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Letter Ref No: RP/ FY 14-15/087/54
Date: 11th December 2014

To,
Advisor (NSL – I),
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
Jawahar Lal Nehru Marg (Old Minto Road), New Delhi – 110002

Subject: Consultation Paper on "Interconnection Usage Charges".

Kind Attention: Sh. Arvind Kumar

Reference: TRAI Consultation paper no. 13/2014 dated 19th November 2014

Dear Sir

This is with reference to the above cited consultation paper on the subject of determination of Interconnection Usage Charges. In this regard, kindly find enclosed our response for your kind consideration.

Yours sincerely
For Bharti Airtel Limited

Ravi P. Gandhi
Chief Regulatory Officer (Policy)

Enclosed: As mentioned above.

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Airtel's Response to TRAI's Consultation Paper on Interconnection Usage Charges

It may be noted that India has adopted the CPP (Calling Party Pays) regime, wherein the calling party customer pays for the call. Even though this allows a single point of billing to the customer, the CPP regime necessarily requires an **Interconnecting usage charge (IUC) model.** Such a model defines the sharing of revenue between the originating and terminating carriage service provider in a manner ensuring fair compensation to both and therefore has to be **'cost-based'**.

We believe that the present 'Termination Charge' of 20 paisa is below cost and there is an urgent need for the same to be revised upward. The present consultation paper is therefore timely and called for, considering the costs have increased significantly from the last review of IUC carried out in 2009. It is submitted that in addition to the CAPEX cost, which was excluded while determining the termination charge, other costs like spectrum, power and energy costs, etc., have significantly increased and the same also need to be included for determining the termination charge going forward.

The Authority has itself determined the half leg cost of the call, with the inclusion of CAPEX cost and other relevant costs, at 35 paisa/ min (Pg. 25 of TRAI's Regulation dated 19th August, 2014 on Access origination charges for International Long Distance calling cards). It is also worth mentioning that the industry ASRs of 2012-13, on the basis of which the cost of 35 paisa was calculated, did not include the upcoming Spectrum renewal costs of the licenses due for extension from 2014-16. The Spectrum Cost paid is significant and has an impact of more than 6.22 paisa per MOU.

The Authority, while deciding on the IUC, should take cognizance of the various anomalies associated with the 'below cost' termination charge including the ones enumerated below;

- Best Networks will become only incoming call networks;
- No incentive to deploy networks in rural and remote areas;
- No incentive to enhance capacity (for the terminating calls);
- Increase in SPAM Calls/SMS;
- Collapse of Tariff tables leading to overall loss to the Industry.

It may be noted that the 'below cost' termination charge has an adverse impact on the Indian market since this market is dominated by prepaid (95% of the subscribers), wherein there is very little/ no scope of charging rentals from customers.

Further, a 'Bill & Keep' arrangement which is a special case of 'below cost' termination charge (where termination charge becomes zero), has all of the above mentioned drawbacks at a magnified scale with a larger impact.

To reiterate, **termination charges should be fixed at full cost** for ensuring adequate compensation to the terminating operators, incentivising them to maintain consistent and acceptable quality of services and encouraging expansion into new geographical areas, especially rural and remote areas.

Determination of Termination Charge:

Given the above context, it is relevant to mention that the fully allocated cost (FAC) model assures recovery of the full cost including historical costs, as this methodology relies on actual data furnished by the operators. The inherent advantages associated with the said model are:

- FAC allows full cost recovery for the calls terminated in the network and hence incentivizes the operator to maintain good QoS by continuously investing in network deployment.
- FAC allows for cost recovery thereby ensuring adequate return on investments and encouraging operators to invest more in network enhancement.

The costs taken from the ASR for the FAC model are duly audited and are available for all operators, thereby leaving no scope for dispute by any stakeholder. It is, therefore, recommended to use the FAC Model for determination of the termination charge.

What should be the Termination Charge?

In our view, the following costs should be considered and included for ensuring adequate compensation to the terminating operators:

- CAPEX Cost in the form of annual depreciation charges on deployed fixed assets;
- Amortization of Spectrum cost for setting up and operating the mobile telecom network;
- A fair return on the capital invested by the operator, where such return is based on Weighted Average Cost of Capital (WACC) on the capital employed by the operator. This is to ensure that adequate protection is given to the operator on its investments;
- All OPEX costs including but not limited to network running costs, employee and administration costs, IT costs, License fees, Spectrum usage charges etc.

Airtel, one of the largest and most efficient operator, has an average termination cost of approx. 33 paisa per minute after including the above mentioned costs. A detailed calculation is being submitted to the Authority separately.

We therefore request that the above submissions should be considered and given due weightage while determining the termination charges.

Our detailed responses to the questions raised in the consultation paper are as below:

Q1. Which of the following approaches would be the most appropriate for Mobile Termination Charge and Fixed Termination Charge?

(i) Cost oriented or cost based;

(ii) Bill and Keep

Please provide justification in support of your response.

Bharti Airtel's Response:

Globally, countries have adopted two models of retail charging: the RPP (Receiving Party Pays) or the CPP (Calling Party Pays) regime.

Few countries have adopted the RPP regime wherein both the calling and called customers pay their respective service providers for the call. In the RPP regime, the Bill & Keep (B&K) model can be adopted, wherein there is no sharing of revenue between the originating and terminating operators as both are free to charge their respective customers for the call.

Most countries including India have adopted the CPP regime. In the CPP regime, the calling customer pays for the call. While this allows for a single point of billing to the customer, the CPP regime necessarily requires an Interconnecting usage charge (IUC) model. The IUC model defines the sharing of revenue between the originating and terminating/carriage service provider in a manner that ensures fair compensation to both. Based on prevalent practices internationally, where countries have adopted the CPP regime, there is enough evidence that the regulators have selected cost based termination charges as the most appropriate methodology.

There is no geography with a CPP regime where Bill & Keep has been mandated by the regulator. In India, some smaller operators may demand this regime largely due to the reason that a majority of the incoming calls are carried by those operators with larger and better networks and incur the bulk of the terminating cost. In such a scenario, the B&K or 'below cost' regime would be used by smaller operators to further lower their call tariffs. In a hyper competitive market with a large number of operators, such as in India, this would only lead to a price war, erosion of industry margins and severely impact much needed investments in the sector including roll-out of broadband across the country.

