RCL/TRAI/LT/11-12/130 18th May, 2011

Dr. J. S. Sarma Chairman
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
Jawahar Lal Nehru Marg, New Delhi – 110 002

Subject : Comments on TRAI Consultation Paper on Review of Interconnection Usage Charges (IUC). Dear Sir,

Please find enclosed herewith our Comments on TRAI Consultation Paper on Review of Interconnection Usage Charges (IUC).

We hope the Authority would find our comments useful and take these into account while finalizing its views on this consultation paper.

Thanks & regards,

For Reliance Communications Ltd.

(Authorised Signatory)

Please Reply to:

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RCOM Response to the TRAI Consultation Paper on Interconnection Usage Charges

18 May 2011

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I. EXECUTIVE SUMMARY

1. The Indian telecom industry has experienced remarkable growth over the past decade. With approximately 850 million telephone connections as of March, 2011, the Indian telecommunications sector has grown to become the world's second largest market after China and fastest growing market in the world. One of the main factors driving and sustaining telecommunications growth is favourable policy and regulation.

2. TRAI has been the leading proponent for driving growth and enhancing consumer benefit. Over the past few months, the Authority has recommended a number of pro-growth, pro-customer and above all pro-competition policies. We believe that the TRAI determination on IUC has to be consistent with these policies. **Although the existing IUC regime in India has received admiration worldwide, including European Commission and ITU but to have sustained growth and continuous investment in advanced technologies, advancement of a progressive IUC regime is needed.**

3. **Termination charge is the single biggest constraint on retail pricing**. If termination charges are set at the correct level, these can drive competition, innovation and investment which will benefit consumers and the economy. **Under the current IUC regime, the cost for Mobile Termination is set at a level that exceeds the underlying cost of terminating a call by as much as 3 times**.

4. **RCOM strongly supports Bill & Keep (B&K) charging arrangement as it is the best interconnection regime**. We believe change to the B&K interconnection regime is essential to (i) remove the competition distortions resulting from the current system of high termination rates, and, (ii) align telecoms with the internet recognising that these technologies are increasingly direct competitors. The current system of high termination rates distorts competition and harms consumers. It is also very complex in an environment of multiple technologies (2G, 3G, 4G, Wi-Fi)

5. **Bill and Keep will remove the floor on pricing of mobile services which will result in higher take-up and will act as catalyst to the growth of mobile telephony in rural areas.** This will also result into substantial increase in Government revenue directly via various fees that operators pay and indirectly by bringing more and more services out of cash economy to digital economy. With e-commerce and mobile-banking becoming realty today, mobile telephony will increase the transparency in the economy and will reduce the cost imposed by black economy resulting in even higher growth of GDP in the country.
6. **The convergence of telecom and the internet also requires that termination charges should be removed**. As conventional telecom and internet services are becoming direct substitutes for each other, it will be unsustainable to have different interconnection arrangements for converged/competing services involving internet, media and telecom.

7. **The Bill and Keep regime would also avoid prolonged settlement procedures and eliminate billing disputes between operators.**

8. **Bill and Keep regime would enable the increase in the rural penetration through affordability in hinterland India where the growth is focused. In this context it is pertinent to note the Government of India scheme for promotion of e-Gov and NREGA related services with Aadhar as focal catalyst point.** Success of Aadhar rest on more and more people connected to digital world and having access to the internet based services. This is possible only through increased mobile penetration.

9. **An artificially inflated MTC dissuade operators from launching innovative new tariffs especially during the off-peak hours** as network utilization is negligible during night and billions of minutes go unutilized. In B&K scenarios, operators will get freedom to price the service differentially in peak and off-peak hours. And they will be able to maximize their ROI without any incremental investment while benefitting the customers at the same time by offering cheap pricing for off-peak hours. The same trend is currently observed while pricing of internet services where all the operators provide much higher speed and unlimited bandwidth during night hours while charging premium pricing during the day. This has been made possible only because there is no "Termination Charges" in IP environment. We need to replicate the same in mobile telephony to make better use of infrastructure assets and limited spectrum that we have today.

10. In case TRAI believes that the time is still not the ripe time for the B&K regime then it must be borne in mind that in India operators have very different cost profiles as they have been allocated spectrum in different bands, holding different quantum of spectrum and have entered at different points of time. **TRAI could address this imbalance through asymmetric MTC.** Despite clear evidence of asymmetric cost profiles for different operators if the TRAI believes that it should continue with the symmetric MTC then MTC should be fixed on the basis on forward-looking LRIC for an efficient operator. **The MTC based on 3 year LRIC model for an efficient operator as given below suggests the average per minute MTC should be 6 paise.**

	Unit	FY 2011	FY 2012	FY 2013
Cost based MTC using LRIC	INR / min	**0.07**	**0.06**	**0.05**

MTC based on average 3 year forward LRIC = 6 paise

11. The cost plus or cost based MTC regime is totally against recent philosophy of market led pricing (as is being followed in spectrum auctions) and other regulation (e.g. tariffs determined by market forces rather than a cost plus regime; like we see in the fertilizer sector). A cost-based regime protects inefficiency by practically guaranteeing a rate of return on costs and investments. In addition, cost-plus regimes are extremely complex to administer and result in significant ambiguity – whose costs, for which technology, for what network utilization etc. become exceeding difficult questions to answer**. In effect,**

a cost-based MTC is a cross subsidy of incumbent networks paid for by new entrant operators. This in turn means there is an equivalent implicit tax component for exclusivity to incumbent operators. Therefore, TRAI should not adopt cost plus methodology to determine MTC.

12. A dynamic MTC regime (6 paise or Zero) will help the industry enhance revenues and profitability. The operators will benefit immensely because of higher mobile penetration as well as increase in usage by subscribers. Additionally, this will make the market more competitive and enable operators to provide innovative services to consumers.

13. A dynamic MTC regime is being opposed by incumbent operators as they fear it will weaken their on-net offerings and reduce the effectiveness of potential collusion between them. We would like to point out that despite Reliance being a leading operator we are requesting a pro-growth dynamic IUC regime because we believe that this will push further growth which will help us recover any notional loss. Thus, some operators may present decoys as their attempt to prevent a drastic change in MTC. The TRAI needs to guard against these submissions and continue to follow the policies to promote competition and consumer interest.

14. **We are certain that TRAI will be wary of such decoy arguments as above that may be presented.** Decoy arguments will have been deemed to have succeeded if TRAI takes half measures and reduces MTCs to only 10 paise or higher.

15. TRAI should mandate B&K regime for SMS, MMS, and other VAS services. **Although there is no cost basis for charging for commercial SMS but we are suggesting a termination charge for A2P SMSs purely from a customer benefit to prevent deluge of unwarranted commercial SMS's.**

16. The Termination charges for ILD and domestic calls should be same as same resources are used. However, we acknowledge the need to keep incoming international call at a higher rate by introducing a new IUC component of carriage for international leg of incoming ILD call (from international Gateway to India Gate Way). **This carriage charge of ILD calls may be fixed at 20 paise per minute.**

17. **TRAI should intervene in the matter of International Settlement rates when foreign operators abuse the monopoly power to charge higher settlement rates. The basis of settlement rates should be on reciprocal treatment to the Indian operators.**

18. TRAI should also review Carriage Charges, Transit Charges (both intra SDCA and LDCA to SDCA), and Port Charges along with MTC. **TRAI may consider to reduce the carriage charge to 40p** per minute. Transit charge, was fixed at Rs 0.15 /min, and since then the costs have reduced significantly. Even though the cost of intra SDCA is much lower than cost of transit for LDCA to SDCA, charges are set almost the same by BSNL since this segment is not competitive. Therefore we recommend that **transit charges should be reduced significantly 1p/2p** and the **TRAI should introduce competition in this segment by implementing the license amendment which permits NLDOs to carry intra-circle**

traffic. . The permission to carry call through any NLDO will also reduce carriage charges perhaps even to a level of zero paise.

19. Port charges are paid by private operators to BSNL based on number of ports provided at POI. Port charges between private operators are already zero. The port charges should be based on out-going traffic so that these are consistent with the costing principle for interconnection usage charges. Therefore, TRAI should urgently review port charges along with interconnect usage charges

II. INTRODUCTION

1. THE INDIAN TELECOM SECTOR HAS WITNESSED TREMENDOUS GROWTH DUE TO A PROGRESSIVE REGULATORY REGIME

Key Indicators of telecom sector **- changes from 1995 to 2010**

- Number of operators have increased from 2 to 12-14 during the period 1995 to 2010
- Outgoing local tariff decreased by 98% from 1995 to 2010
- Local incoming tariff reduced by 100% from 1995 to 2010
- STD tariff reduced by 97% during 1995 to 2010
- ISD tariff reduced by 73% from the year 2001 to the year 2010
- SMS rates reduced by 90% from the year 1995 to the year 2010
- Roaming rates dropped 87% from 2001 to 2010
- Tele density increased from less than 1% to 67.67%
- Revenues to the exchequer increased by 400% between 2001 and 2010
- Average Revenue per User dropped by 75% between 2001 to 2010
- Percentage of Subscriber Market Share on CDMA technology went down from 25% in 2004 to approximately 10% in 2010

