



05th February 2009

Shri Lav Gupta
Principal Advisor (FN)
Telecom Regulatory Authority of India (TRAI)
Mahanagar Doorsanchar Bhawan
New Delhi

Sub: TRAI Consultation Paper on Review of Interconnection Usage Charge (IUC)

Dear Sir,

This has reference to the TRAI Consultation Paper dated 31st December 2008, seeking comments on "Review of Interconnection Usage Charges (IUC)".

Tata Teleservices Limited and Tata Teleservices (Maharashtra) Limited [together referred as TTL] welcome the initiatives suggested by the TRAI to undertake the review of the Interconnection Usage Charges (IUC) levied on provision of Telecom Services in India. This follow up to the interactions we have had in the recent months is well appreciated by TTL.

The dynamism in the Indian Telecom scenario has been well acknowledged not only in India but has been the cynosure of the international community too. The vibrant telecom sector in the country has exceeded the targets and also contributed significantly to the inclusive and sustained economic growth of the country.

In the present context, the past efforts of the TRAI which implemented a simple, resilient, and easy to implement IUC regime had a catalytic impact on the growth of the telecom sector. Keeping in view that the current IUC is based on the regulations set in 2003, and revised in 2006 it is an appreciable step of the Authority to undertake this review of IUC to enable and take into account the significant developments in the growth of subscribers, operators, and new technologies. The current established framework of the Authority on the IUC has paid good dividends in the growth of the Indian telecom sector. Future principles which would form the basis of this review should be in consonance with the environment of the regulatory continuity and methodology followed so far. The current IUC, particularly termination component charges are high which even TRAI acknowledged in the IUC Regulation dated February, 2006. **We emphasize the urgent need to implement a reduction in the termination charges to encourage genuine competition and curtail and preclude monopolistic tendencies in the market.**

It would be pertinent to mention the need to factor in aspect of "cost of implementation" of the model considered for regulatory directions in formulating the recommendation of the current review of IUC.

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We endorse the observation of the Authority that the emphasis should be on encouraging ways of offering consumers genuine new services rather than arbitrage opportunities, and given the success of the existing approach the review should promote resource utilization, and deliver the benefits to the subscribers of the service. It is recommended that the “ Bill and Keep “ or “Cost Based” methodology be adopted and further refined by the Authority as the reduction in the termination charges will be in the interests of consumers and overall growth of the sector.

Our response to the specific issues for consultation is given in the Appendix attached.

Thanking you and assuring you of our best attention always.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Anand Dalal', written over a circular stamp.

Anand Dalal
Head – Regulatory Affairs
Tata Teleservices Limited
And
Authorized Signatory
For Tata Teleservices (Maharashtra) Limited

Enclosures: As above.



Appendix .

Refers to Tata Teleservices
Letter no Dated 05 Feb 09.

**Comments from Tata Teleservices on
Consultation Paper on Interconnect Usage Charges (IUC)**

Q.1 What components of Interconnect Usage Charge (IUC) should be reviewed?

We recommend the following components of the IUC to be reviewed:

- (i) Termination Charges
- (iii) Transit Charges
- (v) Port Charges

We recommend the immediate review of the above Interconnection Charges for brief reasons as enumerated below:-

1. **Termination Charges:** The termination charge for most operators particularly new / second network and smaller operators is an item of cost and not of revenue as they are net payer of termination charge. Higher termination charges reduce their margins and their competitive ability to match established and larger operators. To enhance competition it is imperative that termination charges for both wireline and wireless are reduced so that no operator has an advantage of transferring undue costs to other operators.

The termination cost is one of the main costs for the new entrants. The excessive termination rate gives competitive advantage to the existing players which delay the onset of real competition from the new entrants. **The current termination charges are higher and transfer costs of the terminating network to the originating network. The existing IUC regime is promoting on-net traffic and therefore does not serve the basic objective to promote competition. Considering market reports a large difference in the off-net and on-net call rates, there is a pressing need to review the fixed and mobile termination charge components of the IUC.**

2. **Transit Charges:** Since TRAI is reviewing the origination and termination charges, it is necessary that TRAI reviews and prescribes the ceiling for transit charges as well. It is not the cellular subscribers alone who bear the cost, even when the BSNL NLD POIs are congested then NLD and ILD carriers are required to handover the traffic at a different POI for which BSNL charges Rs.0.19 per minute as a transit carriage charge. The prevailing transit carriage charges do not protect the consumer interest and result in enriching of the incumbent operator. Therefore there is urgent need to review the charges so that minimal costs are transferred to the interconnecting networks.



3. **Port Charges:** The Ports are part of the interconnection related charges and the Authority's port charges regulation is notified under the same powers used for IUC regulation. To maintain the homogeneity and consistency, it would be essential to review the Port charges along with the present IUC review. The port related OPEX is recovered from the IUC but the capital cost is recovered from the separate port charges. The two costs for the same items are being recovered through two different principles - OPEX being recovered on the basis of usage and CAPEX directly from the interconnection seeker.