Therefore, with the adoption of the CPP regime in India, any suggestion towards keeping termination charge on Bill and Keep model would be highly unjust and unfitting. Hence, the termination charge should therefore strictly be 'cost based' and should recognize the true cost incurred by the operators.

The traffic imbalance between interconnecting operators is inherent and the same has also been acknowledged by the Authority while rejecting 'Bill and Keep' during the last Interconnect Usage Charges Review in 2009. Some of the reasons for imbalance of traffic between operators are explained as below:

a) **Customer Profile:** Due to different marketing and positioning strategies, various operators cater to different market segments. For example, if one operator targets the high income segment with differentiated services and the other targets the lower income customers, the calling pattern of the two operators is likely to be different leading to an imbalance of traffic between the two operators.

b) **Radio Coverage**: The operator with better and wider coverage/footprint would have a higher probability of successfully terminating the calls and thus, will become a net receiver. For example, if operator 'A' has better coverage/footprint than operator 'B', the probability of successful termination in operator A's network is higher than operator B's network. This would lead to an imbalance of traffic between operator 'A' & 'B', where

traffic from operator 'B' to 'A' would be higher as compared to traffic from operator 'A' to 'B'.

c) **Tariff plan:** If one operator 'A' has a strategy to provide aggressive tariff plans such as free/bundle/low cost minutes than the other operator, it would lead to more minutes terminating in the other operator's network. Also, there is a large probability that smaller operators would offer lower tariffs to offset the acquisition cost and increase their market share. Such tariff plans which are bundled with free minutes result in higher incoming traffic to the network of bigger operators.

If the termination charges are 'below cost' or 'Bill and Keep', the traffic imbalance between the interconnecting operators will lead to under-recovery of costs for an operator with a greater share of termination.

In the Indian scenario with 7-12 TSPs operating with wide variance in their network coverage and capacities coupled with a market dominated by prepaid (95% prepaid subscribers) customers, providing Bill and Keep will essentially mean taxing one operator for the benefit of another operator. This will in effect not incentivise network expansion and quality improvement and servicing customers with no prejudice.

The Authority in the consultation paper has also posed that 'Bill & Keep' will encourage deployment of IP-based networks. In this regard, it is submitted that:

- There is a need to clearly differentiate between Internet and PSTN/PLMN. The wholesale interconnect usage charges (IUC) for voice are for PSTN/PLMN connectivity and not for internet connectivity;
- The interconnect costs and Interconnection Usage charges include cost of an entire range of elements including CAPEX cost for fixed assets such as BTS, BSC, MSC, IN, optical fibre, transmission links etc. deployed in the network, Spectrum cost, OPEX Cost etc. and are not based upon just the cost of the interconnecting links, which is only a miniscule element.

It is therefore imperative that the IUC regime, which is primarily a revenue sharing regime for voice calls/SMS, should be cost based and not Bill and Keep just because there are changes in technology at the interconnecting points.

We also believe that even the present Termination Charge of 20 paisa is below cost and there is an urgent need for upward revision of the same. The Authority, while deciding on the IUC, should take full cognizance of the various anomalies associated with 'below cost termination charge' or 'Bill & Keep' which is a special case of below cost termination charge, including the ones enumerated below;

a) **Best Networks will become incoming call networks:** India already witnesses a phenomenon of multi-SIM. Lower termination charges/B&K will promote peculiarities in the customer behavior, i.e., networks with better coverage would be preferred for receiving incoming calls while networks with inferior coverage and cheaper tariffs would

be used for outgoing calls. This behavior is presently evident from the traffic pattern of some leading operators, having better network coverage, who receive approximately 55-57% of the total inter network calls compared to only 43-45% of outgoing calls to other networks. In a B&K or below cost regime, this ratio will get worse and result in constraining operators further from recovering their cost deficit due to higher incoming calls. Thus, operators with a higher proportion of incoming calls will be at a competitively disadvantageous position while fixing tariffs.

b) **No incentive to deploy networks in rural and remote areas:** The population residing in rural and remote areas are the ones with lower paying capacities and therefore, utilize mobile connectivity mostly for incoming calls. In case the termination charge for calls is further made below cost, the network/ sites deployed in rural/ remote areas will essentially become financially unviable and serving rural/low usage customers will become less attractive. This loss making proposition will dis-incentivize investments in rural/remote/non- remunerative areas.

c) **No incentive to enhance capacity (for the terminating calls):** Since the terminating operator is not compensated for the terminating MoUs, they will not have any incentive to augment their network to support the requirement from the other operators, resulting in poor quality of services & disputes on augmentation of PoI capacity.

d) **Increase in SPAM Calls/SMS:** B&K will incentivize originating operators to divert inordinate amounts of traffic towards the terminating operators' network. This will ultimately increase the number of unsolicited calls and SMS to the terminating operator's network, given especially the reduced cost of making promotional calls to subscribers. Similar scenario has been witnessed in India in the case of SMSs, wherein the regulation of termination charge has acted as an effective deterrence in reducing the menace of promotional SMSs to a considerable extent.

e) **Will result in collapse of Tariff tables leading to overall loss to the Industry:** Termination charge is a revenue shared between originating and terminating operator, therefore, any reduction in the termination charge does not result in reduction of the overall cost for the Industry. With B&K or below cost termination charge, the originating operator will not be required to factor the full cost of Termination while fixing its tariffs i.e. tariffs will be fixed basis the cost of one leg of the call, i.e., the o/g leg (instead of both the legs, termination being available without any charge). Consequently, every operator will be required to recover the cost of termination from the outgoing calls. The operator with a smaller network, having more originating calls than terminating calls, will reduce tariffs to fill out its networks and recover only its own cost of origination and margins. As a result of this the operator will use a disproportionate share of network/ resources of the Terminating Operator, which would be available free of cost or below the actual cost of the terminating operator. Such an arbitrage in a hypercompetitive market will result in the tariff table coming down without any real reduction of the cost and consequently bring down the profitability of the industry that is already under severe financial stress. Therefore, we believe that any such move would seriously hamper the growth of Industry

and will lead to a complete market failure with an adverse impact on the viability and sustainability of the telecom business in the country. This will also inhibit investments in the telecom sector even to the extent that it may bring the broadband roll out under jeopardy.

