



TELCOM REGULATORY AUTHORITY OF INDIA
QUALITY OF SERVICE DIVISION

**Gist of Comments received from various stakeholders on the
consultation paper on fixing the Benchmarks pertaining to
Quality of Service for Broadband**

28th June, 2006

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List of Stakeholders who have furnished their comments

SL	Name of the Stakeholders
	Associations of Service Providers and ISPs
1	Association of Unified Telecom Service Providers of India (AUSPI)
2	Cellular Operator Association of India (COAI)
3	Internet Service Providers Association of India (ISPAI)
4	BSNL
5	MTNL
6	VSNL
7	Reliance Infocom Limited
8	Bharti Airtel Limited
9	Spectranet:- A division of Punj Lloyd Limited
	Consumer Organizations
10	Consumer Protection Association
11	Kerala Consumer Service Society
12	VOICE
13	Orissa Consumer Association
14	Palakkad District Consumer Association (PDCA)
	Others
15	Reach Limited
16	Iqara Telecom India Pvt. Limited
17	Ortel Communication Limited
18	IMRB
19	Telecom Users Group (India

Telecom Regulatory Authority of India

Quality of Service Division

REVISED COMMENTS RECEIVED FROM STAKEHOLDERS ON THE CONSULTATION PAPER ON FIXING THE BENCHMARKS PERTAINING TO QOS FOR BROADBAND

Q. 1. What is your view on the various parameters related to Quality of Service for Broadband?

COAI

Keeping into mind the rapid growth in the number of broadband users, the Authority has proposed to make the following benchmarks mandated for the access providers.

- i. Network Latency
- ii. Bandwidth Utilization / Throughput
- iii. Service Availability / Uptime
- iv. Packet Loss
- v. Fault Restoration Time
- vi. Static IP Address Allocation
- vii. Billing Performance

COAI's response on the aforementioned parameters related to Quality of Service for Broadband is given below:

Network Latency:

- The network latency within the local network i.e. from the Broadband customer to the IGSP Gateway should be < 120 ms for 90% of the time during busy hours.
- The network latency for the International segment should be < 350 ms instead of 300 ms for 90% of the time and <800 ms for satellite based communication during busy hours.
- The above-mentioned network latency applies to Optical Fibre Technologies, Digital Subscriber Lines (DSL) on copper loop and Cable TV Network only. However, in case of Terrestrial Wireless & Satellite Media, the latency time is bound to increase. Therefore, in order to meet these prescribed limits, the measurement should be taken over a period of time based on which analysis should be carried out and then compared with international practices before implementing.

Bandwidth Utilization / Throughput

- It would be pertinent to mention that there are following network segments involved in the Broadband network.

Access Segment: From customer premises to ISP node.

Long Distance Segment: From ISP node to the IGSP's International Gateway.

Network Access Point: IGSP's International Gateway to the Overseas NAP.

Content

➤ All the above constitute part of broadband network and are important and responsible for maintaining the prescribed bandwidth throughput. Although, each segment has an SLA signed with the service provider, the overall throughput would be guided by these elements and therefore, without having sufficient field data / experience, no limits can be administered. This needs to be practically observed for a period of one year and only after acquiring some experience, the regulation can be decided after another round of discussions.

Service Availability / Uptime

➤ Considering the growth of the broadband market, it is proposed to change the measurement criteria for the service availability from monthly as suggested by TRAI to quarterly basis as time is required for the service providers to collect the data after monitoring it for some time, at least for a quarter and then TRAI should establish the norms of uptime/ service availability which will guide the service providers based on the practical / factual data.

➤ Therefore, we recommend that service availability / uptime benchmark should be 90% for all the users up to 31.03.2008. This should be reviewed after that before actually implementing the same.

Packet Loss

➤ The packet loss should not be more than 1% with a quarterly reporting period and it should be measures up to NAP only.

Fault Restoration Time

➤ The fault restoration should be measured in business hours and the following should be excluded for calculation / measurement purpose:

- i. Network facility damage due to third parties, including last mile network owner.
- ii. Damage to network facility due to force majeure.
- iii. Deferment of service restoration request by customers.
- iv. Faulty or inaccessible customer equipment.
- v. Faulty customer infrastructure or internal wiring.
- vi. Fault due to other service providers.
- vii. Wrong address / incomplete information.

