for tariff forbearance. In the current consultation paper, TRAI too has recognized that competition within the leased line market has brought tariffs down to levels far below the price ceiling.

In the mobile segment, tariff forbearance has provided operators with flexibility to innovate on their offerings and has enabled the Industry to grow exponentially. A similar tariff forbearance policy is required for the DLC market.

Deregulation of the DLC market – International Precedents

Deregulation of tariffs in DLC segment has been endorsed by regulators the world over.

- Domestic leased lines were completely deregulated in South Korea in 1990¹, and further steps towards liberalization followed in 1991.
- In response to increased competition in the leased lines market, as well as a study commissioned to analyze the same, the Belgian Telecom Regulator, BIPT², while maintaining regulations in the wholesale market, completely deregulated the retail leased line market.
- In February 2013, OFCOM³, recognized the increased competition within and around the London area, and proposed the imposition of lighter price regulation in the case of products up to and including 1 Gbit/S, and no regulation on very high bandwidth products with effective competition. OFCOM also proposed to deregulate the market for long distance legacy leased lines.

¹ Conway, C., 1993. The Pacific Rim Privatization & Liberalization up to the 21st Century. page. 34

² <http://www.telecompaper.com/news/bipt-approves-new-leased-line-regulations-->

³ <http://media.ofcom.org.uk/2013/02/25/ofcom-proposes-to-reduce-prices-for-high-speed-data-links/>

- In Japan⁴, all regulations pertaining to Domestic Private Leased Circuits (DPLC) were abolished in April 2004 as the regulator determined that the market for DPLCs was adequately competitive.

A tariff forbearance regime can be implemented either in whole or in part. For instance, while tariffs for urban basic services have been left under forbearance; tariffs for rural basic services are still prescribed using standard tariff packages. If TRAI believes that in some service areas such as Jammu & Kashmir, Assam and the North-East, competition is inadequate and requires price controls, then it may choose to continue with the existing regime in such service areas and may also recommend fiscal/regulatory incentives to promote competition and generate higher demand. Competitive service areas in India however, should be placed under tariff forbearance.

Price regulation as an economic control mechanism has been studied in great detail, and the long term effects of such regulation are well established. Roques and Savva, in a paper on “Price cap regulation and investment incentives under demand uncertainty”, show through Sensitivity analyses and Monte Carlo simulations⁵, that the efficiency of price cap regulation depends critically on demand volatility, and that errors in the choice of the price cap can, over the long-term, deter investment and even raise average prices.

Notwithstanding our views above and the position that DLC tariffs should now be left under forbearance, we submit our responses to the specific questions raised in this consultation paper in the next section.

Q1: Should TRAI continue to use the bottom-up fully allocated cost method for computation of cost-based ceiling tariffs for point-to-point DLCs (P2P-DLCs)?

Q3: In case your response to the Q1 is in the negative, what should be the alternative approach for determining tariffs for P2P-DLCs of various bandwidth capacities? Please support your view with a detailed methodology along with supporting data and assumptions, if any.

Bharti Airtel’s Response:

- a. We support the bottom-up fully allocated cost method for calculating cost-based ceiling tariffs.
- b. While determining the return on any investment, deductions for all types of charges are allowed. The mechanism for allowing deductions may be different (depending on the nature of expense i.e. capital or revenue) but charges are permitted. E.g. depreciation, amortization, impairment of asset, diminution in the value of investment, opex and capex which should all be included.

⁴ <http://www.trai.gov.in/trai/upload/ConsultationPapers/94/consultationpaper17nov06.pdf>

⁵ Roques, F. A. & Savva, N. S., 2006. *Price Cap Regulation and Investment Incentives under Demand Uncertainty*, : Judge Business School, University of Cambridge.