In a predominantly prepaid market such as India where there is no scope of charging rentals, a 'below cost' termination charge has a significantly adverse impact.

It is therefore, critical to ensure that the termination charge is neither set below cost nor specified as 'Bill & Keep'. To reiterate, **termination charges should be fixed at full cost** for:

- ✓ Ensuring fair compensation to all operators on the principle of "work done";
- ✓ Enabling and motivating the operators to make right investments in the network for ensuring good quality of services to consumers;
- ✓ Increasing incentives for operators to acquire customers;
- ✓ Encouraging expansion into new geographical areas especially the rural and remote areas.

Q2. In case cost-oriented or cost-based approach is used for determining Mobile Termination Charge and Fixed Termination Charge, is there a need to give a glide path towards Bill and Keep and what will be the appropriate time frame to migrate to Bill and Keep regime?

Bharti Airtel's Response:

As detailed in the response to Q1, with the adoption of the CPP regime in India, any suggestion towards keeping Termination charge on a Bill and Keep model or to give a glide path towards 'Bill and Keep' would be highly unjust and unfitting. It is only proper that the termination charge be strictly **'cost based'** and recognizes the actual costs incurred.

Q3. Which method of depreciation for the network elements should be used and what should be the average life of various network elements?

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Q9. Would it be appropriate to take an average life of 10 years for all network elements without any salvage value for the purpose of depreciation in the FAC method? If not, please suggest an alternative method keeping in view the categorization of network elements prescribed in Accounting Separation Regulations, 2012, along with justification.

Bharti Airtel's Response:

It should be noted that the average life of equipment deployed in a telecom network varies from 3-15 years, as enumerated below:

- Average life of telecom equipment varies from 7-10 years;
- Average life of IT equipment is approx. 3 years;
- Life of passive infrastructure such as towers is 15 years.

Due to the varying life of different equipment, it may not be appropriate to adopt 10 years as an average life for all network elements. It is therefore imperative to take depreciation as it appears in the books of the Company (viz. Straight Line Method).

It should be noted that the depreciation for any financial year is already part of the ASR, which is audited and matched with the published accounts of the operators. Therefore, we do not find any merit in changing the methodology and computing the depreciation afresh.

Q4. Should TRAI continue with a pre-tax WACC of 15% as used in framing other regulations, tariff orders, and regulatory exercises? If not, please state what pre-tax WACC would be appropriate for the present exercise, along with justification and computations.

Bharti Airtel's Response:

We believe that the pre-tax WACC of the telecom operators is in the range of 19-20% considering the industry's financial, risk and debt profile. However, for an efficient operator the Authority may consider a pre-tax WACC of 15% as used in framing other regulations, tariff orders and regulatory exercise.

Q5. In case a cost-oriented or cost-based approach is used for prescribing Mobile Termination Charge and Fixed Termination Charge, which method would be the most appropriate for estimating these costs?

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Q6. In case your response to the Q5 is fully allocated cost (FAC) method, would it be appropriate to calculate IUC using historical cost data submitted by the service providers in Accounting Separation Reports (ASRs), Annual Reports/published documents or other reports submitted to TRAI?

Bharti Airtel's Response:

We recommend the Fully Allocated Cost (FAC) model for estimating the termination cost of Mobile and Fixed line network.

The fully allocated cost model assures the recovery of the entire cost including the historical costs. The FAC methodology relies on the actual data furnished by the operators. The inherent advantages associated with the model are:

- FAC allows full cost recovery for the calls terminated in the network and hence incentivizes the operator to maintain good QoS and invest in network deployment.

- FAC allows for cost recovery thereby ensuring adequate return on investments and encouraging the operators to invest more in network enhancement.

Further, the costs taken from the ASR for the FAC model are duly audited and are available for all operators, thereby leaving no scope for any dispute by any stakeholder.

The Termination Charge for each operator should be calculated on the basis of their audited ASR data. To take care of inefficiencies, the calculated termination charge of the "**actual efficient operators"** should be selected for fixing the Termination Charge. Further, while selecting an actual efficient operator, it is recommended that the Authority consider the cost models for operators meeting certain minimum criteria of coverage in terms of both rural population and geographic coverage, i.e., DHQs/ BHQs.

Q7. In the FAC method, what items/nature of OPEX should be considered as relevant for the termination cost? Please provide justification in support of your opinion.

Bharti Airtel's Response:

We humbly submit that all cost items, including but not limited to the following, should be captured as OPEX items in the FAC methodology for calculation of termination charges:

- **Network Running Costs** : Site running costs like Rent , Energy , Security , Rates and Taxes, Repairs & Maintenance, AMC charges , MSC running expenses , Managed Service charges, PCM charges, Signaling charges, Stores and spares consumption, Site relocation and handling charges, Warehouse rent, Insurance charges , etc.

- **Employees and Administration costs**: Personnel and Administration costs directly attributable to administering a network including allied services.

- **Customer Service:** The call center for complaint resolution caters to all the issues in the network and service delivery. It is incorrect to assume that a network complaint for an incoming call will not be entertained by an operator in the call center.

- **IT costs**: Costs on IT based activities, such as billing, etc. are directly attributable to running a mobile network therefore should be incorporated.

- **License Fees and Spectrum Charges:** The annual charges payable by the operator with respect to License Fees and Spectrum/Microwave charges as part of the Revenue share should also be included as costs attributable to operating a mobile telecom network.

Q8. Should CAPEX be included in calculating termination cost? If yes, what items of fixed assets from the ASRs ought to be considered relevant for termination cost? How should costs incurred by service providers for acquiring usage rights for spectrum be treated?

Bharti Airtel's Response:

We would like to submit that the CAPEX cost in the form of Depreciation on fixed assets deployed and Amortization of Spectrum cost along with a fair return on capital employed (ROCE) for both fixed assets and spectrum, be included while calculating the termination charges. These are actual costs like any other OPEX items such as network cost, etc.