Static IP address allocation

➤ Static IP address allocation is not mandated for providing broadband and therefore should not be a part of the Quality of Service benchmarking criteria.

Billing Performance

In this case, our views are in line with the benchmarks as prescribed by the Authority.

ASSOCIATION OF UNIFIED TELECOM SERVICE PROVIDERS OF INDIA & M/S RELIANCE INFOCOMM:

Introduction : The primary step for TRAI in arriving at any enabling regulatory framework is to drive the availability of broadband in our country.

The Broadband Policy 2004 set a growth target for Broadband and Internet subscribers in the country as:

Year ending	Broadband subscribers	Internet subscribers
2005	3 million	6 million
2007	9 million	18 million
2010	20 million	40 million

The number of Broadband subscribers at the end of 31st December, 2005 was 9.03 lakh thus achieving less than one third of the target with a short fall of more than 2 million. The broadband subscriber base as of April 2006 stands at 1.4 million.

It is seen that compared to most of the countries in Asia and the West where broadband usage is growing, our country still lags behind. As such, the focus right now should be on both supply side and demand side of the broadband market i.e. creating and deploying broadband-capable infrastructure in the country as well as stimulating the use of broadband in the country. We need to focus on creating the need and deployment of broadband in the country.

Stimulating broadband demand and supply

Using a demand side approach, assistance can be provided for development of appropriate broadband applications and content, such as for education and health care. It can also simulate production of applications and content by the private sector through promotional activities. One example would be telecommuting. A robust policy and regulatory mechanism that encourages working from home would go a long way in speeding up adoption of Internet and broadband usage. This in turn would create newer and more innovative applications that in turn would attract more users and so on. In fact telecommuting is a major driver of broadband penetration in most of the Western and OECD countries.

From the supply side approach, it is necessary to remove unnecessary regulations that create hurdles in broadband rollout and ensure a stable regulatory framework. For example, to ensure rapid rollout of broadband, right of way should be available so that new entrants may build their own broadband network more easily. In addition, regulations need to be reviewed to ensure that they do not slow down the development of new technologies. In addition unbundling of the local loop of the incumbent will go a long way in stimulating growth of broadband penetration.

Micro-regulation in broadband would inhibit its growth since it is a nascent market yet to experience the phenomenal growth that has been experienced in the Wireless market of India.

Broadband and Price at which it is delivered

It is extremely important to keep in mind that broadband usage is more a market phenomena than a policy driven one. One type of application or the other may become extremely popular because of unanticipated or unexpected developments in the market.

While the focus on growth of Internet and Broadband is definitely a welcome development, TRAI should not lose sight of the basic issues – that of the ability of the market to pay and for operators to build a viable business.

In Singapore, which has been trying to introduce broadband since 1997, a survey by the telecom regulator Infocomm Development Authority (IDA) found that at least two of five Singaporeans were broadband savvy. However, none was willing to pay more than S \$ 8 (or US \$ 4.6) per month for online content. This translates to about Rs 200 per month in India. While, broadband is available for the same price in India it has a cap in the form of a data download limit. An unlimited broadband connection (256 Kbps) still costs approximately Rs. 1,000 per month. The associated costs of broadband provision are far higher than reflected in the existing prices. The factors contributing to this are;

- Cost of International Bandwidth
- Heavy reliance on content hosted outside of India i:e; the TCP/IP traffic routing to locations outside of India is still very high thereby imposing a larger proportion of cost of International bandwidth.
- High Cost of access devices i:e; CPEs

Measures to Boost Local content

E-Governance

Finally, and in some ways most importantly, it is necessary to keep an eye on the real reasons for growth of Broadband in US, UK and Asian countries like South Korea and Malaysia.

These countries have seen double and even triple figure growth in internet penetration and Broadband access simply because hand in hand with the **creation of infrastructure** they encouraged content. The approach was: e-governance. In Korea for example, the E-Korea Vision, National Informatization Programme, Korea Cyber 21 project - all focused on creating the national need for an Internet-Broadband infrastructure.