TABLE 1: CHART ON KEY HIGHLIGHTS OF TELECOM SECTOR

Sr. No.	Year	1995	1999	2001	2004	2010
	Particulars					
1.	Number of operators	2	2	4	6	12-14
2.	% Subscriber Share of GSM/CDMA	0	0	0	25	10
3.	Local outgoing tariff (Rs/ min)	16.8	12.00	5.0	2.0	0.4
4.	Percentage reduction in local outgoing tariff in 2010 as compared to prevailing tariff	98	97	92	80	0
5.	Incoming local tariff (Rs /min)	8.40	2.70	1.20	Nil	Nil
6.	STD tariff (Rs/ min)	17	13	4.8	3.6	0.5
7.	International tariff	NA	NA	24	18	6.4
8.	ARPU	NA	NA	NA	457	**114**
9.	SMS rates (Per SMS)					
9.1	SMS rate -Local	5	3	2	1	0.5
9.2	SMS Rate- National	5	3	3	2	0.5
9.3	SMS Rate- International	NA	NA	5	3	5
10	**Roaming tariff (Rs/ min)**					
10.1	Local	NA	NA	3.99	3.99	0.5
10.2	STD	NA	NA	4.99	4.99	0.5
10.3	Incoming	NA	NA	3.99	3.99	0.5
10.4	Roaming Rental(In Rs)	NA	NA	100	75	NIL
11	Tele Density (%)	<1	2.33	N/A	7.02	67.67
12	Estimated Revenue to the exchequer(Rs in Cr)	N/A	N/A	5000	N/A	25000

2. HIGH TERMINATION CHARGES NOT CONSISTENT WITH TRAI OBJECTIVES

I. A high termination charge regime of 20 p/min or even 15p/min will not be in the consumer interest and growth of the telecom sector. High termination charges impact competition and consumer interest in the following manner:

- **Provides incentives to strategic pricing by large operators to the detriment of small operators (on-net/ off-net price discrimination);**
- **Leads to significant financial transfers from small to large operators;**
- **Distorts convergence between telecommunications and the internet;**
- **Delays the introduction of new services and distort tariff innovation; and**
- **Keeps retail prices high.**

3. HIGH DIFFERENCES BETWEEN ON-NET AND OFF-NET TARIFFS HURTS CONSUMER INTERESTS

II. **The On-net/ off-net price discrimination deters customers of large networks from making calls to a small network, thus significantly reducing the value of small network to potential subscribers.** The On-net/ off-net discrimination also make large networks more attractive to subscribers. When on-net calls are priced below off-net calls, subscribers to large networks experience lower average call charges than subscribers to smaller networks, since more of their calls are made on-net. With symmetric Mobile Termination Charges this results in a transfer of profit from small to large operators. Therefore it is imminent that in the CPP regime **there should be asymmetric charges based on actual cost of networks.** If asymmetric termination charges are not possible, a Bill & Keep regime or lower termination charges (6 paise/minute) would be more competitive, neutral and beneficial for consumers.

III. Lower on-net calls imply a huge margin between termination costs and termination MTC rate. In on-net calls, there is double usage of network for origination as well as termination but it is evident from the **Table 2** below that **retail on-net tariffs is much below to the extent of 1/5th of the off-net tariffs.** This also makes a very strong case for significant reduction of termination charge

TABLE 2

Details	Vodafone			Airtel		
Local outgoing (Rs / min)	Best +444	Talk More 250	Talk More 149	599 Mega Saver	New 249 PPS	Utsav 149
On-net	0.25	0.15	0.3	0.3	0.5	0.3
Off-net	0.4	0.75	0.75	0.49	1	0.5
Off-net call expensive by	160%	500%	250%	163%	200%	167%

IV. It may be seen from the above **Table 2**, that operators with a large market share offer expensive rates for calls to other operators (off-net calls) and large discounts on on-net calls. **The smaller competing operators therefore have to position their off-net rates against the large operator's on-net rate, since a significant proportion of their customer calls are off-net to the larger operator. They can also hardly seek to have higher off-net rates.** As a result, smaller operators have difficulty in competing. Large operators maintain on-net call rates very close to

the termination charges. There are significant regulatory issues when on-net discounts significantly impact competition - especially when they are used by operators with much larger market shares than their competitors. It may seen from the Fig 1 below that the margin available with large operators are significant by keeping lower on-net tariffs and at the same time it is very difficult for the smaller operator to get any significant margins, as off-net calls are charges at lower rates.

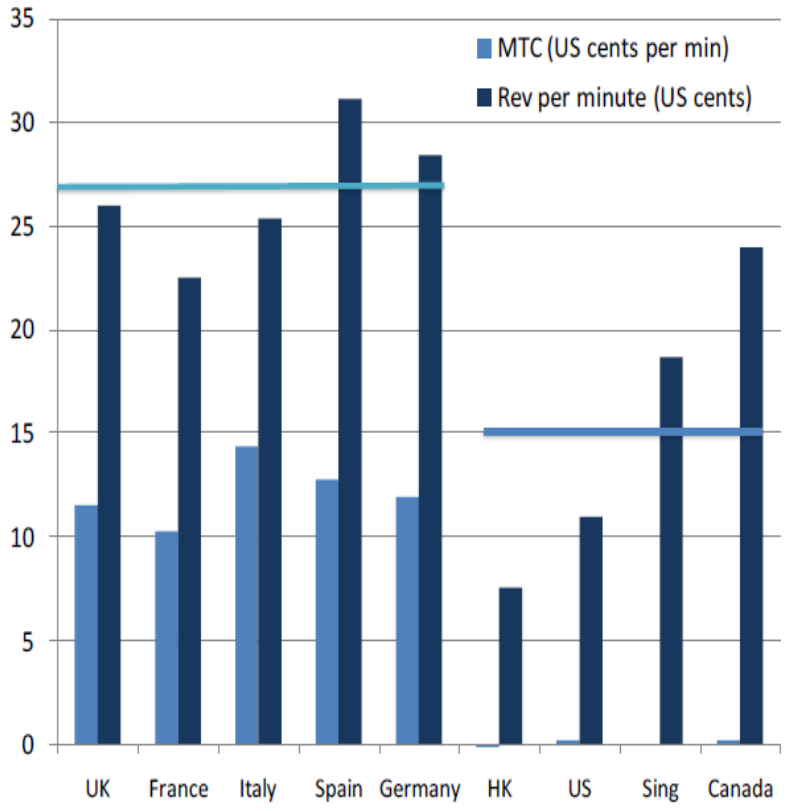
V. **The new subscriber selects the leading operator in order to call and be called at cheaper rates. Such an effect is a strong constraint on the development of competition.** In this situation it is imminent to **significantly bring down bring down termination charges to 6 p/minute or move to the Bill & Keep regime.**

4. HIGH TERMINATION CHARGES KEEP RETAIL PRICES ARTIFICIALLY HIGH

VI. **Prices tend to be significantly higher in countries where there are high MTCs than in countries where MTCs are lower or close to zero.** It is not possible to provide large bundle of off-net minutes to subscriber with higher termination charges as there is a cost risk especially for new operators in offering large bundles of minutes. This "cost risk" can be eliminated by Bill & Keep or significantly reducing the termination charges to the real cost of 6 paise per minute.

VII. Old established operators can offer such plans but they have no incentive to reduce prices as they being in leading position. The Figure 2 shows comparison of retail prices in countries with higher MTC with the retail prices in countries with zero MTC.

FIGURE 1



Source: PLUM Submission to the TRAI on IUC

VIII. The most popular broadband plans are based on flat charges or large bundle of browsing data. The same plans are also expected for voice services but due to

higher termination charges currently prevalent tend to set a “floor” on call prices and it is not possible for a service provider to prepare tariff plans based on large bucket of minutes. The removal of a floor to prices i.e. significant lowering of termination charges or moving to the Bill & Keep would help to offer large bundle of minutes would result in fall in prices. This will also lead to a much higher average usage. Comparisons with countries that have low or no mobile termination charges show that those countries have lower average retail prices and higher average usage of mobile phones. **The Bill & Keep or lower termination significantly benefit consumers as prices are much lower and usage is significantly higher.**

5. HIGH TERMINATION CHARGES DISTORT CONVERGENCE BETWEEN TELECOMMUNICATIONS AND INTERNET

IX. **As switched telephony converges with the internet, the current termination rate system will become unsustainable**. It is inevitable that the switched telephony adopts the internet charging principles of peering and transit. The two different charging regimes cannot exist together as these are direct substitutes and will be competing in the common market place. **The per minute call charges that are a consequence of current Interconnection usage charging will be undermined by VoIP, which has no incremental cost for the consumer.**

X. One may argue that VoIP has not provided an effective way to provide sustainable alternative to switched calls as those are not interconnected with the PSTN. However, Skype, the largest consumer VoIP provider has launched an iPhone and android based "app" that works on 3G which can be downloaded and used independently of the Interconnection (Fig 3). This is therefore the first time that a customer would be able to make a VoIP call through mobile phones to another mobile phone even without direct interconnectivity. At this stage, it is a new development but since 3G has already been launched, this application and other alternative services like Instant Messaging would be used more and more.

FIGURE 2

XI. Another interesting competitive alternative to mobile telephony that is emerging is the use of WiFi in conjunction with VoIP. New handsets have recently emerged that operate as VoIP phones when WiFi is available, but as conventional mobile phones at all other times. Therefore, with convergence happening there is need to

maintain a level playing field by subjecting these technologies to same regulatory treatment.

XII. Aligning the telecoms and internet interconnection regimes is essential to maintain neutrality telecoms operators and internet services. Lower termination charges and eventually **Bill & Keep regime would facilitative convergence and more choice for consumer to use various platforms for making calls.**

6. BILL & KEEP OR LOWER TERMINATION CHARGES WOULD ENHANCE INNOVATION

XIII. **The Bill & Keep or Regime with significantly lower termination charges of 6 paise/minute would enhance innovation in new services like Instant Messaging.** Currently, after the introduction of 3G services and high-speed mobile internet, Instant Messaging can become very popular. This would only be possible **if call termination charges are lower and operators have incentive to introduce new services by bypassing lucrative termination market**. For these reasons, consumers will benefit from a move to Bill & Keep regime or significantly lower termination charges.

a) TRAI should ensure India is at the forefront of mobile and telecom innovation.

b) Voice and Data convergence is the way forward – investments and product launched by both large (Google talk, Microsoft) and small companies are clear drivers to this trend.

c) A low MTC regime will enable innovation in India and lead to much faster take up of high speed wireless services.

d) TRAI has the unique position of using the IUC regime to drive this change.