- c. The quality and volume of traffic (which can flow on a network at any point of time) is essentially dependent on its capacity, which in turn is directly proportional to the amount of capex on network assets. Network is Capex sensitive and has a limited life.
- d. The total cost i.e. (all capex + all opex) should be considered as no other method can be used to recover the cost associated with DLCs. There is no reason/justification for considering certain capex and opex items while ignoring others. The following costs need to be considered:
 - i. Network Running Cost: All costs incurred to keep network up and running (e.g. Rent, Energy, Security, Right of Way, Rates and Taxes, Repairs & Maintenance, AMC charges, Managed Service charges, Stores and spares consumption, Site relocation and handling charges, Warehouse rent, Insurance charges etc.) should be incorporated.
 - ii. IT Cost: Costs of IT based activities that are directly attributable to running a network and provision of services such as billing, cost of customer service, etc. should be incorporated.
 - iii. Personnel & Administrative Cost: Personnel and Administration costs (including amount incurred for facilities etc), which are directly attributable to the administration of a network, and allied services (including collection costs) should be factored in while conducting a product costing exercise using a bottom up approach.
 - iv. Depreciation & Amortisation: Annual depreciation charges are directly attributable and allocable to fixed assets and the annual amortization of License Fees (as part of one time Entry Charges) for setting up and operating the network should be captured.
 - v. Cost of License and Related Compliance cost (including License Fees on revenue share): The annual charges payable by the operator with respect to License Fees as part of the Revenue share should also be included. Further there should also be inclusion for one time entry fees and other charges related to cost of compliance (e.g. legal & professional fees etc.).
 - vi. Sales & Marketing Cost Sales and marketing cost are directly responsible for the acquisition of DLC subscribers and therefore, have to be part of the cost.
 - vii. Cost of Capital: The amount invested in a business has a cost. A fair return on the capital invested by the business should also be considered when calculating the cost of a product. The return should be based on Weighted Average Cost of Capital (WACC) on the capital employed by the operator.
 - viii. Bank Charges: Bank charges must also be considered as it is a normal cost associated with the operations of a business.
 - ix. Bad Debts: Bad Debts are a normal risk associated with any business and as such should also be factored in while arriving at the normal cost of a product.
- e. TRAI would also appreciate that the cost of some elements like Right of Way (RoW) has increased significantly. Local authorities have started demanding exorbitant RoW charges for laying OFC infrastructure. In cities like Bangalore, Chennai, Cochin, Hyderabad, Delhi, Pune, Mumbai, Kolkata, etc. RoW charges have increased exponentially in the last 2-3 years. In some

cities/service areas like Andhra Pradesh, Chennai, Kerala, Gujarat, etc., operators are being asked to pay annual recurring charges as well. Similarly, the inflation rate has risen significantly in the last few years.

Therefore, we request TRAI to consider all and full capex and opex, as stated above, while arriving at a cost-based ceiling tariff for DLC.

Q2: In case your response to the Q1 is in the affirmative, what values of the following items should be used for estimation of ceiling tariffs for P2P-DLCs:

(i) Return on Capital Employed (ROCE)

(ii) Useful lives of transmission equipment and Optical Fiber Cable (OFC) separately

(iii) Average no. of fiber pairs lit in OFC in trunk segment and local lead segment separately

(iv) Utilization factor of OFC system in trunk segment and local lead segment separately?

Bharti Airtel's Response:

- a. Return on Capital Employed (ROCE): At least **20%** due to increased cost of capital and debts, which is putting pressure on the rate of return.
- b. Useful lives of transmission equipment and Optical Fiber Cable (OFC) separately:
 - i. Transmission equipment: **7 - 10 years**
 - ii. Optical Fiber Cable: **15 -18 years**

It is to be noted that in India, fiber cuts are frequent due to repeated road repairs and as a result, the useful life of OFC varies from one place to another, and depends on a number of factors. Such exigencies also increase operational costs, causing further strain on operators.