Even if inconsistencies between the port and other IUC charges are not considered and kept apart, the port charges review is still needed as the Authority's adopted costing methodology requires regular review. If the charges are not reviewed then there is an over recovery of costs which unnecessarily enriches port providers i.e. BSNL. In this regard the following submissions are relevant:

In the port charges review, the Authority did not reveal the total estimated cost for port systems. However using the notified port charges, depreciation rate, cost of capital and the reverse calculations one may obtain the rough estimate of the capital cost per E1 which may be around Rs 162 500. The calculation in the table which follows shows that there would be an over recovery of around 14% in the second year of the regulation even if we assume that the costs remain the same level when the regulation was notified:

Table 1

Year	Depreciation	Net Block	Cost capital of	Total cost	TRAI charges	Over recovery
1 st year	16250	162500	22750	39000	39000	Zero
2 nd year	16250	146250	20475	36725	39000	2275
3 rd year	16250	130000	18200	34450	39000	4550
4 th year	16250	113750	15925	32175	39000	
5 th year	16250	97500	13650	29900	39000	
6 th year	16250	81250	11375	27625	39000	
7 th year	16250	65000	9100	25350	39000	
8 th year	16250	48750	6825	23075	39000	
9 th year	16250	32500	4550	20800	39000	
10 th year	16250	16250	2275	18525	39000	

The above mentioned estimate clearly indicates that even if we considered that there is no reduction in cost and the cost recovery principles remain the same, even then it is clear to review the port charges as BSNL is over recovering cost which has implication of crores of rupees on the Industry. The Authority is therefore requested to review the port charges and align it with the actual costs.



4. The NLD carriage charge is only IUC component which has been reviewed since the inception of IUC Regulation. The Authority had fixed NLD carriage charges under IUC Regulations of October, 2003 which was based on the distance ranging from Rs.0.20 for 50 Kms to Rs.1.10 per minute for distance of 500 kms and above. The NLD carriage charges were reviewed by TRAI in February 2006 and a new ceiling of Rs.0.65 per minute irrespective of the distance was specified.

The NLD carriage charge is comparatively competitive and recently reviewed and therefore we believe there is no need to review the carriage charges. Further the prevailing market rates are below the ceiling which clearly establishes that the **NLD carriage market is largely competitive and there is no need to review the present ceiling of Rs.0.65 per minute.** We do not recommend an increase in this - for hilly and other remote locations, since the telecom penetration in such areas should be increased with more incentives rather than an increase in tariffs.

Q2. In view of the details provided in the paper, please give your opinion whether TRAI should continue with the existing methodology of fully allocated cost with appropriate assignments for termination charge or changeover to LRIC or its variant. Please provide full justification.

We also endorse the following observations of the TRAI:

“As regimes increase in complexity, operators and potential entrants are more likely to focus on arbitrage opportunities than ways to offer consumers genuinely new services. ***There is no guarantee that detailed cost estimation approaches will be accurate.*** It is therefore necessary that regulators may decide the costing methodology and approach used based on the development of telecommunications in the country. ***If an approach has been established then motivation must be really strong to change it in the next review.***

Extract from Para 1.3, TRAI Consultation Paper of 31st Dec 08.

There is substantial cost involved at the regulators end specially to evaluate LRIC models, if applied, for various networks and to verify claims and counter-claims. There would be cost involved at the service providers' end in preparing and giving detailed information required for such an exercise and implementing the changes in their networks.

Extract from Para 3.1.6, TRAI Consultation Paper of 31st Dec 08.

The current TRAI methodology is technology neutral and principle should continue. The termination rate is not a guarantee for revenues and margins. The revenue is a function of retail prices only. It has been proved that, the inter operator compensation in form of termination charges is only a notional cost and provide regulatory arbitrage to increase cost of off net calls. The higher termination charge using capital cost is not only inconsistent with the causation principle, but also provide undue advantage to the existing large operators and disadvantage to new and emerging operators/ second networks by offering cheaper on-net



calls. Most regulators are working to decide rates such that inefficient costs or undesired costs are not transferred from one operator to the other operator. The consumer welfare and competition can best be achieved by recovering most of the internal network costs from end subscribers and not transferring on to the other operators.

The Calling Party Pays (CPP) regime is an inefficient mechanism for inter operator compensation for termination of calls especially when markets are fairly competitive and there is nearly balanced flow of traffic. The current regime of uniform reciprocal compensation of 30p is resulting in nearly negligible net revenues with the most operators although transactions worth thousands of crores of rupees take place. The current mechanism of compensation is in-efficient as it unnecessarily holds thousands of crores of money for inter-operator adjustments in the working capital which can be productively used by investing in the networks.

We suggest that the Authority should review the current CPP regime as it is causing more problems in the current competitive market for the following reasons.

- (i) When traffic is more or less balanced between operators then CPP regime only creates a notional termination costs as there is no net implication on revenues or margins. The net revenues available with service providers on account of termination are negligible to the overall inter-operator transactions.
- (ii) The CPP regime creates unnecessary inefficiencies for measurement and settlement of inter-operator compensations. Gives rise to innumerable disputes which are settled by dominant operators through disconnection of POIs.
- (iii) The inter-operator transactions are holding crores of rupees which can be productively used in the network expansion, particularly for rural areas.
- (iv) Many technologies like CDMA, GSM, WiMax, HSPA, FMC, wireline etc will be available with own network costs, requiring detailed estimation, fixation of termination charges etc making it very complex to estimate and fix termination charges for proper compensation.
- (v) It un-necessarily inflates off net call costs.

Bill and Keep Regime

We are of the strong view that a viable alternative to the CPP is the Bill and Keep regime. This provides a mechanism whereby subscribers pay for the benefit of making and receiving calls. The "Bill and Keep" regime has number of benefits which foster economic efficiency by reducing service providers administrative costs and releases the capital held for inter-operator settlement of IUC. The payment of reciprocal compensation of termination charges requires that service providers incur significant administrative costs to measure, record, and bill for exchanged traffic. The whole scenario will become increasingly complex with soon to be launched innumerable technologies having own costs. The service providers also reconcile discrepancies in their traffic measurements, generating additional administrative costs for



settlement of IUC bills. . Bill and keep reduces and nearly removes these costs by eliminating the need for service providers to measure, record, and bill every minute of every call.