7. BILL & KEEP OR LOWER TERMINATION CHARGES ENSURE OPERATORS RECOVER COSTS FROM THEIR OPERATIONS AND NOT FROM COMPETITORS

XIV. In the CPP regimes, with higher termination charges, established operators are able to transfer their costs to the competitors in form of termination charges. With Bill & Keep regime or in CPP regimes with significantly lower termination charges, **large established operators would have to cover their costs from their own customers and from the competitors. If costs are to be recovered from own customers in the competitive market than there is little incentive to charge excessive prices** to their customers, because they may risk losing them. Thus lower termination charges or Bill & Keep is a competition neutral regime which does not provide competitive advantage to large established operators. **The new Bill & Keep regime or by reducing MTC to 6 p/min regime, TRAI can enhance competition, consumer welfare and overall economic benefit to the society and the nation**.

8. VIEWS OF WORLD'S LARGEST WIRELESS OPERATORS/REGULATORS ON BILL & KEEP

AT&T Wireless[1]

AT&T Wireless Services, Inc. (.AWS.) fully supports the Commission's proposal in the Notice of Proposed Rulemaking (.NPRM.) to adopt a system of Bill & Keep for all intercarrier compensation. AWS believes that a unified Bill & Keep compensation scheme for all types of traffic would not only be the most efficient and pro-competitive method of compensation, but also the most technologically and competitively neutral.

Verizon Wireless[2]

With the necessary caveat that the Commission must select a proper form of Bill & Keep to optimize its benefits, bill-and-keep will serve the public interest for a variety of reasons. Under the Commission's current rules, the negotiation and/or arbitration of interconnection arrangements is a typically lengthy and costly process. Even after parties sign a contract, billing and dispute resolution often consume even more resources. In addition, if the Commission retains the Calling Party Network Pays (.CPNP.) regime, all carriers will have to continue to develop mechanisms to measure traffic, which are expensive and difficult to build and maintain. Bill-and-keep will relieve that need for substantial investment by CMRS carriers and LECs in billing and recording systems.

Bill-and-keep will therefore minimize administrative inefficiencies. Because bill-and-keep removes inefficiencies, it will promote competition. Bill & Keep will make CMRS even more competitive because prices will solely reflect each carriers own costs without reference to the additional costs imposed by a host of different carriers or the vagaries of litigation. Accordingly, under bill-and-keep, operational efficiencies, quality of service, and customer service, and not regulatory policies or inter-carrier payments, will ultimately decide the winners and losers in the marketplace.

[1] Comments Of AT&T Wireless Services , INC. ON Notice of Proposed Rulemaking on Developing a Unified Inter-carrier Compensation Regime.
http://fjallfoss.fcc.gov/ecfs/document/view?id=6512763276

[2] Comments Of Verizon Wireless . ON Notice of Proposed Rulemaking on Developing a Unified Inter-carrier Compensation Regime.
http://fjallfoss.fcc.gov/ecfs/document/view?id=6512763257

Sprint Corporation[3]

Therefore, Sprint supports the prompt implementation of Bill & Keep as regards local traffic (both CMRS and wireline) and interconnected local calls to ISPs.

FCC Chairman Michael K. Powell[4]

In my view, a regime built upon "bill-and-keep" proposals is the solution that is most faithful to principles of cost causation. As the staff report demonstrates, a Bill & Keep regime encourages the development of competition by rewarding carriers based on their ability to serve customers efficiently rather than their ability to exploit regulatory arbitrage opportunities. It sends rational pricing signals to the market because consumers are equipped with information that allows them to avoid higher cost networks.

European Regulator Group (EC)[5]

Therefore, Bill & Keep is more promising than CPNP as a regulatory regime for termination for the long term and based on national circumstances (including legal issues) NRAs could set a glide path to Bill & Keep within the regulatory period related to the next market analysis they carry out for voice termination.

Therefore, Bill & Keep regime should be the TRAI's final goal for IUC policy. The Bill & Keep regime would be in the interest of consumer, increase competition and address a number of inter-operator disputes.

[3] Comments of Sprint Corp on Notice of Proposed Rulemaking on Developing a Unified Inter-carrier Compensation Regime
http://fjallfoss.fcc.gov/ecfs/document/view?id=6512763245

[4] Statement of Chairman Michael K Powell on *Developing a Unified Intercarrier Compensation Regime*
http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-33A1.pdf

[5] ERG DRAFT Common Position on Next Generation Networks Future Charging Mechanisms / Long Term Termination Issues

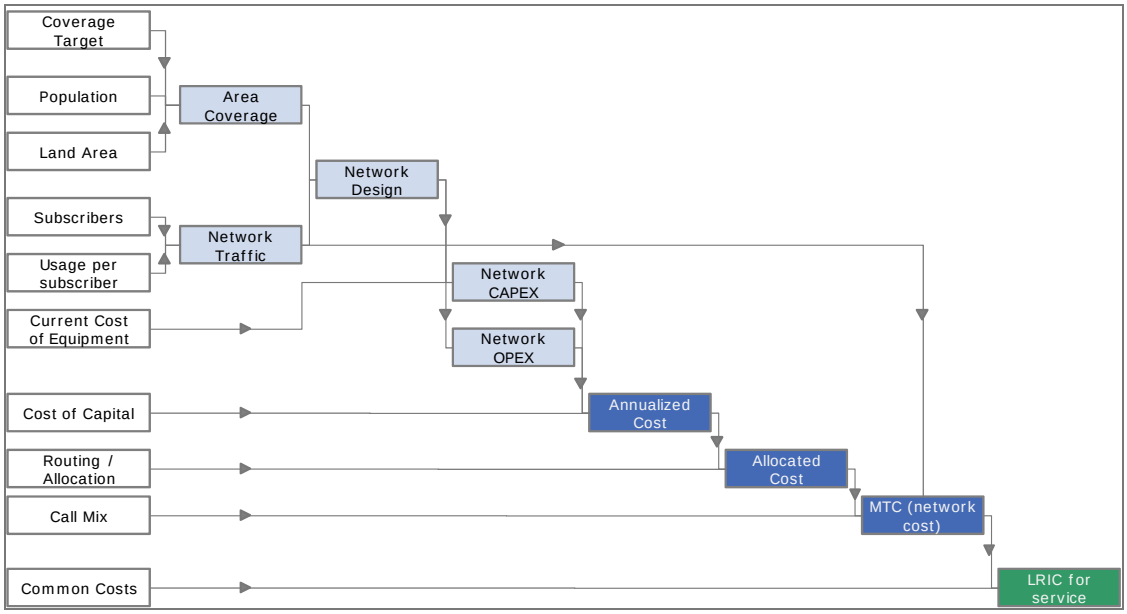
III. COST BASED LRIC SUGGESTS A MAXIMUM MTC OF 6 PAISE/MINUTE

The most widely used measure of cost of termination for Regulatory purposes is the long-run average incremental cost (known as LRAIC or LRIC). LRIC is used because it best resembles the actual economic cost that an operator incurs in providing termination in a competitive market and allows the operator to recover the full cost of its network.

A. MODEL STRUCTURE

The following figure illustrates the high level approach used to calculate MTC using the LRIC approach:

FIGURE 3



B. NETWORK DESIGN

The model structure is based around established GSM network design algorithms. These are, for the most part, quite standardized and can be used with reasonable degree of confidence in the results. An engineering model is used to calculate the networks that would be required to support the given level of demand in India, given the technology chosen.

C. SERVICES

The purpose of the FLLRIC model is to produce the costs of different services that are provided on a mobile network, specifically voice and SMS termination. Costs are allocated onto services on the principle of 'cost-causality', meaning that a given cost is allocated onto services to the extent that each service causes that cost to be incurred.

D. DEPRECIATION

The FL-LRIC results presented in this report are calculated using economic depreciation to annualize capital expenditure. This is a more complex method than conventional straight-line accounting depreciation, based on historical cost. Economic depreciation is favoured for Regulatory purposes since it more accurately matches the costs of assets to the revenues they support. It is worth pointing out that both types of depreciation recover exactly the same costs in present value terms, the only difference being in the timing of that cost recovery.

E. DIRECTLY ALLOCATED COST ITEMS

The FLLRIC model considers a set of cost items which can be directly allocated to the list of services under consideration. These are:

a. Transmission
    i. BTS
    ii. BSC
    iii. Fibre links and Microwave
b. Core Network
    i. MSC
    ii. GMSC
    iii. HLR
c. Passive Network
    i. GBT
    ii. RTT
d. Passive Network OPEX
e. Active Network OPEX

F. COST OF CAPITAL

The FLLRIC model uses Capital Asset Pricing Model (CAPM) to compute the Weighted Average Cost of Capital (WACC) for the operator. A pre-tax WACC of 13% has been used in the LRIC model.