- c. The utilization factor of network backbone bandwidth in trunk and local lead segments depends on the timing of the network upgrade. Network upgrades are carried out in various stages, and while at the time of upgrade utilization may be low; it may over time reach higher rates. Therefore, the following ranges may be considered:
 - i. Utilization factor of OFC system in trunk segment – **30 - 45%**
 - ii. Utilization factor of OFC system in local lead segment **40 – 75%**

Q4: In your opinion, what are the bandwidth capacities of P2P-DLCs for which ceiling tariffs need to be prescribed?

Bharti Airtel's Response:

- a. Currently, ceiling tariffs for DLCs of 64 kbps, 128 kbps, 256 kbps, 2 Mbps (E1), DS3 (45 Mbps) and STM-1 (155 Mbps) capacities have been prescribed.
- b. Demand for bandwidth has increased significantly over a period of time. Due to this increased demand, most consumers opt for a minimum of E1 bandwidth. The customer base of DLC for lower than E1 capacity is less than 3% as customers of lower bandwidth requirements are moving to MPLS, which offers operational efficiency, enhanced value additions and competitive rates. Low demand has effectively dis-incentivized investment required to support lower bandwidth circuits.

- c. Further, the costs to serve less than E1 are higher as can be seen from the existing TRAI ceiling tariff, which was built on a bottom-up cost model, for 256Kbps verses E1 for lower distance segments. For customers, the commercial viability and returns are higher for higher bandwidth capacity.
- d. Moreover, various viable substitute technologies such as ISDN, DSL, IP VPN, WLL, GPRS, Cable Modem, UMTS, etc. are available for bandwidth less than E1 capacity.

Therefore, tariff ceilings for DLC less than E1 capacity should be out of the purview of price ceiling.

Q5: In your opinion, is there a need for prescribing separate ceiling tariffs for local lead and trunk segment?

Bharti Airtel's Response:

- a. Presently, ceiling tariffs prescribed for trunk segments are applicable to local leads as well. We are of the view that the current regime should continue and no distinctions should be made between tariffs for local lead and trunk segments.
- b. Currently, local lead is provided by NLDO as part of an overall end to end circuit. Therefore, local lead is an integral part of the overall consolidated offering by NLDO for a particular DLC link, which might include trunk route as well as local lead on the each side of the trunk capacity.
- c. Separating the local lead ceiling tariff from trunk route will complicate the administration of these networks.
- d. Local lead may be for short distances (upto 50km) and this varies from city to city. For example, for a metropolitan city, local lead may be upto 50km, but for smaller teir2/tier3 cities, local lead may be generally set at much lower distances and 50km may classify as a typical NLD circuit (trunk capacity). Therefore, it would be difficult to determine the minimum qualifying distance for a leased line as a local lead since the same may vary from one city/town to another.

Therefore, existing regime may be continued.

Q6: In your opinion, is there a need for prescribing separate ceiling tariffs for remote and hilly areas?

Bharti Airtel's Response:

- a. In the current consultation paper, TRAI has recognized that there is less competition in remote and hilly areas and market rates are closer to the ceiling rate. Therefore, TRAI has suggested that separate ceiling tariffs may be prescribed for remote and hilly areas.
- b. If competition in such areas is inadequate then there exists a very real possibility that such places are unviable and unattractive for investors, and current tariff ceilings are not adequate enough to ensure a reasonable rate of return. A forbearance regime may attract more operators to invest in these areas, direct results of which would include enhanced infrastructure and better

economies of scale. This would bring down the unit cost of DLC, which will ultimately reflect in lower tariffs. Further, TRAI may also recommend some fiscal/regulatory incentives to encourage more investments and easy entry in these areas.