CAPEX Cost:

The fundamental principle while deriving termination charge is to **compensate the terminating operator for the various costs (both CAPEX as well as OPEX) incurred in order to facilitate the call termination on its network**. With the expansion of the Indian telecom market in terms of subscribers and subsequent increase in the exchange of traffic, even the **operators who may not add new customers are required to invest heavily into network expansion so as to provide coverage, maintain Quality of Service levels and to support the increased incoming traffic from other operators.**

Internationally, countries that have adopted cost based methodologies for determination of mobile termination charges have considered CAPEX costs as a relevant cost. Some such examples include United Kingdom, Malaysia, Pakistan, Brazil, Israel, France, Egypt, South Africa, and South Korea.

There is no principle on the basis of which CPAEX cost can be excluded for determination of MTC. **Thus, in view of the above, it is essential that the Authority includes the CAPEX cost to arrive at a final termination charge. A fair Return on Capital employed should also be included while deriving the final 'cost based' termination charge** so that the operators have enough incentive to facilitate the incoming traffic on its network and have commensurate margins to invest in augmentation of its network required to cater to increase in traffic flow.

The following items need to be included, while calculating CAPEX for termination charges:

- ✓ Core Network - HLR, GMSC, MSC, STP, BSC, IN (SDP and SCP), SMSC etc.,
- ✓ Radio Network -BTS, Microwave Hops,
- ✓ Backhaul - OFC for Inter-node connectivity,
- ✓ Infrastructure costs,
- ✓ Associated IT CAPEX.

Spectrum Cost:

Spectrum cost paid in the form of entry fee is also Capex invested into the network and amortized over the period of the license. The amortization costs need to be factored in while determining the termination charges. Moreover, post the change in methodology of allotment of spectrum from administrative to auction; a significant amount of CAPEX has been incurred by the operators in acquiring spectrum. It is therefore imperative that such significant costs incurred by the operators should be considered while determining the termination charges.

A total of 29 licenses are coming up for extension in 2015-16, for which the operators will be required to bid for spectrum and reacquire the same to ensure continuity of services. Since, the interconnection usage charges are being determined for the upcoming period, this essential and high cost of acquiring spectrum should also be taken into account.

The spectrum cost paid by operators during the last three auctions in Nov'12, March'13, Feb'14 and a conservative estimate of spectrum cost in the forthcoming auction in early 2015, is estimated to have an impact of at least 6.22 paisa per MOU. It is pertinent to note that for

Indian operators, majority of the revenues accrue from voice with only 10% contributed by data. Therefore, the spectrum charges also need to be recovered from the voice minutes.

Auction	Spectrum auctioned (in Rs. Crs.)
Nov, 12 Auction	9407.64
Mar, 13 Auction	3639.48
Feb, 14 Auction	61162.22
Proposed Feb, 15 Auction *1800 & 900 MHz	42254.60**
Proposed Feb, 15 Auction ^ 800 MHz	6631.25#
Total Auction Proceeds	123095.19
Per Year Cost @ 17% (5% Amortization & 15% WACC)	24619.04
Total MOUs industry (2013-14) in Crs.##	395990
Spectrum Cost per MOU (in paisa)	6.22 paisa

Note: * 184 MHz of spectrum in 900MHz band & 104 MHz of spectrum in 1800MHz band
** 1800 MHz & 900 MHz price as per the reserve price vide TRAI's recommendations dated Oct, 14
^ 800 MHz considered as spectrum left unsold in Mar, 13 auction
# 800 MHz price as per the reserve price recommended by TRAI reference back to DoT dated Nov, 2014
Industry MOUs as per MOU/per subs/ per month for GSM & CDMA as per the TRAI PMR quarterly reports for FY 13-14

Therefore, we submit that the annual depreciation charges directly attributable and allocable to fixed assets and the annual amortization of Spectrum charges for setting up and operating the mobile telecom network should be considered for the determination of termination charges.

A fair return on the capital invested by the operator should also be considered in the costing model. The return should be based on Weighted Average Cost of Capital (WACC) on the capital employed by the operator, to ensure that adequate protection is given to the operator on its investments.

Q10. Is there any need to adjust costs associated (as reported in ASRs) with products other than voice calls, for the purpose of computing termination cost using the FAC method? If yes, please suggest the appropriate cost driver along with justification.

Bharti Airtel's Response:

Approximately, 15% of the total revenue is from sources other than voice. Non-Voice revenue streams comprise primarily three segments i.e. SMS, Data and VAS. We propose the following adjustments for the above products:

- **SMS Cost**: The cost of SMS has been determined by TRAI recently, basis which the SMS termination charge has been prescribed. Since, the cost per SMS (i.e. @2p per SMS) is known, it is suggested to calculate the total cost of SMS basis the same i.e. (Number of SMSs multiplied by 2p to get the SMS cost).

- **VAS Cost**: For VAS, since it is difficult to calculate a driver, we would suggest cost in proportion to the revenues should be deducted from the overall cost.

- **Data Cost**: Data is also like VAS and constitute a small proportion of revenue of mobile operators. Further, it is difficult to calculate a driver for deriving Data cost. We therefore recommend cost in proportion to the revenues be deducted from the overall cost.

It is further submitted that the Authority while determining the termination charge in 2009 followed the methodology of deducting the cost of VAS in proportion of the revenues. We propose that the same may be adopted for VAS and Data costs. The cost of termination for voice may be derived by eliminating the cost for SMS, VAS & Data as per the method prescribed above.

Q11. Do you agree with the methodologies explained for various variants of LRIC including the detailed description of computation of the termination cost using LRIC model in the Annexure? If not, please give your answer with justification.

Bharti Airtel's Response:

In LRIC model, Termination charge is determined using a bottom up approach where the incremental cost for a hypothetical operator is calculated on the basis of an assumed coverage and capacity instead of the cost of the actually deployed network.

Most variants of the LRIC model only consider the incremental cost, therefore, they do not entirely compensate the full cost. Given the asymmetric market structure and skewed resources such as spectrum, the incremental cost model is not suited for India. The reasons are detailed below:-

a) There are 7-12 operators in each service area with a heterogeneous profile in terms of their length of operations, network deployment, network coverage and customers served. Some of the operators have a vastly deployed network encompassing urban and rural areas whereas the others are largely present in urban areas. The LRIC modeling for the two set of operators is largely different and will yield varying results. LRIC is normally used only in those markets where the operator profiles are more homogenous.
b) There is a huge imbalance of traffic between operators and therefore, any method suggesting incremental cost would lead to subsidization of one operator by the other.
c) LRIC cost modeling does not allow recovery of historical costs incurred by the operators. As a consequence, it could result in an unfair situation where the marginal cost is pegged at a level which does not realize the true cost and erodes margin and subsequently roll out capabilities.