G. ALLOCATED SPECTRUM:

The old operators have been allotted spectrum based on the subscriber-linked criteria. The TRAI has prescribed spectrum limits for operators which have been used in the LRIC model. Although TRAI has permitted 10 MHz spectrum limit for Delhi and Mumbai but in our LRIC mode a maximum spectrum of 8 MHz has been used as we believe that is the maximum spectrum required in these new area. The assumption with regard to spectrum:

TABLE 3

Metro						
	Chennai	8.0	8.0	8.0	8.0	8.0
	Delhi	8.0	8.0	8.0	8.0	8.0
	Kolkata	8.0	8.0	8.0	8.0	8.0
	Mumbai	8.0	8.0	8.0	8.0	8.0
Class A						
	Andhra Pradesh	8.0	8.0	8.0	8.0	8.0
	Gujarat	8.0	8.0	8.0	8.0	8.0
	Karnataka	8.0	8.0	8.0	8.0	8.0
	Maharashtra	8.0	8.0	8.0	8.0	8.0
	Tamil Nadu	8.0	8.0	8.0	8.0	8.0
Class B						
	Haryana	6.2	6.2	6.2	6.2	6.2
	Kerala	6.2	6.2	6.2	6.2	6.2
	Madhya Pradesh	6.2	6.2	6.2	6.2	6.2
	Punjab	6.2	6.2	6.2	6.2	6.2
	Rajasthan	6.2	6.2	6.2	6.2	6.2
	Uttar Pradesh (East)	6.2	6.2	6.2	6.2	6.2
	Uttar Pradesh (West)	6.2	6.2	6.2	6.2	6.2
	West Bengal	6.2	6.2	6.2	6.2	6.2
Class C						
	Assam	6.2	6.2	6.2	6.2	6.2
	Bihar	6.2	6.2	6.2	6.2	6.2
	Himachal Pradesh	6.2	6.2	6.2	6.2	6.2
	Jammu and Kashmir	6.2	6.2	6.2	6.2	6.2
	North East	6.2	6.2	6.2	6.2	6.2
	Orissa	6.2	6.2	6.2	6.2	6.2

H. PASSIVE NETWORK SHARING:

Intense competition has made infrastructure sharing a necessity rather than advantage for an operator. We have assumed that efficient operators are renting towers to set up their base stations and provide coverage. We have assumed that an efficient existing player will also be using shared infrastructure for towers and transmissions.

In our model we have taken fair market share and efficient call-mix of on-net voice and off-net calls which mimics the efficient established operators.

I. MODEL RESULTS

TABLE 4

LRIC (INR / min)	FY 2011	FY 2012	FY 2013
All India	**0.07**	**0.06**	**0.05**
Metro	**0.03**	**0.03**	**0.02**
Chennai	0.03	0.03	0.02
Delhi	0.03	0.03	0.02
Kolkata	0.02	0.02	0.02
Mumbai	0.03	0.03	0.02
Class A	**0.07**	**0.06**	**0.05**
Andhra Pradesh	0.07	0.06	0.06
Gujarat	0.07	0.06	0.06
Karnataka	0.08	0.06	0.06
Maharashtra	0.07	0.06	0.06
Tamil Nadu	0.04	0.04	0.03
Class B	**0.07**	**0.06**	**0.06**
Haryana	0.04	0.04	0.04
Kerala	0.04	0.04	0.04
Madhya Pradesh	0.17	0.14	0.13
Punjab	0.04	0.04	0.04
Rajasthan	0.13	0.11	0.10
Uttar Pradesh (East)	0.04	0.04	0.04
Uttar Pradesh (West)	0.05	0.04	0.04
West Bengal	0.04	0.04	0.04
Class C	**0.07**	**0.06**	**0.05**
Assam	0.06	0.05	0.05
Bihar	0.04	0.04	0.04
Himachal Pradesh	0.07	0.06	0.06
Jammu and Kashmir	0.34	0.30	0.30
North East	0.22	0.19	0.17
Orissa	0.08	0.06	0.06

Conclusion:
On the basis of LRIC, the maximum MTC for mobile termination should be 6 paise / minute (average of 3 years).

IV. RESPONSE TO TRAI QUESTIONNAIRE:

RCOM's specific comments on issues raised in the consultation paper are given below:

1. Do you agree that the IUC regime determined through this consultative process should be applicable for 3 years? If not please indicate your preferred time period with justification.

a. TRAI should review IUC on a regular basis to take into account changes in cost, technology, market scenario. Changes in IUC can facilitate convergence, innovations, enhance competition etc. If Interconnection charges are above cost then it impacts competition and TRAI must review charges at appropriate time concomitantly to this proposal, it must also be taken into account that the stability for the industry is also required by allowing a significant passage of play to operators between any policy amendments. This would lend stability to the industry and allow the operators to take a longer term view while making any capital investment decisions.

b. **In view of the above it is suggested that the review period may be fixed at two years.** However, whenever there are **substantial reason** on account of changes in technology or developments leading to sharp increase or decrease in cost, **TRAI should be free to review IUC regime**. No party should be in a position to take a legal plea that IUC cannot be reviewed even if it is needed in the interest of healthy growth of telecommunications.

2. Keeping in view the time period indicated by you in question 1, which of the following approaches would be most appropriate for the Indian telecom sector?

(a) Cost oriented or cost based;
(b) Bill & Keep;

Please provide justification in support of your answer. In case you feel that the approach should vary according to service, please explain why?

a. **We recommend Bill & Keep regime for India** as this regime is would maximize economic welfare through lower prices and higher calling volumes per subscriber than with existing CPP arrangements. **It is expected to stimulate mobile take up especially among the rural and poorer segments of Indian society as prices would be more affordable**. Bill & Keep also eliminates the risks of legal challenge since termination charges will be set to zero. It will also provide a much simpler and more future proofed form of interconnect than the existing regime and will make interconnect charging much simpler, and will remove barriers to developments.

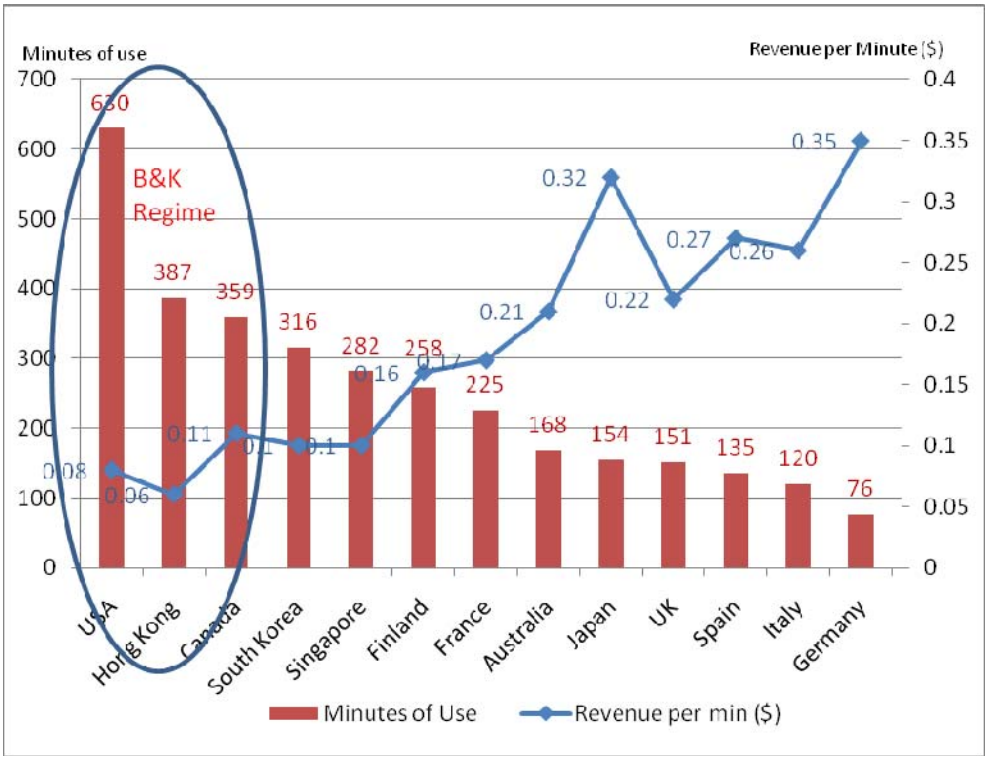
b. The justification and advantages of Bill & Keep regime is given below:

(i) *Bill & Keep regime will remove the floor on the retail prices and will reduce retail prices*

1. Prices tend to be significantly higher in countries where there are high MTCs than in countries where MTCs are close to zero. The usage on the other hand is higher in countries with Bill & Keep arrangements, The figure below shows the main results for the variables usage and price; the difference in output between the US and Europe is considerable. In US the usage is about three times higher than the European average indicating a welfare gain for consumers. Singapore and Hong Kong have lower usage than the US but still more than twice the European average.

2. Besides consumer benefit, Bill & Keep regime will also enhance competition. New operators will be able to compete on prices when floor in termination charge is removed.

Fig 5



(ii) *By moving cost-recovery to retail market, Bill & Keep enhances competition*

1. Bill & Keep means that operators have to cover all the costs from their own subscribers. Old operators would not be able to transfer their costs to competitors. If a service provider has to bill termination cost to its own end-**users in a competitive market he has no incentive to charge excessive prices** to his customers, because he may risk losing them.

(iii) *Removal of competition distortions*

1. The termination charges of CPP regime especially if these are more than costs distorts competition and harms consumers. In previous submissions to the TRAI, we had submitted that the current system of termination rates which are very high when compared to the retail prices in Europe distorts competition. In particular, high termination rates:

    - **provides incentives to strategic and inefficient pricing at the retail level by large operators to the detriment of small operators (on-net/ off-net price discrimination);**
    - **leads to significant financial transfers from small to large operators or costs from larger operators to smaller operators;**
    - **distorts competition between large and small mobile operators;**
    - **delays the introduction of new services and distort tariff innovation;**
    - **distorts convergence between telecommunications and the internet;**
    - **keeps retail prices high.**
    - **Does not permit introduction of innovative tariffs based on flat rates.**

2. **High termination charges prevent the emergence of flat rate access pricing.** The existence of high per minute termination charges means that there is a cost involved in offering flat rate access tariffs. This cost is eliminated by Bill & Keep, thus making it easier for operators to offer flat rate access tariffs and large bundles of minutes.