The Bill and keep is also administratively easier from a regulatory perspective, because it would eliminate the need for the Authority to review among other things, cost studies, rates in interconnection agreements and also reduce the innumerable disputes between the operators. The frequent disconnection of POIs for settlement of compensations would also abate. In a perfectly competitive scenario, operators have more or less balanced traffic and therefore compensation based on CPP regime is not required. The existing telecom scenario is much more competitive and therefore bill and keep is more relevant as compared to the CPP regime.

In the CPP regime the service providers have the opportunity and incentives to transfer costs to their competitors which provides them economic and competitive advantage. Such regulatory manipulation is more evident in case of new entrant/ second network who has to depend on the incumbents for termination of calls and the incumbent service providers also are the primary competitor of the new networks. The service provider should recover their costs to originate and terminate traffic from their own subscribers and not from each other. Bill and keep imposes just such a requirement by eliminating the regulatory arbitrage available with the operators to price off net calls much higher (100% to 400%) than the on net calls.

In case the Authority still believes that the current CPP regime should be continued, then the international best practices for determination of IUC can be followed. **However, while using any methodology it may be kept in mind that the methodology should be in the interest of consumers and overall growth of the sector.**

In case LRIC is used using the following approach which is apparent and correct for the present telecom scenario, then the cost estimates would be even less than around 10p per minute for which an association - AUSPI had already submitted details using the TRAI's current methodology:

- (i) 100% passive infrastructure for new operators
- (ii) Fair distribution of incoming and outgoing traffic i.e 55: 45
- (iii) Economic depreciation considering true value of assets
- (iv) Correct industry benchmarks for equipment cost and MoU.
- (v) Correct cost apportionment drivers

Therefore, we recommend that the TRAI should adopt the Bill and Keep or the cost based regime. Needless to say this is to benefit from a monopolistic tendency which as rightfully observed by the Authority, (Ref Para 3.2.1 of Consultation Paper) needs to be curtailed.



Q3. Should termination charge be strictly 'cost-based' or should the principle of 'cost-oriented' be applied taking into account other affecting factors? Give reasons in support of your answer.

We recommend that the termination charge should be “cost –based” and there is an urgent need for reduction of termination charge, which is made out for the following reasons:-

- Exponential telecom growth. With the current 365 million subscribers, there has been significant growth since the last review of the Termination Charge. While increase in the Minutes of Usage is substantial, ,(taking the “ Networking Effect” into consideration the rate of increase in traffic is much higher than the rate of increase in customers) the corresponding increase in OPEX has been comparatively lower, thereby the scope for reduction in Terminating Charge has increased even further.
- Growth in minutes of usage. Based on the computations, it can be concluded that the current level of minutes has drastically brought down the cost of termination which should typically lie in between a range of Rs. 0.06 per minute Rs. 0.11 per minute and hence must be brought down from the existing level of Rs. 0.30 per minute. TRAI also can not adopt a principle different from what it adopted in 2003. It must be remembered that it was this reduction brought in by TRAI, which was responsible for the explosive growth in the telecom sector.
- Such tremendous saving to the consumer who would directly benefit by a **reduction in tariff by about Rs. 0.24 to Rs. 0.19 per minute and would lead to the next round of explosive growth.**
- High termination charges favour larger incumbent operators.
- A cost and revenue transactions analysis across telecom operators today demonstrates clearly that mobile operators who have large subscriber base benefit from high IUC termination charges at the cost of smaller and newer/Second Network operators.

While the charges themselves are equal, a relatively higher burden is borne by smaller operators. This is because smaller and new/Second Network mobile operators pay proportionately larger IUC charges month on month since a higher proportion of their calls terminate on mobile operators.

Termination costs above the actual cost leads to market distortion. Differentially price its off-net and on-net by large operators because of high termination charge. A small operator can set its off net prices below the on-net prices of large operator to attract customers which forces small operator to incur losses. Lower termination charges would increases service uptake. Even though the average call rates in India are one of the lowest in the world, for some sections of society they remain high preventing them from being connected. Government has recently encouraged the operators to cover 95% of the development blocks to reap the benefit of 2% reduction in USO levy. High termination charges will prevent the rural population from being connected.



Termination rates were set 5 years ago and needs revision. TRAI had used cost based methodology to arrive at the termination costs wherein it considered the operational cost, minute of usage and the subscriber base. In the ensuing 5 years due to advances in the technology, networks have become more efficient reducing the termination charges below what were calculated in 2003. Hence a review of termination charges is long overdue.

Data published by TRAI in its last four Quarterly Reports of Telecom Parameters, the quarterly figures of the Minutes of Usage and the subscriber numbers for the four quarters ending June 30, '07, September 30,'07 December 31, '07 and March 31, 2008 have been used as the basic input for our computations. These have been reproduced in the Table 2 below. In addition, the table also computes the average quarterly subscriber & the average monthly minutes

Table 2

GSM	*O/G MOU per subscriber (Min.)	*I/C MOU per subscriber (Min.)	*Total MOU per subscriber (Min.)	*No. of Subscribers at the end of Quarter (million)	Average Quarterly Subscribers (million)	Avg Monthly Minutes (Min.)	Average Minutes for Every Quarter (Min.)
Jan'08 – Mar'08	236	257	493	192.7	182.465	89955.245	269865.735
Oct'07 – Dec'07	221	243	464	172.23	163.11	75683.04	227049.12
Jul'07 – Sept'07	218	244	462	153.99	144.89	66939.18	200817.54
Apr'07 - June'07	222	254	476	135.79	128.13	60989.88	182969.64
Jan'07 – Mar '07				120.47			