Further, the LRIC model is based upon a large set of assumptions on network parameters and any wrong assumption will result in an unrealistic Termination Charge. Given that such a model effectively starts from a blank piece of paper, there is a risk that relevant costs will be omitted from the model. Further, the model requires extensive data, not all of which is easily available. Obviously, the assumptions therefore run the risk of the overall model itself being doubtful in terms of robustness. In a fragmented market, like India, it is nearly impossible to

have a common set of assumptions between all operators and hence any set of assumptions, if proposed is amenable to dispute by one or the other operator.

Due to aforesaid reasons, we do not concur with the Authority estimating termination charges using any variant of the LRIC model.

Q12. In case it is decided to go for an LRIC model for determining termination cost, which is the most suitable variant of LRIC for the telecom service sector in the country in the present circumstances and why?

(i) LRIC
(ii) LRIC+
(iii) Pure LRIC

Bharti Airtel's Response:

Please refer to our response to Q11.

Q13. In case your response to the Q12 is LRIC+, what are the common costs that should be considered for computation of termination costs?

Bharti Airtel's Response:

Please refer to our response to Q11.

Q14. In case there is a significant difference in the mobile termination cost and fixed termination cost, will it be appropriate to prescribe different mobile termination charge and fixed termination charge?

Bharti Airtel's Response:

The charges for termination of calls into mobile and fixed line networks should not be asymmetrical, as the same would force the service providers to raise the tariffs for calls terminating onto the fixed line network of other operators and hence would discourage the subscribers from calling the fixed line numbers.

With 27.41 million fixed line subscribers in comparison to the 930.2 million wireless subscribers, the ratio will further get skewed, if differential pricing methodology is adopted by the operators due to differences in termination rates. Keeping in view that a large number of fixed line phones are fully substitutable with mobile phones, this may lead to a drastic change in the usage pattern of the subscribers wherein they will prefer calling mobile numbers as against a fixed line number. Such a scenario will be detrimental for the subsistence of fixed line business (largely Government owned operators), which is already under intense competitive pressure from mobile operators. This would also ultimately lead to large scale churning of the fixed line customers in favor of mobile phones. Thus, by asymmetric termination charges, the Government itself will lose money and value.

Therefore, we request the Authority to keep **uniform termination rates for both fixed line and mobile** to foster growth and sustainability of the fixed line business.

Q15. The Authority has already prescribed access charges to facilitate the introduction of calling cards. Is there any other issue which needs to be addressed so that the consumer gets the most competitive tariff for ISD calls?

Bharti Airtel's Response:

It is submitted that the Regulation on 'International Calling Card Services (Access Charges)' has been issued without adequate consideration to the view of the Industry on the said matter. Moreover, while the consultation exercise on the same issue focused on revenue sharing arrangements, the Authority has mandated cost based origination access charges for calling cards to be paid by the ILDO to the Access Service Provider. The origination access charges for such access via wireless and wireline have been set at Rs. 0.40 per minute and Rs. 1.20 per minute, respectively.

Access providers undertake heavy investments to set up critical infrastructure for telecom services, and any policy that inhibits, rather deprives them of their ability to pursue flexibility in pricing to recover these investments would be detrimental to the financial health of the access providers. The regulation, in its current form, is highly discriminatory and is against the access providers, as it shifts prevailing tariff forbearance from access providers over to ILDOs, who have now been reduced to the capacity of providing cost based origination services. We humbly submit that this regulation is essentially a step backwards and needs to be reviewed urgently.

This regulation would allow the ILDOs, to emerge as Access Providers, who without a network of their own would serve consumers otherwise served by access providers. The access providers have made huge capital intensive investments to set up networks and the investments shall be hampered. This regulation would allow the ILDOs to displace a large part, if not the entire, ISD traffic from the access providers, even though the latter is the entity that builds, operates and manages the whole network.

The Regulation in its present form has resulted in unbundling of the access network and has hampered and impeded on the ability of the access providers to offer a range of services at affordable prices. Such regulation would also have an associated inflationary effect on the cost/tariffs of domestic services as the 'cushion' available to the access providers for offering affordable local and NLD calls has been voided.

Competition and affordability in the ILD segment:

The competition in the international long distance segment has increased significantly with as many as 8-12 access players per service area. The same has resulted in a significant decline in the international long distance tariffs. In addition to the reduction in overall ISD tariffs, the service providers are also offering numerous add-on packs which allow subscribers to make

international long distance calls at substantially reduced tariffs. **Most operators offer ISD Special Tariff Vouchers (STVs); these provide cheaper calling rates without the need for a cumbersome call initiation process typical of calling cards.** Clearly there is enough competition in the market and customers already have ample choice in respect of their long distance calls.

Moreover, we also wish to state for the record that switching costs in the Indian telecommunications market poses no barriers to exit for subscribers, who can switch to another operator within a week. Concerns of Authority over lack of choice for subscribers for ISD services are completely unfounded and do not reflect an accurate picture of the ISD market.

Impact of Regulation on Indian TSPs

The Regulation, in its current shape and form, would have the following associated impacts on Indian TSPs:

- This would effectively deter investments by access providers since they will neither be able to get adequate compensation for their investments nor would have flexibility to run their business. This will ultimately lead to an adverse impact on building and nurturing national telecommunication networks. In our view, regulating ISD tariffs, if required at all, as in the case of Roaming and Domestic Leased Line tariffs, would have been a far more appropriate approach than allowing the entry of this new class of operators i.e. ILDOs, essentially to act as resellers of the access services, who without making any significant investments in infrastructure, sustain their businesses just by riding on the investments made by access providers.