3. **Termination charges tend to set a "floor" on call prices.** The removal of a floor to prices and the ability to offer flat rate tariffs mean that average prices for making calls are likely to fall following a move to Bill & Keep. This will **lead to higher average usage.** Comparisons with countries that have low or no termination charges show that those countries have lower average retail prices and higher average usage of mobile phones. The Bill & Keep in Hong Kong is that it has resulted in low retail prices for mobile services and high usage.

(iv) *Bill & Keep will remove competition advantages*

1. Mobile network operators are able to offer low prices for on-net at times even lower can than the termination charges. This occurs even though an on-net call makes twice as much use of network facilities as a terminating call, providing a strong indicator that termination rates are currently greatly in excess of the true cost of completing calls.

2. **This makes it difficult for new mobile operators to compete and gain scale. This will remain a problem as long as there is a material difference between the regulated price for termination and the true cost of delivering a call.** It is therefore imperative that regulated prices and resource costs are brought into line. **Bill & Keep removes off-net versus on-net advantage for old operators and enhances competition.**

(v) With convergence, Current Termination Charges are Not Sustainable

1. **Current level of Termination charges for voice calls will not sustainable as with these calls will soon have to compete with direct substitutes from internet services which do not have corresponding termination charges**. Customers are likely to migrate to the service with the lower prices when services being perfectly substitutable.

2. Telecom services such as voice and SMS typically have incremental charges. With convergence they will compete directly with substitutes like VoIP and instant messaging. **Those services are incrementally free, and if in these scenarios telecoms operators continue to maintain incremental charges for voice and SMS, then they will face a migration of their traffic and revenues to the incrementally free internet substitutes.**

3. **The only way to prevent this is to provide level playing field to the telecom services by shifting to the Bill & Keep regime.**

(vi) Bill & Keep does not impact prices and profit.

1. The current CPP regime distorts competition in favour of large operators by enabling them to sustain on-net/ off-net price differentials that harm smaller operators and lead to traffic imbalances. Large operators offer on-net calls at rates which are much cheaper compared to the off-net call rates. Even if new operators offer matching tariffs on on-net calls but such products are unlikely to appeal consumers, as these operators have significantly smaller subscriber base. Moving from

high termination rates to Bill & Keep would remove a barrier to entry and help expansion for small and late entrant operators. Moving to Bill & Keep would, therefore, enable the new entrants to compete better against large incumbent operators.

2. Termination charges are wholesale payments between operators. Reducing or eliminating termination payments does not imply an equivalent impact on profit because there is a loss in revenue but also a reduction in costs. Overall, within the whole telecommunications system, net termination payments sum to zero. Smaller, new entrant operators typically suffer a traffic imbalance and, therefore, will be net beneficiaries from Bill & Keep. However, the main benefit is the removal of competition distortions, which will mean that small operators can compete with the large incumbents on an equal footing.

(vii) Regulatory certainty through Bill & Keep

1. Bill & Keep will reduce regulatory costs for all parties and reduce regulatory uncertainty, by removing regulatory intervention imposed around future costs and revenues. Although the TRAI had been consistently following the same methodology to determine termination charges but frequent challenge from old large mobile operators in various courts of law and huge exercise followed by TRAI in every consultation to re-determine the appropriate costing methodologies give rise to uncertainty. Bill & Keep goes further to reduce uncertainty by removing debates about the cost of termination altogether.

2. For all of these reasons, consumers will benefit from a move to Bill & Keep and overall economic welfare will be enhanced. We suggest that the TRAI should prescribe zero termination rates i.e. Bill & Keep as the interconnection arrangement. Bill & Keep satisfies the recent economic studies which, as noted above, have concluded that welfare maximizing termination rates are likely to be below cost. It also removes the competition distortions between mobile operators and between fixed and mobile operators.

(viii) India is best placed to embrace Bill & Keep

1. ITU GSR 2007, Discussion Paper on NGN Interconnection and Access prepared it has been brought out that for India it would be much easier transition from the CPP regime to the Bill & Keep R – 6. The relevant extracts from the paper are reproduced below for reference:

"*In the nearer term, CPNP systems with much lower termination fees than those typical today might represent a promising interim step.* ***Experience in***

India suggests that CPNP arrangements with mobile termination fees less than 0.01 USD per minute can be compatible with both high usage and rapid adoption. By reducing the spread between CPNP and Bill & Keep, the regulator also greatly reduces the pain associated with a subsequent transition to Bill & Keep arrangements should such a transition prove necessary.*"(Page 53)*

(ix) Internationally Regulators are supporting B&K

1. The European Parliament has established the Body of European Regulators for Electronic Communications (BEREC). This body comprises of all National Regulatory Authorities of EU and exchange expertise and best practice and gave opinions on the functioning of the telecoms market. This body has also initiated a consultation process to decide a common position on "Next Generation Networks Future Changing Mechanism/Long Term Termination Issues". The paper concludes that Bill & Keep is an alternative to CPP regime in the converged regimes. The relevant portion of the paper is reproduced below:

"Therefore, Bill & Keep is more promising than CPNP as a regulatory regime for termination for the long term and based on national circumstances (including legal issues) NRAs could set a glide path to Bill & Keep within the regulatory period related to the next market analysis they carry out for voice termination……."

c. The benefits of B&K regime and CPP have been compared in the following **Table 5** which clearly establishes the benefit of Bill & Keep over CPP regime.

TABLE 5

Issue	Implication	Solved by CPP	Solved by Bill & Keep
Ability to influence tariff reduction	• Cost based MTC will always present a floor to tariffs • Bill & Keep offers greatest flexibility on tariffs	No	Yes
Complexity and legal issues	• Cost based MTC is subject to criticism of data ambiguity and subjectivity • Bill & Keep has no such limitation. No legal disputes and Lengthy debates on cost consideration	No	Yes
Pro-competition	• MTCs is in effect a tax by incumbents paid for by new entrants • The most competitive markets – e.g. data/ Internet/VAS – work on Bill & Keep and have shown the fastest growth rates • Cross subsidy between off-net and On-net calls	No	Yes
Network utilization	• Lower tariff in Bill & Keep allows operators, increasing network utilization	No	Yes
Promote efficiency	• By, in effect, guaranteeing a rate of return, cost led MTC does far lesser to promote efficiency compared to Bill & Keep	No	Yes
MNP; confusion on on-net calls	• Differentials between on-net and off-net tariffs will remain in cost based MTC • Confusion regarding differentials has increased manifold in the post MNP era	No	Yes
Future ready	• Move to new technologies and NGN will continue to add further complexity to a cost based MTC regime • Bill & Keep is future ready regime	No	Yes

d. **In case TRAI believes that the market situation does not permit for immediate adoption of Bill & Keep and glide path of may be 1-2 years is required, then the termination charges should be <u>cost-oriented.</u>** ERG in consultation paper has also suggested that regulators may set a glide path to Bill & Keep within the regulatory period related to the next market analysis they carry out for voice termination.

e. TRAI had used an FAC approach while setting the MTC in 2003 and 2009, in which capex costs are not considered in the calculation. This approach can be used today and based on factors such as increased minutes and lower network costs. However the cost structure for new operators and old operators is very different especially if CAPEX component on incremental basis is also to be considered because of the following reasons given in the following **Table 6**.

TABLE 6

Old GSM Operators	**New GSM Operators**
900 MHz spectrum which has better propagation property resulting in major savings in CAPEX and OPEX	1800 MHz spectrum which requires much higher CAPEX and OPEX
Excess spectrum resulting in trunking efficiency	Spectrum even upto contracted limit not allocated. Excessive CAPEX to meet QoS requirement
Depreciated Plant	Un-depreciated plant
Higher utilization of network	Under utilization of spectrum

f. A cost based or cost-plus MTC regime is totally against recent philosophy of market led pricing (as is being followed in spectrum auctions) and other regulation (e.g. tariffs determined by market forces rather than a cost plus regime; like we see in the fertilizer sector). A cost-based regime protects inefficiency by practically guaranteeing a rate of return on costs and investments. In addition, cost-plus regimes are extremely complex to administer and result in significant ambiguity – whose costs, for which technology, for what network utilization etc. become exceeding difficult questions to answer. In effect, a cost-based MTC is a cross subsidy of incumbent networks paid for by new entrant operators; a tax that implicitly offers indirect exclusivity to incumbent operators.

g. If TRAI would like to focus on incremental costs as the most economically efficient means of determining the impact of interconnection between competing operators, then TRAI could select the FL-LRIC methodology to determine MTC. It is important to note that a FL-LRIC based model typically determines the ceiling of termination charges to be set.

h. Conventional LRIC models when applied result in asymmetry termination charges especially when operators enter market at different point of times, hold different quantum of spectrum and operate in different spectrum bands. Conventional LRIC seeks to assess the efficiently incurred and forward-looking (or current) incremental costs of providing termination inclusive of an allocation of the common costs. The increment in output which was being used was total network traffic. European Union has in detail deliberated on the conventional LRIC model which has been defined as "LRIC plus" and now suggested a new methodology called "pure LRIC". Pure LRIC only allows for long run variable costs to be recovered, and excludes common costs or mark-ups. The asymmetry termination charges when CAPEX is also included are imminent for the following reasons:

1. As per the EC new guidelines the relevant incremental costs (i.e. avoidable costs) of the wholesale call termination service are the difference between the total long-run costs of an operator providing its full range of services and the total long-run costs of an operator not providing a wholesale call termination service to third parties. The details of new methodology are given in the EC recommendation and Explanatory Memorandum. All European countries have started adopting this approach resulting in significant decline in termination charges.