CDMA	*O/G MOU per subscriber (Min.)	*I/C MOU per subscriber (Min.)	*Total MOU per subscriber (Min.)	*No. of Subscribers at the end of Quarter (million)	Average Quarterly Subscribers (million)	Avg Monthly Minutes (Min.)	Average Minutes For Every Quarter (Min.)
Jan'08 – Mar'08	180	184	364	68.37	64.88	23616.32	70848.96
Oct'07 – Dec'07	189	186	375	61.39	58.235	21838.125	65514.375
Jul'07 – Sept'07	207	206	413	55.08	52.105	21519.365	64558.095
Apr'07 - June'07	226	235	462	49.13	46.885	21660.87	64982.61
Jan'07 – Mar '07				44.64			
Blended (GSM+CDMA)	*O/G MOU per subscriber (Min.)	*I/C MOU per subscriber (Min.)	*Total MOU per subscriber (Min.)	*No. of Subscribers at the end of Quarter (million)	Average Quarterly Subscribers (million)	Avg Monthly Minutes (Min.)	Average Minutes for Every Quarter (Min.)
Jan'08 - Mar'08	416	441	857	261.07	247.345	113571.565	340714.695
Oct'07 - Dec'07	410	429	839	233.62	221.345	97521.165	292563.495
Jul'07 - Sept'07	425	450	875	209.07	196.995	88458.545	265375.635
Apr'07 - June'07	448	489	938	184.92	175.015	82650.75	247952.25
Jan'07 - Mar '07				165.11			

Total Minutes (April'07 - March'08) (Mn.):	1,146,606.08
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The above Table 2 also presents the computed minutes of traffic for all mobile networks and uses it for the final arriving at the final tally of minutes for the period April 2007 to March 2008.

The calculation of Termination Charges requires computation of Total revenue and Operational Expense for the respective year, which requires a slight revisit to the published TRAI Performance Statistics. As per the TRAI Performance Indicator Report, the total revenue for the financial year (Apr' 07 – Mar'08) was estimated to be Rs.129,083/- Crores. Computation of the Operation expenses however, cannot be directly ascertained due to absence of any consolidated data. In order to overcome this limitation an estimation of the same has been made by making use of the industry benchmark figures, wherein the Operation Expenses incurred on account of Mobile Termination Charges has been estimated to lie around 5% to 10% excluding expenses such as subscriber acquisition cost, license fees, spectrum charges, etc. which are in any case required for the network and the service provided on it by the operator irrespective of where the call is terminated.

Keeping, the said figure in mind, the final calculations for arriving at the Termination rate tally have been arrived at by computing the ratio between the Operational expense on account of mobile termination versus the total minutes. The details of the said computation are as under:

	2007- 08
Total Revenue (Bn.)	1,290.83
Opex @ 5%	64.54
Total Minutes (April'07 - March'08) (Bn.):	1146.606
Termination Charges (Rs.)	0.056

	2007- 08
Total Revenue (Bn.)	1,290.83
Opex @ 10%	129.08
Total Minutes (April'07 - March'08) (Bn.):	1146.606
Termination Charges (Rs.)	0.112

Based on the above computations, it can be concluded that the current level of Minutes has drastically brought down the cost of termination which should typically lie in between a range of Rs. 0.06/minute – Rs. 0.11/minute and hence, must be brought down from the existing level of Rs. 0.30/minute. *TRAI also cannot adopt a principle different from what it adopted in 2003. It also must be remembered that it was this reduction brought in by TRAI, which was responsible for the explosive growth in the telecom sector. Now that the Government has included more players in the network, this is an ideal stage for increasing competition by drastically reducing termination charges to the bare costs calculated above.*

Such a step would result in tremendous savings to the consumer, who would directly benefit by a reduction in tariff by about Rs. 0.24 to Rs. 0.19 per minute and would lead to the next round of explosive growth.



The above calculations have been done based on the consolidated data. The actual minutes of outgoing and incoming calls differ from network to network because of two factors. These are the size of the network and the calling pattern of subscribers. The imbalance is particularly acute at the beginning of the service by a new operator/ Second Network and those operators whose subscriber share is much smaller. Additionally, in the wake of the new licenses granted by the DoT, reduction in Termination charges would result in improving their business case significantly which will bring in more healthy competition and thus the consumers will be benefited.

The above is also based on the following aspects:-

(i) Cost causation: Service providers acquire customers to provide incoming and outgoing facility.

Service providers roll out their network to acquire new customers and provide telecom services. The service provider issue telephone number to the subscriber, so that it could be used to receive the calls. Therefore, the capital expenditure to rollout network and provide incoming and outgoing service is caused to acquire new customer and not caused by the calling party for making the call. Even if calling party does not make a call, the network with outgoing and incoming calling capabilities would still be operating and therefore the capital costs are not attributable to the calling party. Only the OPEX i.e expenditure to run the network is the relevant cost for determination of termination charges.

(ii) Cost causation: Licensing and Quality of Service Requirement

As per the license conditions the service provider has to establish and maintain interconnection for transmission and reception of the messages. Further, the transmission and reception of the calls/ messages are subject to the TRAI Quality of service Regulations. The service provider would not get the operating license unless that service provider establishes the capability of receiving and transmitting messages. Therefore, the outgoing and incoming facility is setup by the service provider to obtain the operating license i.e, the capital cost is caused much before the commercial launch and calling party making the calls.