- c. The installation of telecom infrastructure in such areas poses many financial and operational challenges, some of which are listed below:
 - i. The cost of laying OFC in such remote and hilly areas is generally high due to hard soil/ higher labour and logistical costs. The variable cost (maintenance cost etc.) is also very high. For example, fiber cuts due to landslides and road widening work are very frequent.
 - ii. Telecom operators often deploy alternate local lead means like RF wireless, VSAT etc. in difficult terrains such as these. Additionally, successfully connecting customer locations with service provider PoPs, more often than not results in an increase in the overall cost of the offering.
 - iii. Consumption and capacity utilization are on the lower side in these areas, resulting in a higher unit cost.
- d. Considering these special challenges, TRAI recently released recommendations on 'improving telecom services in the north-eastern states: an investment plan'. This recommendation addresses OFC related issues including speeding up USO funded projects (laying intra-District SDHQ-DHQ OFC network in Assam by BSNL; in Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura by Railtel) and (from BHQs to the Gram Panchayats(GPs) through OFC by BSNL and Railtel in North-Eastern states). Since these projects are being funded through USO subsidies, TRAI may recommend these PSUs to offer subsidized rates to other operators and to end customers.
- e. If TRAI decides to continue with the existing regime for these areas, then care should be taken to ensure that the prescribed ceiling tariffs are optimum.

Q7: In your opinion, what are the distances of

- **trunk segment and**
 - **local lead segment (separately)**
- of P2P-DLCs for which ceiling tariffs need to be prescribed?**

Q8: In your opinion, is the distance interval of 5 km still relevant for prescribing distance-based ceiling tariffs for P2P-DLCs?

Q9: In case your response to the Q8 is in the negative, what distance interval should be used for prescribing distance-based ceiling tariffs for P2P-DLCs?

Bharti Airtel's Response:

- a. We believe that there is no need to prescribe separate ceiling tariffs for local lead and trunk segment. *Please see our detailed response to Q. No. 5*
- b. We believe that distance interval of 5km needs to be reviewed for prescribing distance-based ceiling tariffs. We suggest the following:
 - i. **Upto 50KM**

- A distance interval of 10km can be considered for prescribing distance-based ceiling tariffs upto 50km
- ii. **From 50km to 500km:**
 - A distance interval of 50km can be considered for distance-based ceiling beyond 50km and upto 500km.
- iii. **Beyond 500km:**
 - A ceiling rate can be prescribed for ‘equal to or beyond 500km’, as being practiced today.

We believe that the above will simplify the pricing structure, both from the perspective of consumers and operators. Such restructuring will have no adverse impact on the consumer. The difference between the prices of consecutive 5 km slabs, for distances greater than 50 km, is negligible but complicates the provision of service. A larger distance interval, such as 50km, will simplify calculations.

Q10: What equipped capacities of trunk segment and local lead of P2P-DLC should be used for computation of ceiling tariffs of various bandwidth capacities?

Bharti Airtel’s Response:

- a. Ceiling tariffs should not be prescribed for capacities less than E1. *Please see our response to Q. No. 4*
- b. The following capacities may be considered for ceiling tariffs:

S. NO.	Bandwidth Capacity of P2P-DLC	Suggested Benchmark of Equipped Capacity
1	STM-1	STM-4
2	DS3	STM-4
3	E1	STM-1

Q11: Should VPNs such as MPLS-VPNs also be brought under tariff regulations for DLC?

Q12: In case your response to Q11 is in the affirmative, what method should be used for computation of cost based ceiling tariffs for VPNs?

Bharti Airtel’s Response:

- a. We recommend that tariffs for VPNs such as MPLS-VPN should not be regulated. These services are extremely competitive and present no signs of market failure or anti-competitive behavior.
- b. MPLS VPN is quite different from DLC. In the case of DLC, the customer takes bandwidth from one point to another; MPLS VPN however, is a managed and customized service in which operators take on the responsibility of providing and managing the total solution, including the

access network, the core network and the customer premises equipment (CPE) to the choice of the customer. This service is designed to deliver efficiency, scalability and a reliable way of connecting different sites across countries to provide a single fully managed wide area network (WAN) capability. The service is backed by competitive and flexible SLAs. A leased line therefore, is an end user solution while MPLS is a complex framework of functions.