2. In case TRAI decides to continue with the CPP regime then this approach is the most effective way of ensuring a fair IUC regime for all service providers and promoting competition in the market. We propose the adoption of the 'Avoidable Costs'/ pure LRIC concept based on the LRIC cost methodology. Services like SMS, MMS, video calls and other VAS should continue to be under the Bill & Keep regime. The termination charges should clearly reflect cost advantage available with old GSM operators and therefore should be asymmetric.

i. **In view of the above it is suggested that:**

- **Bill & Keep regime is preferable;**
- **A cost-based regime protects inefficiency by practically guaranteeing a rate of return on costs and investments.**
- **In case TRAI believes that the market situation does not permit for immediate adoption of Bill & Keep and glide path of may be 1-2 years is required then the termination charges should be cost-oriented.**

- **EC guidelines on cost oriented MTC based on avoidable cost is preferable.**

3. In case your answer to question 2 above favors the cost oriented approach, would it be appropriate to permit Bill & Keep between service providers who have symmetric traffic?

Bill & Keep should be adopted irrespective of Traffic Pattern

a. Further to the benefits of Bill & Keep regime, as highlighted in the response to question 2, TRAI may implement Bill & Keep irrespective of the nature of the traffic pattern. The Bill & Keep regime is consistent with the cost causation principle and as such traffic pattern should not impact adoption of this regime.

b. The TRAI Interconnection Regulation of 2001 sets principle for deciding Interconnection usage charges on the basis of cost. This requires that "The party which causes the cost should bear the cost ". Applying this principle it is assumed under CPP regime that since the caller makes the call, the caller causes the cost and should bear the full cost of the call. This then leads to a calling party pays system in which the originating network pays the terminating network a cost based termination charge.

c. In reality, the vast majority of telephone calls benefits both the calling and called parties. The object of the call is communication, and as long as both parties are willing to engage in that communication, both parties receive a benefit. Friends and family benefit from calls to each other regardless of which person originated the call. Therefore both parties cause the cost. Information exchanged in calls between consumers and businesses benefits both parties. Therefore, cost of every call should be borne by both the parties.

d. **Traffic imbalance cannot be a reason for not allowing B&K- one has to keep in mind imbalance in cost of termination too while going by cost based approach.** Old incumbent operators have advantage of spectrum in 900 MHz band giving them significant cost advantage over new operators who have meager spectrum in 1800 MHz. Old incumbent operators also have advantage of volume which further reduces the cost of termination for them.

e. A B&K approach will truly create level playing field among the new and old operators.

Service Providers should not be allowed bilateral arrangements for Bill & Keep

f. Operators should not be allowed bilateral arrangements for Bill & Keep as that would result in discriminatory termination charging arrangements and would impact competition. Such arrangements would result in formation of cartels and impact new operators' ability to effectively compete in the market.

g. It may kindly be recalled that inter operator payout on account of SMS charges was revised and put under forbearance on 1st April 2009 vide TRAI IUC Regulation dated 9th March 2009 and . The competitive landscape has changed significantly since then. The telecom sector now consists of a mix of a number of new operators and incumbent operators in comparison to earlier operating environment when there were only 5-6 settled operators. Taking benefit of this situation, some of the incumbent operators have started showing monopolistic behavior by insisting SMS termination charge and other interconnection charges like high roaming inter operator charges, port charges, collocation charges etc from the new operators. Same anti competitive behavior is expected if Bill & Keep arrangements allowed between few operators. Bill & Keep arrangements would be agreed between cartels and similar arrangements denied to other operators based on traffic pattern.

h. **RCOM therefore does not support Bill & Keep arrangement between service providers based on traffic pattern. We suggest Bill & Keep should be universally applicable.**

4. If the cost-oriented or cost based approach is used for Interconnection Usage Charges, do you agree that fully allocated cost can be used with historical cost data submitted by various service providers in their audited Accounting Separation reports, published documents or any other information submitted to TRAI? If not, please give your alternate solution with explanation, required data and proper justification.

a. **RCOM does not support use of fully allocated cost based on historical data given in Accounting Separation reports for estimating termination costs.** It will inflate termination cost many times. The accounting separation is based on fully allocated cost and not on the Long Run Incremental Avoidable Cost which is best international practice. Even the cost of land, building, vehicles, furniture, patents and technical knowhow, office equipment is loaded on termination costs.(refer Performa I of Accounting Separation)

b. **Accounting Separation reports based on historical costs does not take into account that cost of equipment has sharply declined over last few years.** The avoidable cost for termination of a call cannot be obtained from accounting separation reports.

c. The cost methodology must take into account that different frequency bands impact on the number of coverage sites required by the operator. An operator with 1800 MHz spectrum would require 2.8 times the number of sites (on a pan India basis) to provide similar coverage as a primarily 900 MHz operator. This difference in cost structure must be built in the model. Higher termination

charge should be specified operators in 1800 MHz compared to operators operating in 900 Mhz.

5. **Should CAPEX be included in calculating/ estimating termination charge? If so, which network elements from the ASR data should be included in the cost base?**

   a. **We do not support fully allocated cost methodology** when CAPEX is to be considered.

   b. Comprehensive information on the network elements involved in call termination deployed by each operator is generally not available in the accounting separation reports. In this scenario any analysis on the capex involved is likely to contain significant data gaps and making accurate calculations difficult

   c. The access network is used for innumerable revenue streams like, STD, ISD and Local calls, national and international roaming calls, SMS- Local, National and International, Mobile Internet, Content based VAS, rental, charges for STVs other pre-paid vouchers and packs etc. On few access services like international roaming, international calls, SMS, content based VAS operators make super normal profits. The cost should be allocated on the basis of revenue to various products and services.

   d. International regulators such as the European Commission have recommended a pure LRIC model. Under this model, the total network cost to carry all traffic is first calculated, followed by calculation of the cost, without considering the minutes of traffic terminating from other networks. The cost of terminating traffic is held to be the difference between the two results. This cost is then divided by the number of minutes to estimate the Mobile Termination charges.

   e. **Applying the pure LRIC method ensures that only the cost related to proving additional network capacity to handle the incoming interconnecting traffic is taken into account when estimating the termination cost**. The non-incremental common and joint cost, markup etc used in conventional LRIC is not allocated to termination under pure LRIC model, resulting in lower levels of termination charges compared to other LRIC methodologies and fully allocated cost methodology.

   f. OFCOM has recently used Pure LRIC model resulting in substantial decrease in termination charges given in the following figure:.

6. **Do you agree that with inclusion of CAPEX in the calculation of termination charges, rental/ administrative or any other fixed charge component should be removed from the retail tariff by regulatory intervention? If not, please give reasons.**

a. TRAI has been historically calculating the termination charges by excluding capital expenditure. While operating costs were allowed to be recovered through termination, all other revenue streams including rental, call charges, international roaming, SMS, VAS etc are under forbearance so that operators are given full flexibility to recover costs.

b. Service providers are not functioning under a regime of regulated return. In such a scenario, any calculation of termination charges cannot preclude the presence of these unregulated revenues. TRAI must allocate cost on the basis of revenues. It would therefore be incorrect to calculate the termination charge with the principle of providing the operators with a regulated return on investment against complete cost incurred in setting up network elements, when those network elements are also being used for other non-regulated purposes. This would result in transferring of cost to the competitor in excess of what is needed. Old operators would like to transfer and more cost to competitor to cross subsidize their retail tariffs.

c. **Therefore, only non-avoidable cost required for termination of calls should be considered for estimating termination charges.**

7. Should TRAI continue with the existing rate of return of around 15% in the form of pre tax WACC as adopted in other regulations? If you do not agree with the above, please state what should be the rate of pretax WACC, along with justification for your proposed rate.

a. The WACC depends up on the cost of equity, the cost of debt, debt equity ratio and prevalent tax rates. A debt equity ratio of 1:1 is generally considered efficient and may be used in calculations. The relevant tax is MAT which may be applied. The cost of equity is around 13-14%, with the cost of debt being around 11%. Setting the WACC at a higher than necessary value would result in supernormal returns accruing to the operators. The current levels of WACC for listed companies are:

Operators	*Pre-Tax WACC*
Bharti Airtel	*12.7%*
Reliance	*13.3%*
Idea	*13.1%*

Source: Morgan Stanley, Feb, 2011

b. In the light of the above, it is suggested that pre-tax WACC of 13% may be used for determining Termination Charges

8. Would it be appropriate to adopt Straight Line Method with an average life of 10 years for all network elements for taking into account depreciation? If you do not agree with this proposal, please give your alternative method with justification.

a. The straight line method (SLM) is a commonly used method that divides depreciation expenses evenly over the life of the asset on a nominal and uniform basis. SLM is a prescribed method for determining depreciation in the Companies Act, 1956. All listed telecom companies are using SLM for depreciation.

b. Electronics have useful life of around 8 years and towers have around 16 years. Therefore a weighted average depreciation rate of 10% may be used.

9. **Do you agree with the proposal for treatment of the cost items as indicated in Table 3.2? If not, please give your proposal with**

a. Table 3.2 discusses the possible inclusion of following cost items while calculating the termination charge:

(i) license fee and spectrum charge
(ii) Sales & marketing cost
(iii) employee cost
(iv) administration cost
(v) maintenance cost
(vi) network operating cost
(vii) Other costs

(i) <u>License Fee and Spectrum Fee</u>

- License fee and spectrum charge are calculated as a percentage of the adjusted gross revenues (AGR). For calculating the AGR, any interconnection charges payable are considered as pass-thru charges. Since net payments from one operator to another on account of termination charges is negligible it may be **prudent to exclude the license fee and spectrum charge** in the calculation of the termination charges

(ii) <u>Sales and Marketing Cost</u>

- Termination market has no relevance to sales and marketing and therefore TRAI has correctly suggested that **Sales and Marketing related costs should not be included in cost estimation for termination charges.**

(iii) <u>Employee cost</u>

- Only network related employee cost should be considered. **Employees for sales and marketing, shared services like commercial, legal, administration, HR etc have no role in termination and therefore such employee cost should not be considered.**

(iv) Administration cost

- Only the proportion of administration which is associated with the setting up and maintenance of the avoidable network element required for the termination of call may be considered.