(iii) The TRAI methodology and the Consumer Benefit

The termination charges are input costs for termination of calls. The net termination revenue is negligible, when compared to the overall transaction for termination of calls. The inter-operators adjustments require large working capital. In case termination charges are reduced, the working capital which is locked for settlement of termination charges can be used in productive manner by way of investing the same in the network. It is evident that the consumers have benefited from the low termination rates and would get more benefits, if the termination rates are further lowered. The existing rates of termination charges are providing regulatory arbitrage to established operators to make on net calls cheaper than the off net calls.



(iv) The TRAI methodology and Promotion of Competition

As emphasized above, lowering of termination charges would promote competition and consumers will be further benefited because amongst other things, it would provide less opportunity for arbitrage for off-net and on-net calls and regulatory distortions.

(v) The existing Methodology was developed by the Authority after following an Extensive consultation process.

The existing methodology has been decided after proper consultation by the Authority in, 1999. The methodology was given in the TRAI's consultation paper on Tariffs, which clearly indicated that the capital costs are to be recovered through rental and operating costs through the call charges. The methodology is in use for last ten years and there is little evidence and justification to change this methodology to suit a few large operators.

Alternatively, TRAI can also adopt the Bill and Keep methodology.

Q4. In the absence of cost data for value added services, how should the revenue of such services be taken into account for determination of termination charge?

The issue is only relevant in case the Authority wished to continue with the existing CPP regime.

We are in agreement with the view of non inclusion of both revenue & OPEX emanating out/as a result of VAS towards determination of termination charges. While the revenue component can easily be identified, computation of OPEX can be arrived at using historical trends and approximated at a level of total OPEX.

The network costs are common for carriage of voice and other Value Added Services like SMS, MMS, content based services, GPRS etc. Since the network costs are common, the costs should be apportioned appropriately and attributed to the respective products and services.

Since the tariffs are under forbearance, it would be more appropriate to apportion the costs on the basis of revenue and not on the basis of network usage. The correct cost apportionment driver in the case of VAS is revenue and not the cost. Therefore there is no need to estimate costs for the VAS. In case the Authority allows minimal apportionment of costs on the basis of usage then on one hand more costs will be allocated for termination of calls which would not be beneficial for competition and customers and on the other hand it would minimize costs for the VAS services including premium services like tele-voting, ringtones, jokes etc.



Therefore, the revenue likely to be earned from the VAS should be completely excluded from the revenue requirement estimated for the MTC.

Q5. Are asymmetric termination charges justified? If yes, which of the following should be the basis?

(i) Existing service providers vs. new entrant

(ii) Urban lines vs. rural lines

(iii) Mobile termination charge vs. fixed termination charge

Give justifications for your answer.

We recommend the methodology of Asymmetric Termination Charges which should be done on the “Existing service provider Vs New Entrant” basis.

The Indian market structure today makes networks fall into two clear categories:

- (i) **Existing networks** having large customer base in addition to inherent network advantages (spectrum in 900MHz allocation; and also allocation beyond 6.2MHz).
- (ii) **New networks/ second networks** - still to launch their services and will need to establish a network subscriber base; in addition, severe network disadvantages to existing networks (1800 MHz and 4.4MHz allocation)

Internationally, Regulators adopt asymmetrical MTC regime to compensate late entrants for the higher costs incurred due to the differences in the spectrum allocation bands. The cell radii for the 1800 MHz frequency band are much lower than 900 MHz, thereby resulting in increased number of sites and higher incremental CAPEX. Hence, the differences in spectrum allocation ranges could result in cost differences between the operators. In India, many of the established operators have already been allocated spectrum in both 900 MHz and 1800 MHz bands, while the late entrants have been allocated spectrum **only in 1800 MHz frequency band**, resulting in cost differences between operators building a network for similar type of coverage. The difference is more significant and more evident in the sparsely populated areas in semi urban and rural habitation.

Thus, Asymmetric termination charges need to be introduced for the reasons enumerated in sections below.

Asymmetric terminations charges promote fair competition

This asymmetry between larger and smaller networks is the basis upon which several regulators around the world have introduced asymmetric termination charges to promote fair competition. We cite the following details to substantiate this.



EXHIBIT 2a: Asymmetric rates have been introduced in many countries shortly after entry of the 3rd operator

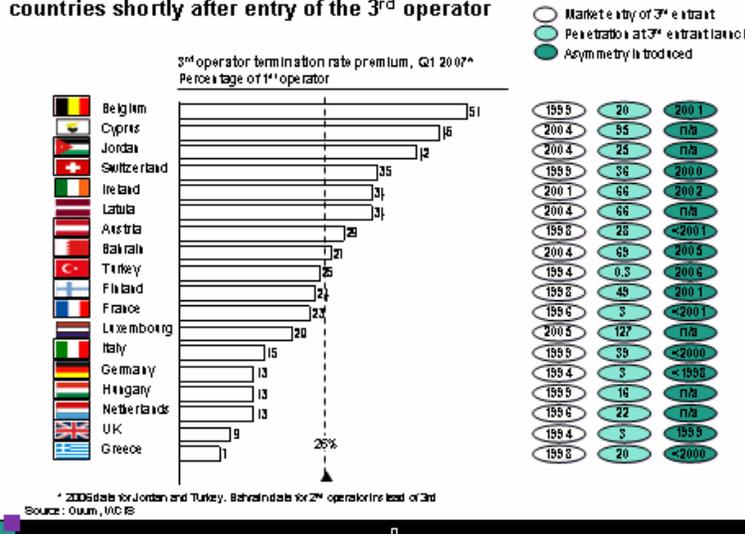
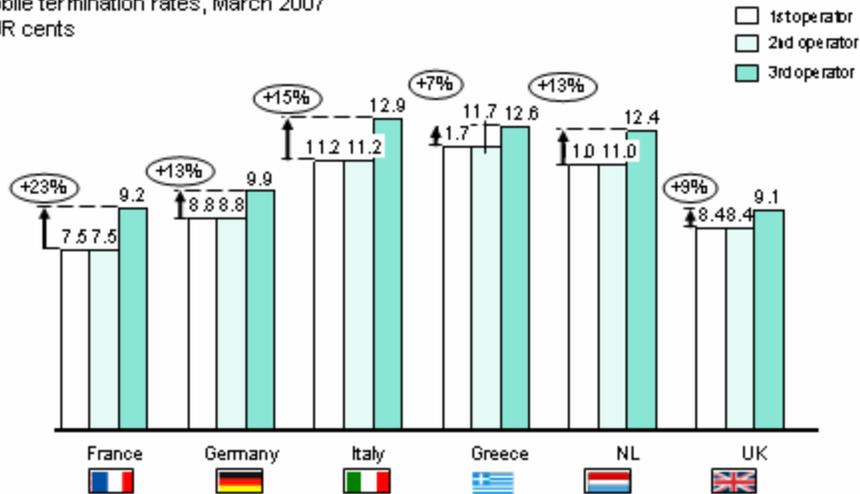