- While prescribing termination charges under Interconnect Usage Charge (IUC) regulation, the Authority did not take into account a number of costs such as CAPEX, distribution cost, administrative costs, etc. While, these costs have a real impact on the economics of access services, and no rational reason can be presented for their exclusion, the authority explained the forbearance in Origination charges (IUC Regulation 2009) as the rationale behind prescribing below cost termination charge. TRAI previously noted that '*…… Service providers are free to recover their CAPEX from the rental and the Origination charges that is under forbearance….* The fixation/regulation of the access origination charge results in withdrawal of the facility granted to the originating service provider to recover the loss caused due to below cost fixation of termination charge. Consequently, the operators have been deprived of a crucial and important recourse available for recovering their costs which will force the operators to recoup the losses by enhancing the local/national call rates.

- In addition to the above, we wish to submit that origination access charges prescribed vide this regulation have been set even lower than origination charges for domestic toll free services which are primarily set on the basis of revenue share and do not have any connection with the costs.

- Mandating access origination charges in case of calling cards would tantamount to unbundling of access network, which is neither a goal, nor a change that has followed due consultation process.

- Under the Calling Party Pays (CPP) regime, the originating operator collects revenues on behalf of all participating networks and has the power to control tariffs. With the ability to control tariffs, the access provider is able to recover the costs of origination as well as the deficit from below cost termination. The current regulation will allow the transiting operator, a man in middle, who makes negligible investments to drive tariffs. As per industry estimates, access service providers have committed heavy investments (over 95%) in the entire telecom network as against the miniscule 2-3% invested by ILDOs. The power to drive tariffs should logically be the domain of the operator with the largest investment, i.e., the access service providers but with this Regulation, this power will radically shift to operators with microscopic investments, which should not be the case.

- This regulation has been issued with the retail consumer in mind, with little or no focus on its impact on the enterprise or B2B telecommunications business in India. International calling cards can be misused as substitutes for International Toll Free Services (ITFS). In the case of ITFS, revenue flows from the terminating/foreign operator to an Indian ILD operator, who in turn shares the revenue with originating Access Service Providers in India. However, in the case of calling cards, the Indian ILDO will tend to sell calling cards in India to the customers of the originating operator instead of the terminating operator, as a substitute of ITFS. This will not only displace ITFS revenues (origination charge) from the ILDO/Foreign Operators and harm the B2B telecommunications business in India, but would also lead to a significant reduction in foreign exchange. The contribution of ITFS revenues to the foreign exchange reserves of the country is well established, and as such merits consideration when analyzing the telecommunications access services market.

- The subject matter of this regulation has a direct nexus with the IUC regime, in so far that the current prescription of origination access charges is in essence a modification of the IUC framework. Access operators today find themselves in the midst of financial hardship, owing to below cost termination charges mandated via regulation. Forbearance in origination charges was intended to help operators recover the losses from below cost termination charges. The current regulation has essentially capped origination charges while the termination charges are already regulated at below cost levels. This selective approach by the Authority has effected an indirect amendment in the IUC framework without undertaking a corresponding deliberation/consultation from the entire industry.

We propose that the access charges for international calling cards be looked afresh along with this comprehensive consultation on the complete IUC framework.

Q16. Do you feel that the Authority's intervention is necessary in the matter of International Settlement Rates? If so, what should be the basis to determine International Settlement Rates?

Bharti Airtel's Response:

We believe that the Authority can play an important role with respect to the International settlement rates by taking up the matter with the regulators/ diplomatic channels in the foreign countries having very high settlement rates.

Currently, many of the countries, where a majority of traffic is terminating from India have very high international termination rates. To illustrate, the average settlement rates for some of such counties are as below:

Countries	Average International Settlement rates in Rs /min
Maldives	28.96
Myanmar	13.20
Oman	13.11
Afghanistan	10.50
Qatar	9.00
UAE	8.33
Philippines	6.90
Saudi Arabia	6.39
Sri Lanka	6.16
Nepal	5.40
Pakistan	5.28
Switzerland	5.10
Japan	4.80
Bhutan	2.40
Australia	2.10
Germany	1.32

As indicated in the table above, the Indian operators pay higher international termination charge to the foreign operator whereas the amount received by them for termination of international calls is lower owing to the same being regulated by the Authority.

Further, we would also like to state that the Indian operators do not have control over the retail rates charged to the consumer by the foreign operator for India bound calling. However, our international termination rates are regulated. **Therefore, we are neither able to provide lower rates to users in India nor we are able to charge the foreign operators on an equitable basis.** The present situation is that of a non-level playing field.

The Authority should support the industry by exploiting the diplomatic channels and open bilateral conversations/ negotiations with the foreign regulators/ licensor for reasonable and equitable international settlement rates.

Q17. Is there a need to fix a floor for international carriage charge for incoming international traffic or prescribe some revenue share between access service provider and the ILDO to safeguard the interest of ILDOs?

Bharti Airtel's Response:

International Settlement rates globally are a function of the mobile/ fixed termination charges and therefore indirectly contribute to margin for ILDOs as they operate on cost plus basis, covering their carriage costs and the business risk associated with international long distance business. In such manner, the ILDOs will be safeguarded from any business associated risks and the interests of ILDOs will be taken care as per the competitive market forces.

Therefore, we do not recommend fixing the floor for international carriage charge or prescribing some revenue share between access service provider and the ILDO.

Q18. What is the most appropriate level for International Termination Charge? Should it be uniform or should it depend on the originating country/region? Please provide full justification for your answer.

Bharti Airtel's Response:

The termination charge on Incoming ILD calls to India is amongst the lowest prevailing worldwide as is evident from table 4.3 of the consultation paper. The termination rates for international calls in most of the countries across globe are also regulated akin to India. While there has been significant increase in termination rates in other countries over last 5 years, the rates in India have not witnessed any change and have been constant at 40 paisa p.m. In comparison, the termination paid by Indian operators is approximately Rs 3-3.50/min. This arbitrage has resulted in highly skewed ration of incoming international calls to outgoing international calls. As of today, this ratio between outgoing and incoming calls stands at 1:20 an increase from 1:5 in the last 6 years. This has put severe pressure on industry's margins and revenues which are also impacted by the unlicensed OTTs (Over the top operators) players viz. Skype, Google etc.

Such a skew has the following implications:-

a) Indian customers subsidize the calling costs for international operators. This despite international callers having a much higher paying capacity (per capita GDP) compared to Indian customers.

b) Adverse impact on profitability of Indian telecom operators. Please note that the Indian operators share at current termination charges is just 3% of the total tariffs charged in countries from where the outbound calls originate.

c) Lost opportunity to earn higher foreign exchange by the country. At the present traffic volume of 88 billion minutes p.a. an increase of 50 paisa per minute will fetch additional forex revenues to the tune Rs. 4,400 crore per annum (~$733 million per annum).