(v) Network operating and maintenance cost

- The maintenance cost and network operating cost pertaining to the avoidable network elements which are incrementally required for termination of calls may only be included for the calculation of the termination charges.

10. Do you agree that revenue can be used as a driver for segregating the cost pertaining to VAS services from the total cost indicated in the ASRs? If not, please provide a template with appropriate method for separating the cost items for value added services from the cost data provided in the ASR.

a. It would be incorrect to calculate the termination charge with the principle of providing the operators with a regulated return on investment against complete cost incurred in setting up network elements, when those network elements are also being used for other non-regulated purposes like VAS. This would result in transferring of cost to the competitor in excess of what is needed. Old operators would like to transfer and more cost to competitor to cross subsidize their retail tariffs. They would not like cost related to VAS may be apportioned although their revenues are expected to be around 15% of total revenues from VAS.

b. Since the Accounting Separation Report data does not contain the costs breakup pertaining to various VAS services, analysis of costs is not possible. The TRAI may note that Service providers are not functioning under a regime of regulated return. In such a scenario, any calculation of termination charges cannot preclude the presence of these unregulated revenues. Therefore VAS related costs should be apportioned on the basis of revenue.

c. Therefore, RCOM suggests that the cost for VAS should be allocated on the basis of revenues.

11. Should termination charges be asymmetric in respect of existing operators and new entrants or between different types of networks? What should be the criteria to distinguish between an existing operator and a new entrant? Please justify your answer.

a. If TRAI implements a cost oriented MTC, we believe that asymmetric termination charges should be there between existing and new service providers. Old operators and new operators have very different cost profiles. TRAI generally uses average costs to determine MTC. This approach is double blow for new operators as their higher costs result in increase in costs and only these operators end up in paying higher net termination charges to old operators. These two camps have different cost profiles mainly for the following reasons:

Old GSM Operators	**New GSM Operators**
900 MHz spectrum which has better propagation property resulting in major savings in CAPEX and OPEX	1800 MHz spectrum which requires much higher CAPEX and OPEX
Excess spectrum resulting in trunking efficiency	Spectrum even upto contracted limit not allocated. Excessive CAPEX to meet QoS requirement
Depreciated Plant	Un-depreciated plant
Higher utilization of network	Under utilization of spectrum

b. Asymmetric MTC has been used effectively in several European markets to for a variety of reasons. The most common reasons are to compensate operators for exogenous factors resulting in higher efficient cost of operations, and to compensate late entrants to take into account lower economies of scale.

Portugal (Euros)	Jul-08	Oct-08	Jan-09	Apr-09	Jul-09	Oct-09
TMN	0.08	0.075	0.07	0.065	0.065	0.065
Vodafone	0.08	0.075	0.07	0.065	0.065	0.065
Optimus	0.096	0.09	0.084	0.0078	0.072	0.065

Greece (Euros)	Jan-08	Jan-09	Jan-10	Jan-11
Cosmote	0.0989	0.0786	0.0624	0.0495
Vodafone	0.0991	0.0786	0.0624	0.0495
Wind	0.1041	0.0786	0.0624	0.0495

Spain (Euros)	Mar-07	Sep-07	Mar-08	Sep-08	Mar-09	Sep-09
Telefonica (Moviestar)	0.1114	0.1031	0.0948	0.0866	0.0783	0.07
Vodafone	0.1135	0.1048	0.0961	0.0874	0.0787	0.07
Orange	0.1213	0.111	0.1008	0.0905	0.0803	0.07
Xfera	NA	NA	0.1436	0.1305	0.1173	0.1041

Italy (Euros)	Jul-08	Jul-09	Jul-10	Jul-11
TIM	0.0885	0.077	0.066	0.059
Vodafone	0.0885	0.077	0.066	0.059
Wind	0.0951	0.087	0.072	0.059
Hutch 3	0.13	0.11	0.09	0.07

Source: European Regulators Group (ERG) : Symmetry MTR/FTR Action Plan

Operator receiving higher MTC

c. The Portuguese Regulator after a detailed analysis decided to introduce an asymmetric glide path for 5 quarters while moving termination rates for the 3 operators to cost levels. Optimus was given a higher MTC as a result of traffic imbalances as compared to other larger operators. In September 2006 the Spanish Regulator established the glide path for MTC's for the 3 incumbent players Movistar, Vodafone and Orange to achieve a symmetric termination of 0.07 €/min by late 2009. Xfera the latest to enter the Spanish market (2006) was allowed higher MTC's to compensate for its lack of economies of scale. Post 2009 the Regulator will have to revaluate the future course of action for Xfera. The Italian Regulator has allowed Wind and Hutch 3G to charge higher MTC's as compared to the incumbent operators TIM and Vodafone. The Regulator has established a 3 year glide path wherein the MTC's would gradually move to symmetry for all operators.

12. Should the TRAI treat the work done in origination and termination of a call as identical for the purpose of determining termination charges? If not, please provide justification in support of your answer.

a. **The costs involved for originating and terminating calls are entirely different.** Though the network elements involved in origination and termination are similar but there are number of costs attributable to retail customers and not to the whole sale termination market. For example, a significant amount of sales and marketing effort can be linked to the origination of calls, as a potential customer must be encouraged to firstly subscribe to the service, and secondly to use the service. In such a state, the costs of employees, administration linked to the sales and marketing effort can also be attributed to the origination of a call. With regard to termination however, no sales and marketing effort is required as the same is undertaken by the originating operator. **Similarly cost elements such as bad debts, customer care, dealer's margins, legal costs etc are attributable to own subscriber and cannot be passed on**

to the subscriber on other network. The origination charge is generally dependent on market forces.

13. What should be the criteria to estimate the traffic minutes for the fixed line network as actual traffic minutes for the fixed network are not available with TRAI? Please provide justification in support of your answer.

a. **The TRAI should take the actual data available information with fixed line operators as that would be the most appropriate approach to compute the traffic minutes being carried by the fixed line network.** Any alternate approach may be subject to a large number of assumptions and may not provide the correct results. TRAI should use various provisions under the TRAI Act, 1997 to direct operators to submit this information. In case fixed line operators are not able to provide this information then TRAI should estimate these minutes on the basis of information available with it.

14. Do you agree with the policy that origination charge should be under forbearance? Please provide justification in support of your view.

b. The origination charge is usually calculated by taking the residual amount of tariff retained by the originating network, after paying off the transit, carriage and termination charges. Therefore, the origination charges are subject to retail competition as the level of the origination charge depends on the tariff being charged by the operator.

c. **Given the large number of players and competitiveness, there is no need for any price regulations as this would curb innovation in tariff plans and may prove to be a hindrance in the growth**.

d. Origination or access to provide long distance service through calling cards. Although DoT has announced policy for calling cards a long time back but operators could not agree on origination charges and therefore calling cards are still not available for consumers. Consumers still do not have choice to select their long distance operator; **Therefore TRAI should intervene and urgently specify origination charges for calling cards.**

15. Which of the following is the best option for International Termination Charge? (a) Left for mutual negotiation between access providers and ILDO (b) Reciprocal arrangements with other countries (c) Higher than the domestic termination charge (d) Same as domestic termination charge

a. A call originating from an international network is handed over to a domestic NLD operator or access provider for carriage or termination of international call. The path followed by the call from the ILDO gateway to its destination is the same as if it were a domestic call. Since the same network elements as a domestic call are utilized, the same costs are incurred.

b. **Since there is no extra cost involved in terminating an international call as compared to a domestic call, the international termination charges should be kept at the same level as domestic termination charges.** Additionally, there is a risk of call bypass in case international termination charge is kept at a significantly higher level compared to domestic termination rates.

c. We favour uniform termination charges for ILD and domestic termination based on work done principles for both. However we acknowledge the need to keep incoming international call at a higher rate by introducing a new IUC component of carriage for international leg of incoming ILD call (from international Gateway to India Gate Way). **This carriage charge may be fixed at 20 paise per minute. This will be in line with Interconnect regime principles of Work done. Since ILD operator carries the call till Indian shores, it should be reimbursed based on work done principle. Since, work done for termination of domestic and International call is same, the access provider should be paid at the same rate for both types of calls.**

16. Is there a need to specify separate ceilings for carriage charges for remote and hilly areas? If yes, how should the costs corresponding to remote/ hilly areas be segregated for carriage charges to/ from remote/ hilly areas, as the Accounting Separation Reports of the NLD operators provide only a consolidated cost for pan India operations?

a. There should not be separate ceiling tariff for remote and hilly areas; it may lead to an increase in cost to the operator, acting as a deterrent for improvement in penetration levels and quality of service in these areas. The current charging mechanism ensures that costs are averaged and recovery is even from urban and rural calls. Separate costs for urban and rural areas would lead to an increase in charges for the existing subscribers, and may act as a hindrance in the uptake of services by new subscribers.

b. This policy will be against economic development and national integration. In order to incentivize carriers, the regulator may consider offering subsidies for laying and operating networks in remote and hilly areas, through the USO fund which has the

amongst its objectives the creation of infrastructure for provision of Mobile Services in rural and remote areas.

c. **The current carriage charge ceiling of Re 0.65 per minute were notified in 2006. The costs have substantially gone down since the n on account of economies of scale and significant drop in prices. It is therefore suggested that the carriage ceiling charges including charges for remote and hilly areas should be revised to 40 p per minute.**

17. Do you feel that TRAI should intervene in the matter of International Settlement Rates? If so, what should be the basis to determine International Settlement Rates?

a. Yes, TRAI should intervene in the matter of International Settlement rates. Higher settlement rates add cost for the ILDOs is ultimately passed on to the Indian consumers. **When foreign operators use the monopoly power to charge higher settlement rates then TRAI must intervene to protect the interest of Indian consumers.**

b. The TRAI's international telecommunications policies, including its policies of abolition of ADC and putting carriage charge for ILD calls including international settlement under forbearance have played an important role in reducing foreign termination cost. TRAI's policy of forbearance truly reflects the existing liberalized Indian international telecommunications market and should continue. However few operators exploit monopoly by unilaterally increasing settlement rates. Recently Middle East countries have increased settlement rate. This results in disproportionate traffic and loss of Forex.

c. **The basis of settlement rates should be on reciprocal treatment to the operators in other countries.** Middle East Telcos are operating in protective environment of monopolies or duopolies. For such countries as ME where termination charges are disproportionately high (~ 10 to 20 cents PM), TRAI should set a floor for termination of traffic from such countries which should be higher than the general ILD termination charges into India. For example it could be 5 Cent for ME block of counties which benefit disproportionately at expense of Indian consumers. A Middle East originated CLI call should be @5 cent PM. Should such a call come in without CLI, ALL non CLI calls should be discouraged and punished with 5 cent PM termination as such calls are security threat to country.