Exhibit 2a demonstrates how Belgium, Cyprus, Jordan, Switzerland, Ireland, Latvia, Austria, Bahrain, Turkey, Finland, France, Luxembourg, Italy, Germany, France, Netherlands, UK and Greece, all introduced asymmetric termination charges when the third operator was introduced to promote competition by reducing the charges paid by smaller, newer/ Second Network operators relative to larger operators. It should be noted that most of these countries do not have a fourth operator, however if they did, it would require an even greater level of asymmetry to create a level playing field. Further, it demonstrates the extent of the 3rd operator termination rate relative to the first operator – as high as a 51% premium in the case of Belgium, with an average of 26% across this sample set. Such regulation is long overdue and explains, in part, the significant difference in profitability between larger and smaller operators in India today.

Exhibit 2b: Asymmetric termination rates are common in several countries to support competition between larger and smaller players

Mobile termination rates, March 2007
EUR cents



Source: Oium

NOT EXHAUSTIVE

Exhibit 2b demonstrates how asymmetric termination charges persist (although at a reduced level) even in relatively mature telecom markets, recognizing the need to sustain such efforts to maintain equity among larger and smaller players.

Martin Peitz¹, Christian Chalopin², Yuntsai Chou and Kung-Chung Liu³ are some of the scholars who have studied the impact of asymmetric termination charges on penetration level, consumer welfare, stimulating entry and industry profitability among others and have concluded that asymmetric termination charges lead to increased industry profitability, makes market more desirable for newer firms, increases consumer welfare and leads to increased service uptake.⁴

Symmetric termination puts newer/ Second Network entrants at a disadvantage⁵

Laurent Benzoni⁶ from his study of European mobile market has concluded that late entrant's suffer from inherent disadvantages in a fixed-cost industry with fast growing demand. The later a firm enters such a market, the higher its initial investments need to be as late entrant

¹ "Asymmetric access price regulation in telecommunications market"- Peitz M, 2002

² "Asymmetric regulation applied to interconnection charges "-Chalopin C, 2005

³ "Paradoxical impact of asymmetric regulation in Taiwan's mobile communications"- Chou Y, Liu K C, 2006

⁴ Refer to Annexure 2 for details

⁵ TKK ,Austrian regulator has justified asymmetric termination being the specific protection of investment of a new market entrant and the fact that new entrants have (non quantifiable) latecomer disadvantages

⁶ "The curse of the later entrants: the case of European mobile markets"- Benzoni L, 2005



cannot spread its investment over several years and must immediately offer the same QoS as an early entrant. Thus competition begins with a real “asymmetry of purse”: the first entrant made profits while it was a monopoly and could spread its investment over years, whereas the later entrant starts with a huge loss⁷. Financial constraints mean that the later entrant cannot compete on equal terms with the first entrant. In terms of market shares and profits, the gap between the competitors gets wider and wider and since they compete in a fixed-cost economy, the first entrant keeps on being more and more profitable while the later entrant has difficulties providing a return on its initial investment.

European Regulator’s Group (ERG, 2004) also believes that “*Without on going vigilance new entrants may never be able to develop a sufficient market presence to justify making long term investments and the long term vision of investment based competition will never emerge*”

Asymmetric charges promote services among underserved and poorer populations

Relatively underserved areas and poorer populations typically generate lower revenues from outbound calling and significantly lower overall ARPU. In India this is further exacerbated by free incoming calls for subscribers resulting in even fewer outbound calls. Termination charges are used strategically by several regulators to improve the economics of serving these ‘low-end’ subscribers.

EXHIBIT 3: Several international organizations recognize the importance of asymmetric interconnection charges to promote competition, investment and innovation

“ECTA is encouraged by AGCOM’s recent decision with regard to termination tariffs on OLOs [other licensed operators]’ networks and views both the level of tariff asymmetry and the five year period to be a pragmatic and realistic approach and one that will stimulate althets infrastructure investments and ultimately provide the consumer with more choice.”
ECTA, 2006

“Strategically, asymmetrical interconnection charges in countries such as South Africa, are not uniquely a necessary condition to ensure the commercial viability of USALs [underserved area licenses]. They are also a source of new service innovation and business opportunities, which helps to generate further revenue in underserved areas.”
World Bank, 2005

“As long as there is no effective competition as defined in the law on competition, it is important for regulation to be asymmetric, with regulatory obligations imposed on the operator which possesses significant market power in a given relevant market.”
ITU, 2004

“Asymmetric interconnection regulation is very common. The rationale for asymmetric regulation is to redress the consequences of market power. Asymmetric regulation does this by placing additional requirements on incumbent or dominant operators that might otherwise be able to prevent or deter competition.”
ITU, ICT Regulatory Toolkit

Source: World Bank, *Interconnection Challenges in a Converging Environment*, June 2005; ITU, *West African Common Market Protocol, Interconnection*, 2004; ITU website; ECTA website

Exhibit 3 quotes the World Bank, ECTA and ITU to this effect. In particular, South Africa introduced asymmetric termination charges to promote services in USALs (under serviced licensed areas). In effect, asymmetric charges support poorer populations, and its lack hurts them as well as those who serve them.