The dramatic increase in incoming traffic has forced Indian operators to undertake network expansion to maintain quality and customer experience thus making it imperative that the termination charges are increased.

We also believe that charging differently for different countries may not be advisable as this will only result in international traffic flowing through the least cost path.

Thus, in view of the above submissions and in order to have parity with the charges paid by the Indian operators for termination in foreign countries, the termination charge for incoming international calls in India should be raised closer to Rs. 3-3.50 per minute either in one go or in a phased manner.

Q19. What should be the methodology for determining the domestic carriage charge? Is there a need to specify separate carriage charges for some specific geographic regions? If yes, on what basis should such geographic regions be identified? How should the carriage charges be determined separately for such geographic regions?

Bharti Airtel's Response

We do not recommend differential and higher ceiling for carriage in remote/ hilly areas. Differential carriage charges for remote/ hilly areas would cause operators to charge the ceiling rates for NLD Carriage to these locations, thereby resulting in differential tariffs by the access operators for carrying calls to and from these locations and an increase in the costs for providing services in these areas. Such a differentiated/higher STD tariff for remote and hilly areas would further alienate these regions from the main stream of the Country.

It is further submitted that the ceilings for carriage charges were fixed at Rs. 0.65 per minute in 2006. With an increase in competition and an increase in the minutes carried by the NLD operators, the cost of carriage has come down significantly. While we believe that the ceiling-based approach should continue, the reduction in costs and the prevalent rates in the market may warrant a reduction in the overall ceiling for carriage from the present ceiling of Rs. 0.65 per minute to Rs. 0.30 per minute.

It is also highlighted that DoT has taken up the project of having Optical Fiber connectivity in all villages; we expect this will be available to all NLD operators at reasonable rates in the near future. In such a scenario, it may be positively assumed that all NLD operators will start services in these areas and that competition would eliminate the need for any regulatory intervention on carriage charges.

Q20. Is there a need to regulate the TAX transit charges or should this be left to mutual negotiations? In the event, the transit charge is to be regulated, please provide complete data and methodology to calculate TAX transit charges.

Bharti Airtel's Response

We are of the view that introducing competition in this segment is the key to solve the issues related to the monopolistic TAX Transit charges levied by BSNL. We have the following submissions in this regard:

- Ideally transit charges should be payable only when the seeker operator is not in a position to establish direct interconnection with the provider operator at a GSMC location in the service area and therefore there will be need to provide new PoIs from the GMSC and wherever the terminating operator is not able to provide PoI's then they should allow transit tax service free of charge. It must, however, be emphasized that such facility **should be cost based** so that burden of the transit charge does not get transferred in the form of higher Termination charges

- However, as a deviation to the above principle, BSNL charges the transit charge where it is not able to provide PoI at their Cellone MSC and asks the operators to transit the call through the L1 TAX. In our view, the cost of BSNL's (provider) inability to provide the direct PoI should not be transferred to the other operators. Accordingly, i**t is submitted that the Transit charges should not be applicable where BSNL is unable to provide POI demanded by the operator** within 30 days.

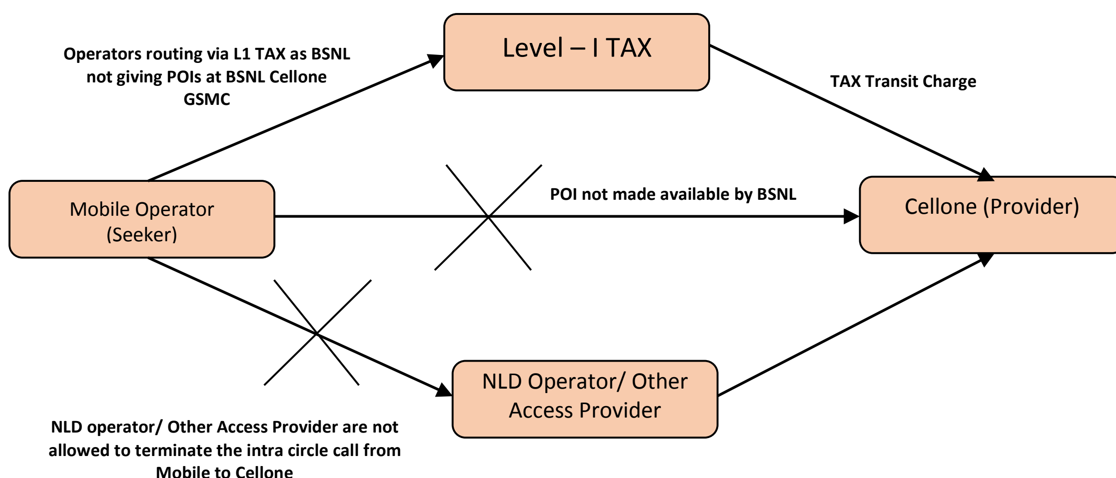

Fig 1- Diagram showing monopolistic behavior by BSNL w.r.t. Intra-circle Mobile to Mobile Termination

* In order to ensure level playing field, private operators both Access/NLD should also be allowed to provide the transit services for termination of calls to BSNL's/Other Private applied network. This will bring competition from other NLD/Access Provider by providing a free choice to the originating operator to either use BSNL L -I TAX or alternatively choose another operator to terminate the call on BSNL's Mobile.

While we expressed our views that the TAX transit charge should only be applicable wherein terminating operator is not in a position to establish direct interconnection with all service providers and therefore there may be a need to allow transit connectivity in the interim. It is also re- emphasized that such facility **should be cost based** so that burden of the transit charge does not get transferred in the form of higher Termination charges. The cost for TAX transit may be calculated using the below method:

	Unit	
A 50K ports Switch has a capacity of (A)	Erlangs	18,000
One Erlang traffic capacity is assumed to handle	min/day	600
Minute handling capacity of a 50 K switch in a year (C= AXBX365)	min/year	3,942,000,000
Per port Cost of Switch (D)	Rs.	900
Cost of Switch 50K ports (E = DX50000)	Rs.	45,000,000
Annualized Cost/ Depreciation considering life of 10 years (F=E/10)	Rs.	4,500,000
Employee, Admin, Mtnce, N/w Operating, and WACC in proportion to Depreciation (G)	Rs.	15,799,450.55
Total cost of a 50K Ports Switch (H = F+G)	Rs.	20,299,451
Per Minute Cost (C/H)	**paise**	**0.51**

Q21. How can the cost of providing transit carriage be segregated from the cost data in the ASR? Please provide a method and costing details to separately calculate this charge.