- c. Since it is a managed and customized service; the whole framework of MPLS varies from one customer to another. Such variation can be over:
 - i. Remote access, differentiated classes of service, IP multicast, integrated Internet access, and site backup
 - ii. Value-added services such as IP communications, videoconferencing, e-commerce, and content hosting
 - iii. End-to-end QoS monitoring to support mission-critical applications across the network
 - iv. Inherent MPLS traffic engineering to increase network bandwidth and quickly reroute traffic in failure conditions
- d. Therefore, determining optimum cost based price controls for MPLS VPN is a complex exercise, attributable in no small measure to technical and commercial reasons that vary from one operator to another. MPLS-VPN needs to be evaluated from both a technical as well as a commercial perspective:
 - i. MPLS-VPN is a Layer 2/Layer-3 IP service based on packet switching. The resources deployed on the backbone MPLS network differ from one telecom operator to another telecom operator and depend on MPLS electronics, number of backup paths/capacities created between various MPLS PoPs, and network SLAs achieved/ targeted.
 - ii. As a Packet network, network utilization may depend on capacity utilization & underselling/overselling due to the concurrency factor on the network basis customer usage patterns. Customer behavior or usage varies amongst customer segments and from service provider to service provider.
 - iii. There are also various flavors of MPLS-VPN such as:
 - Layer2 MPLS
 - Point to point VPLS
 - Point to Multi-point VPLS
 - Layer-3 MPLSRegulatory price constraints may be hard to calculate given the varying customer traffic topology flavors
 - Hub & Spoke
 - Point to Point or
 - completely mesh etc.
 - iv. Last mile also differs in the actual feasibility at locations depending on what transmission medium is used, such as
 - Copper
 - Fiber

- P2MP Radio
 - P2P Radio
 - newer technologies like LTE etc.
- v. Customers may choose a single last mile or multiple last miles between one location to telecom operator' PoP(s) to have additional redundancy at the last mile end.
- vi. The above difference are also compounded by commercial considerations such as pricing based on
- the number of customer ports
 - redundancy required on last mile
 - backbone network
 - overall volume of the customer
 - distribution of customer in central hub port vs remote bandwidth ports
 - expected bandwidth usage basis customer profile
 - customer traffic topology etc.
- vii. Telecom operators are currently offering managed MPLS VPNs with packaged terminating end CPE device like routers/switch etc. and also offer proactive network monitoring/reporting /configuration services. There are once again multiple configurations that vary depending on the type of (CPE) router/switches used, as well as the extent of managed services offered etc.
- e. Currently, the MPLS market is highly competitive, and low prices are an indication of that fact. In a competitive environment such as this, telecom operators pass on all the benefit of utilization of IP network to customers so as to acquire and retain them.

Keeping in mind the above variables, we believe that it is extremely difficult, and to an extent impossible to contain MPLS-VPN within the boundaries of price controls. The MPLS VPN market is subject to aggressive competition, does not present any signs of market failure, and is characterized by low prices. In light of this, we request TRAI to not bring MPLS-VPN under tariff regulation.

Q13: In your opinion, is there still a need for prescribing separate ceiling tariffs for DLCs which are provided on Managed Leased Line Network (MLLN) Technology?

Bharti Airtel's Response:

While our company does not offer MLLN, we feel it prudent to mention that MLLN is a form of DLC with an added management component. We recommended that MLLN, along with DLC should be free of tariff regulation, and left to free markets, so customers may decide the value of these services.

Q14: Is there any other relevant issue related to tariff for DLCs which the Authority should keep in mind while carrying out the present review exercise?

Bharti Airtel's Response:

Tariff controls on DLC need to be re-evaluated in light of the prevailing levels of competition and extremely competitive tariffs. This market has been deregulated in many nations, and competition has been successful in keeping anti-competitive practices away. India is at a similar stage, where competition in the DLC market trumps tariff regulation, and its benefits are continually transferred to consumers. Deregulation of this space will bring with it greater competition, lower prices, increased innovation and greater consumer benefits.