World Bank working paper No 27 on “Telecommunication’s Challenges in Developing Countries” has suggested asymmetric interconnection as an important mechanism that could help to close the “market efficiency gap” by enabling the market to work more efficiently, reaching further into rural-heartlands.

⁷ ComReg, Irish regulator has justified asymmetric regulation on basis of need to build economies of scale



With urban teledensity reaching saturation, any further growth would come from underserved and poorer sections. And most of these underserved populations are living in rural and semi rural areas where telecom networks are not present and are prohibitively expensive to roll out. Thus asymmetric termination can act as facilitator for reaching into rural markets and help in increasing access to telecommunications facilities in rural areas.

Current termination regime favors operators in 900 MHz

Late entrant into the telecommunications got spectrum in the 1800 MHz band. At this band they face higher coverage costs than the operators in 900 MHz. Current IUC regime doesn't support these operators in 1800 MHz even though they suffer from obvious cost disadvantages. Asymmetric termination charges are justified for transitory period in such cases where due to exogenous factors some operators are at a disadvantage.

Mobile networks are classic two camp structure having different costs. The existing networks have following advantages over the new networks:

Characteristic of existing networks	Implication on termination charges
<i>Large customer base</i>	<ul style="list-style-type: none"> Costs spread over a much higher base → <i>lower costs to terminate calls</i>
<i>Typically with 900MHz allocation in some circles with 1800MHz in some other circles</i> <i>CDMA operators on 850MHz</i>	<ul style="list-style-type: none"> Up to 2-2.5 times lesser sites needed for coverage at 900MHz over 1800MHz Additional need for indoor base stations (IBS) for 1800MHz <i>Implication → up to 2-2.5 times lower costs to terminate calls on existing networks compared to new networks</i>
<i>Typically 8 MHz per circle and even higher in few circles</i>	<ul style="list-style-type: none"> On a pan-India basis, per additional MHz of allocation beyond 6.2MHz implies a cumulative network saving over 3 years of Rs 1,200 crores per network <i>Implication → 15% lower mobile termination costs for existing network per MHz additional spectrum allocated beyond 6.2MHz</i>

From the above it is quite evident that the termination costs are different between new and old networks. Averaging of costs of different networks is not the correct method of costing. The cost orientation is not permitted under the TRA's own Regulation to decide the common termination charges for all networks.

The best option would be to follow the Bill and Keep Regime so that all operators and technologies could co-exist without affecting the competition or providing level benefit to the any operator. The Bill and Keep regime is competitive neutral and is best option for inter-operator compensation.



Q6. Should the existing practice of applying the same principles and methodology for calculation of fixed and mobile termination be continued? If not then what should be the methodology for fixed and mobile termination charges? Give full justification.

The issue is only relevant in case TRAI decides against the use of Bill and Keep Regime.

The current telecom scenario is adequately competitive and operators have fairly balanced traffic and therefore the Bill and Keep regime is the most optimum policy that should be adopted.

In case it is not possible to migrate to the Bill and Keep regime then TRAI should use the same methodology for fixed and wireless networks but ensure that the costs are current, the sunk costs are not included in the cost estimation.

Q7. Explain in detail the impact of the proposals being submitted by you for mobile and fixed termination charge on tariff and why?

The Bill and Keep or lower termination charge of about 10 paise will have no impact on the tariffs as operators have nearly balanced traffic. Though the inter-operator transaction on account of IUC runs into thousands of crores of rupees, but the net revenues available with few operators is negligible as compared to their total revenues.

We request the Authority to obtain the information from all the operators about net termination revenue or payout so as to understand the implication of any proposal. The Authority would notice that the amount with any operator is negligible compared to the total revenue to justify any change in the tariffs. AUSPI is of firm view that the competition will not allow any increase in tariffs even if Authority adopts Bill and Keep regime or reduces the termination charges to about 10 paise or below.

In the contrast, higher termination charges would continue to promote onnet traffic which is not competitively beneficial. The termination charge of even 5 paise to 20 paise is significant part of the retail tariff and will not have any beneficial impact of promoting the competition.

The termination charge for most Operators particularly new and smaller operators and second networks is an item of cost and not of revenue as they are net payer of termination charge. Higher termination charge reduces their margins and their competitive ability to match established and larger operators. To enhance competition it is imperative that termination charges are reduced so that no operator has an advantage of transferring undue costs to other operators. The Bill and keep arrangement will bring innumerable benefits for the consumer without having any significant impact on the existing operators. The TRAI can also study the impact of Bill and Keep on the EBITDA margins to establish our submissions. It is



our firm view that there will be negligible impact on the EBITDA margins in case TRAI shifts to the Bill and Keep arrangements.

Bill and Keep regime would lead to a regime that is competitively neutral and provide the maximum consumer welfare. The competition significantly enhances in case termination charges are lowered. The increased competition and reduced prices resulting from lower termination charges are likely to bring down the prevailing tariffs. Therefore, the Authority should focus on the development of competition rather than allowing a higher termination rate which gives ability to the service providers to shift their costs to other service providers.