Bharti Airtel's Response:

We propose the following methodology for determining transit carriage:

	Unit	5 KM	30 KM	100 KM
Cost of 2MB Lease Line as per TRAI Rates (A)	Rs. /annum	12,086	47,243	145,681
One Erlang traffic capacity is assumed to handle (B)	min/ day	600	600	600
2MB is equivalent to (C)	Voice Channels	30	30	30
Assuming a utilization of 70%, the number of minutes of Voice traffic in a year (D = 0.7XBXCX365)	Rs.	4,599,000	4,599,000	4,599,000
Per Minute Cost (A/B)	**Paise**	**0.26**	**1.03**	**3.17**

Q22. If the costs of all relevant network elements are taken into account in the calculation of the fixed line termination charge, is there any further justification to have a separate transit carriage charge? Please give reasons for your answer.

Bharti Airtel's Response

As per the present IUC regime, the terminating operator is entitled to the termination charge for calls terminating in its network. The regime envisages the principle that the originating network has the choice to either directly terminate the call in to the terminating network or route the call via the carrier operator for further termination into the terminating network.

The choice of the carrier operator shall solely lie with the originating operator.

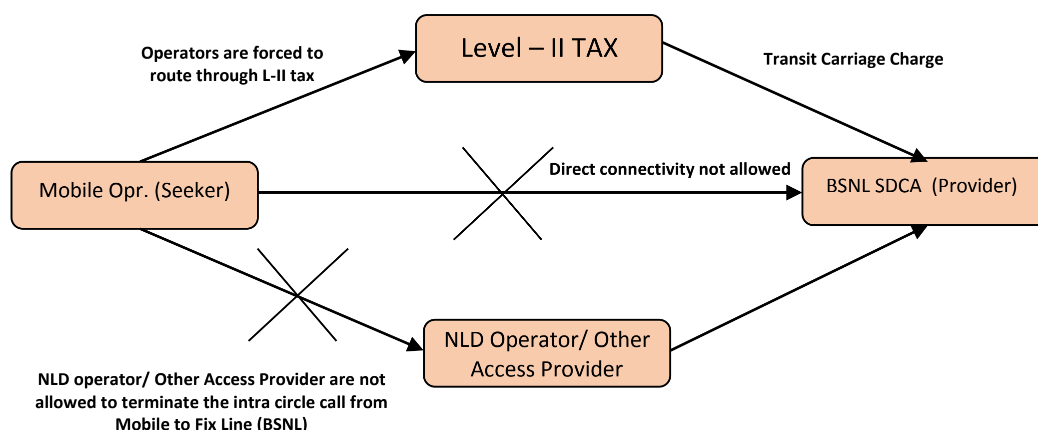

Fig 2- Diagram showing monopolistic behavior by BSNL w.r.t. Intra-circle Mobile to Fixed Line Termination

However, as a deviation to the above principle, BSNL has declared their L-II TAX as the terminating point for the calls originating from the mobile network of the private operators to their fixed line network (as shown above). Having declared L-II TAX as the terminating point, it should be the responsibility of BSNL to carry the call further to the terminating SDCA without any additional charges. However, BSNL had been consistently charging it under the disguise of transit carriage charge which is grossly wrong because of the following reasons:

- They do not provide POI at SDCA and declare their LDCC TAX (L2 TAX) as the only point of termination of calls from mobile networks to their fixed line network;
- The originating operator, i.e., the mobile operator is denied the right and flexibility to choose the carrier which leads to mandatory carriage charges payable to BSNL.
- So, in our view, the Authority should regulate this element by directing BSNL:
    - ✓ To provide connectivity at all '**Declared termination points'** in their network.
    - ✓ Bear the cost of carriage within its own network, i.e., from '**Declared termination point'** (L 2 TAX) to the actual point of termination (SDCA Switch).

The Authority may also allow carriage of calls by any other NLD/Access provider with whom BSNL has already established the POI at SDCA level or point of actual termination. Allowance of other NLD/ Access provider to terminate directly at the POI at SDCA level will introduce the much needed competition and eliminate the need to determine transit carriage charge. In fact, this is an element where no competition exists today.

- Going forward, we propose that the termination point for the fixed line should also be circle based, i.e., the mobile operator should terminate at circle level L1 tax in case of BSNL. It shall be the responsibility of all operators including the fixed line operator to carry calls from declared termination point to the actual point of termination at its own cost. This will simplify the interconnection between mobile and fixed line operators and would enable the fixed/mobile convergence and Fixed Number Portability.

- Notwithstanding the above, if the originating operator (Mobile operator) voluntarily opts to terminate the call at L-II TAX of BSNL instead of SDCA, BSNL may be allowed to charge the carriage charges but the said charges must be strictly cost based, as defined by the Authority.

<u>Other cost components such as Port Charges, Media Charges and Colocation Charges to be considered/reviewed during IUC Review:</u>

Port Charges, Media Charges and Colocation Charges are the CAPEX Cost associated with the Interconnection Usage Charge. While taking the CAPEX cost in the termination charge, there is also a need to review and mandate that no extra charges are paid on account of the port charges, media charges and the collocation charges as the costs accruing towards the same would have already been subsumed in the Interconnection Usage Charges determined by the Authority.

In order to address the issues arising out of these charges, we recommend that the Authority should re-examine the provisions of RIO regulations as the Interconnection Charges and IUC are interrelated.

We therefore recommend that the charges corresponding to the Port, Co-location, transmission media, rack charges, etc., be merged in the Termination Charge (IUC) as these are already included in the Capital Expenditure. This will not only simplify the entire interconnection regime but shall also ensure level playing field between various operators. We also propose that it shall be the responsibility of each operator to bear costs such as transmission media, collocation, etc., in proportion to their outgoing traffic.