18. 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.

a. The cost of providing transit carriage cannot be segregated in the ASR since the distance based data is not captured in the ASR. Such calls are following two types:

i) Calls originating from a mobile phone and terminating on another mobile phone, transiting through BSNLs L1/L2 TAX, in case of emergency breakdown or network congestion on the direct link.

ii) Calls originating from a mobile phone and terminating on a BSNL fixed line connection, transiting through BSNLs L1 TAX, in case of emergency breakdown or network congestion on the direct link

b. The current charge of Rs 0.15 /min is much above actual cost and the charge from LDCA to SDCA should be based on actual cost incurred. Private operators continue to be constrained by BSNL to handover their traffic to BSNL at Level-II TAX and pay the transit carriage charge of Rs 0.15/min. This makes this segment non competitive and is clearly not in the best interest of the consumer.

c. **In view of the above we believe that the TRAI must either ensure increased competition in this segment by allowing access providers to use private NLDOs for their intra circle long distance calls or revise the cost for transit charge to a value that is based on the actual cost incurred as opposed to the current value of Rs. 0.15/min.**

d. The charge should be abolished. In case, the Authority is unable to abolish these charges during this consultation, these charges should at least be made cost based. A simple model based on leased line cost for the local loop, distance band involved and discount available in the market on local loop has been provided at Appendix 1 (for carriage charge calculation) and at Appendix 2(for transit charge calculation). In line with the calculations, the carriage charge should be brought down to 2 paise per minute and the transit charge should be 1 paise per minute.

19. 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.

&

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

a. If the costs of all relevant network elements are considered under fixed line termination charge, there is no basis for charging of transit carriage by BSNL. To meet the quality requirement only private operators and subscriber of private operators are bearing this cost.

b. In case of **intra LDCA** transiting, since there is no or **little distance element involved in transit of a call**, the charges for transit should be much lower than the LDCA to SDCA carriage charges. Yet, while LDCA- SDCA charge is 15 paisa per minute, the transit charge is marginally lower at 14 paisa per minute by BSNL.

c. We recommend that **transit charges** (both from LDCA to SDCA and from mobile to BSNL mobile, transiting through BSNL fixed n/w) **should be reduced substantially** from the current level of Rs. 0.15/min & Rs 0.14 /min to the amount actually incurred by the operator.

d. TAX transit charges should not be allowed to be negotiated as BSNL would start charging exorbitant amount for this segment. The TRAI must specify cost based TAX transit charge of 2paise per minute for this segment.

21. Is there any need to prescribe separate termination charges/ carriage charges for video calls? If yes, how should this charge is calculated in the absence of cost data? Please provide the methodology and data to be used.

a. The video calls by dialling a number are feasible only on the 3G networks. At present the number of players is limited to 4 per circle for 3G. All operators have just started this service and have almost similar market share. The video call service adoption largely depends on its affordability. The nature of the market can be best served by adopting Bill & Keep regime. Under this regime the video call subscribers will be able to make off-net calls at the same rate as on-net calls.

b. In terms of cost there is no difference in video call and voice call as same.

22. Do you agree that a deterrent termination charge should be imposed for commercial SMS? In your view, what would be the most appropriate level of termination charge for commercial SMS?

a. On the basis of cost there is no case for imposing charges on any form of SMS.

b. However, IF for consumer benefit, the TRAI wants to impose tariffs on commercial SMS, the rate TRAI could charge could be 10 paise/ commercial SMS.

c. Termination charges on A2P SMS would act as a deterrent to the current explosion on unwanted messages that customers get. Subscribers are being inundated by undesired SMSs and it is in the interest of the Authority to address the customer grievances. So, it is suggested that for A2P commercial SMSs should be considered as an exceptional case and cost-based principle should not be applied here.

d. However, please note, there is no cost basis for charging for commercial SMS – this suggestion is purely from a customer benefit to prevent deluge of unwarranted commercial SMS's.

e. Commercial or A2P SMS's can be generated from 5- Digit Shortcode, 10 digit no and Alphanumeric no. As per the new UCC guidelines, it needs to be from a new

Telemarketing CLI number. All of the above should be covered under the scope of A2P Termination charges.

23. Do you agree that Bill & Keep regime should be put in place for other types of SMS (non-commercial SMS)? Please provide justification for your response.

a. It may kindly be recalled that inter operator payout on account of SMS charges was revised and put under forbearance on 1st April 2009 vide TRAI IUC Regulation dated 9th March 2009 and the competitive landscape has changed significantly since then. The telecom sector now consists of a mix of a number of new operators and incumbent operators in comparison to earlier operating environment when there were only 5-6 settled operators. In the earlier scenario, the Authority had taken a stand of forbearance on some issues. However, taking benefit of such a situation, some of the incumbent operators have started showing monopolistic behaviour by insisting SMS termination charge and other interconnection charges like high roaming inter operator charges, port charges, collocation charges etc from the new operators. TRAI should stop SMS termination charges as there is no significant cost involved.

b. From a cost perspective, a Peer to Peer (P2P) SMS cost a few paisa, due to the capex required for an SMS centre. However, there is not a significant requirement for deploying incremental capex for provisioning SMS services. Thus the incremental cost to serve subscribers is nominal. Further, the cost associated with accounting and settlement of SMS related interconnect charges may exceed the actual inter operator payout.

24. Is there any need to prescribe SMS carriage charges or should it be left for mutual negotiation? If SMS carriage charges are to be calculated, what methodology should be used to calculate these charges? Please provide all cost details and methodology.

a. The SMS carriage charges are negligible and therefore a Bill & Keep methodology is likely to be preferable.

25. Do you agree that with the inclusion of all costs in the calculation of Interconnection Usage Charges, the item "incremental cost for roaming services" should be excluded from the computation of tariff ceiling for national roaming? If not, please give reasons.

a. Roaming occurs when a subscriber moves from the home network to a different circle. Under this situation, the only incremental change is that the number of the subscribers is updated in the Visitor Location Register at the MSC of the same operator in the roaming circle. The roaming calls are routed within the operators own network and as such there are no external network elements involved in the delivery

of these services. There is no interconnection with any other operator and thus the issue of an interconnection charge does not arise.

b. Operators may be allowed only carriage charge at the wholesale rate for receiving roaming calls. There should not be any additional roaming charges outgoing calls.

V. CONCLUSIONS

It is quite clear, that the Indian Telecom industry is at the cusp of the next stage when new technologies like 3G, 4G are being deployed. The convergence of telecom and the internet is happening and are becoming direct substitutes each other. The Authority can kick start this new phase of convergence of technologies as it has done repeatedly over the past decade, by implementing a future ready dynamic MTC regime. This will directly result in increased competition, lower tariffs, additional penetration and overall growth and profitability of the industry.

There is plenty of evidence to show that telephones have a high correlation with GDP. As per the analysis by ICAER the output multiplier of communication sector is 1.94, indicating a strong linkage with the economy. A 1% increase in the communication GDP will lead to 0.35% increase in the overall GDL and 2.72% increase in subscribers. Access to information and communication technologies allows the benefits of information availability, business opportunities and social connections that translate into brighter education and economic opportunities.

A significant reduction in MTC will benefit both consumers and operators. It will be consistent with the TRAI's fundamental operating tenets – "pro-consumer", "pro-growth" and "pro-competition". Slight reduction in MTC to say 10-12p will not be sufficient to take sector growth to the next level nor will it be significant to induce usage.

We urge the TRAI to not let this golden opportunity of using IUC to fuel the next phase of telecom growth in India slip. TRAI must act decisively and implement a dynamic IUC regime. TRAI should choose the preferred option depending on the objectives it wants to target:

- If the key objectives are to drive industry growth by promoting competition and by creating a level playing field the asymmetric MTC, is the preferred option

- If TRAI finds it difficult to implement asymmetric MTC the symmetric MTC at floor pure LRIC value based on forward looking costs for an efficient operators, can be considered. The LRIC cost should only include avoidable costs as has been suggested by the European Commission. There should not be any mark up for common costs. TRAI should not use Accounting Separation cost records as that is based on fully allocated costs which include costs not related to termination charges. Accounting Separation reports may be used only when such records are based on pure LRIC

- If TRAI wants to implement a future proof IUC regime, promote competition, efficiency, facilitate convergence between internet and telecom and move away from data ambiguity of cost based mechanisms, then Bill & Keep should be adopted.