Therefore the Bill and Keep arrangements or lower termination charge of about 10 paise will have no significant impact on operator's EBITDA margins or tariffs.

Q8. Are asymmetric domestic and international termination charges justified? If yes, then whether international termination charge should be fixed higher/lower than domestic, should be on reciprocal basis with other countries or left under forbearance? Give justifications.

No, the asymmetric Domestic and International termination charges are not justified. All termination charges should be on cost basis and not on the reciprocal basis.

The proposal would again lead to the situation of grey market which is not desirable and will be against the national security. This will also result in loss of revenue for the government and promoting incoming calls without monitoring.

Q9. What should be the ceiling of carriage charge for long distance calls?

- (i) Maintain at the same level**
- (ii) Increased/ decreased on the basis of current data**
- (iii) Higher ceiling for remote/ rural areas and one ceiling for rest**

Please give sufficient reasons with data in support of your answer.

The NLD carriage charge is only IUC component which has been reviewed since the inception of IUC Regulation. The Authority had fixed NLD carriage charges under IUC Regulations of October, 2003 which was based on the distance ranging from Rs.0.20 for 50 kms to Rs.1.10 per minute for distance of 500 kms and above. The NLD carriage charges were reviewed by TRAI in February 2006 and a new ceiling of Rs.0.65 per minute irrespective of the distance was specified.

The NLD carriage charge is comparatively competitive and recently reviewed and therefore we believe there is no need to review the carriage charges. Further the prevailing market



rates are below the ceiling which clearly establish that the **NLD carriage market is largely competitive and there is no need to review the present ceiling of Rs.0.65 per minute.**

The NLD network in the remote areas is still not available from large number of operators. The existing ceiling provides an incentive to rollout networks in the remote areas. However the revision may not help rollout and promotion of competition.

Q10. Which of the following options should be the TAX transit charges for intra SDCA transiting?

- (i) Maintained at the same level**
- (ii) Left to forbearance**
- (iii) Increase/ decrease on the basis of current data**

Please give sufficient reasons with data in support of your answer.

The carriage charges for a LDCA to SDCA call are mainly applicable for traffic terminating on BSNL networks. As per the TRAI's determination dated 8.1.2001, the cellular networks are required to handover intra-circle traffic for BSNL wire line network at Level II TAX. The handing over of calls at Level II TAX is at the instance of BSNL. The private cellular operators are not allowed to interconnect at the SDCA level and avoid this transit carriage charge. Although the Authority has considered it a special category of calls and prescribed separate transit carriage charge of 20p irrespective of distance but in the stated background it is unfair to charge any amount from the interconnecting service providers for carriage of calls from the Level II TAX to the SDCA. The Authority in these circumstances is duty bound to 'protect the interest of the consumers.

TDSAT has already held that the transit carriage charges are not payable for accessing BSNL's Cellone subscribers, wherever the MSCs of both BSNL's Cellone and private CMSOs are connected, to the same BSNL switch. This carriage portion should be considered as part of the termination and no charges should be payable for termination of calls.

As regards transit connectivity, it is submitted that the charges should be cost based. It should be specified as a separate category.

Q11. What should be the transit/ carriage charge from LDCA to SDCA?

- (a) No need to specify separately**
- (b) Under forbearance**
- (c) Increase/ decrease on the basis of current data**

Please give sufficient reasons with data in support of your answer.

We recommend that the transit carriage charge from LDCA to SDCA **should be reduced.**



The carriage charges for a LDCA to SDCA call are mainly applicable for traffic terminating on BSNL networks. As per the TRAI's determination dated 8.1.2001, the cellular networks are required to handover intra-circle traffic for BSNL wireline network at Level II TAX. The handing over of calls at Level II TAX is at the instance of BSNL. The private cellular operators are not allowed to interconnect at the SDCA level and avoid this transit carriage charge. Although the Authority has considered it a special category of calls and prescribed separate transit carriage charge of 20p irrespective of distance but in the stated background it is unfair to charge any amount from the interconnecting service providers for carriage of calls from the Level II TAX to the SDCA. The Authority in these circumstances is duty bound to protect the interest of the consumers.

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Q12 India is preparing for launch of 3G mobile services. Which of the following option would you consider best? Give reasons, practicality and method of implementation of your choice.

- (i) 3G termination charge same as 2G termination charge**
- (ii) Forbearance of 3G termination charge**
- (iii) Higher or lower 3G termination charge?**
- (iv) Should be considered at a later stage?**

The Authority should clarify the policy relating to termination on 3G networks before the spectrum auction. It will bring in clarity and help investors to bid appropriately.

The Bill and Keep regime is competitively and technologically neutral and will allow uniform compensation for all kind of networks. It will take care of most inter-operator disputes. The proposal will have bare minimum impact on existing operators in terms of their revenues. The Bill and Keep regime will promote competition and provide even new technologies like 3G, WiMax to effectively compete the existing technologies.

Q13. New developments like WiMax, HSPA, FMC, NGN and further advancements in access technologies are expected to complicate the termination scenario further. What should be done in the current review to take care of these future developments?

At this moment, it is very premature to comment IUC charges for NGN. This needs brainstorming among stakeholders about IUC calculation and settlement methodology. TRAI is requested to frame a separate consultation paper and guidelines to finalize architecture and IUC regime for NGN interconnectivity.

The Bill & keep is very safe mode to adopt at this stage. Basically, Bill & keep balances traffic flows on both directions and no termination payout from parties. In this case, logically the interconnect charges are not provided for free. Without payments for termination services the problem of arbitrage is avoided.