A UNDP study of 2004 had also highlighted that countries with highest broadband penetration are those with highest E-governance initiatives. UK and US are in the lead. On a scale of 0-4, India ranks behind 60 countries with a score of 1.29. Even Armenia and Poland are ahead of India.

There should, therefore, be a key focus area for any policy initiative. Though there was an announcement by the Department of Information Technology of a Rs 5000 crore corpus for e-governance in 2003-04, the status of project as of now is not clearly known.

At the present stage of broadband penetration in India, the regulation should be an enabler rather than an inhibitor. The area of focus at this stage should be clearly on creating a larger user base by setting additional user targets:

User Targets for Broadband Internet Penetration by 2008

- All Postal offices across the country to be brought online.
- All Co-operative and Nationalized banks to be brought online.
- All Registered Educational & Research institutions.
- All Railway stations/ Bus Stations/ Airports should be brought online by installing dedicated kiosks.
- 80% of all Government institutions to be online.
- All Health institutions should be online
- Set E-Governance and E-Commerce targets to proliferate a creative, knowledge based society.
- Specific targets for building connectivity with fiber {such as, Number of buildings (in lakhs)}
- In order to achieve these targets allow all access / service providers to constructively contribute towards the building up of an IT-ready India.

Lay down fiscal incentives to encourage take up of broadband

The key policy drivers from the regulator perspective would be to recommend measures that will make cost of access to broadband affordable.

- Collection of only service tax to avoid present double taxation in form of revenue share as well as service tax.
- Set off of the Excise Duty/CVD paid on telecom equipment against Service Tax.
- Reduce effective import duties for access devices i:e; CPEs imported by licensed service providers.
- No entertainment tax (currently upto 30% in some states) applicable to broadband in the short and medium term.
- Telecom sector income tax breaks be extended to broadband sector as well.

All these measures will enable service providers to pass on the benefit to the customers resulting into affordable cost of access at various levels of the market.

As mentioned by the Authority in its consultation paper itself that Quality of Service norms for broadband are not present in most countries due to competition. We urge the authority to consider measures to improve competition in Broadband within India.

Broadband is offered on a host of platforms like wireline and wireless using LMDS, MMDS & Wimax. The competition is limited in wireline and skewed heavily towards the

incumbents. Their market share in wireline market is nearly 83%, which should be considered for Unbundling as suggested by TRAI in 2004.

Spectrum allocation for faster deployment of broadband should also be considered as a measure to boost competition in this sector.

The QoS benchmarks for Internet already exist for Dial-up Internet & Leased Lines access, which adequately meet the requirements. At this stage of broadband penetration of 1.4 million, the regulatory environment should be more focused towards creating a large user base by incentivising users & providers alike, rather than pico-regulating the sector through additional benchmarks.

The various Parameters mentioned and described in this chapter are already part of the existing QoS regulation for Leased Line Internet Access Service, such as Network Latency, Uptime & Packet loss which are adequate. Some of the parameters viz, service provision/ activation time, service availability/ uptime and fault repair/ restoration time are of general nature like in other services and not broadband specific and should not, therefore, be made applicable for broadband QoS.

VOICE:

All the parameters discussed in the paper have great bearing on the quality of service. Hence all these are relevant.

(i) Broadband subscribers are extremely harassed lot when the ALWAYS ON CONNECTION gets disconnected for any fault. It is difficult to specify DOWN TIME as the days go by and ISP takes it easy. Only repeated begging may get you connected again. They are requesting that some provision for DOCKET NUMBERING of complaints, as envisaged for other services, is considered for broadband too.

(ii) Parameters discussed in the Consultation paper must be included in the QoS Regulations.

VIDESH SANCHAR NIGAM LIMITED (VSNL)

Our experience in providing broadband services over the last several months have indicated that the BIGGEST problem in delivering QOS is linked to adequate last mile access. Even through existent/ incumbent wireline systems, broadband availability in households is extremely limited. As application and contest increasingly becomes more bandwidth intensive these problems will only exponentially multiply.

Therefore subscribers and potential subscribers face two level of problems due to poor last mile access:

- lack of availability of broadband connectivity
- inadequate bandwidth

Unless these problems are addressed in terms of policy that helps overcome last mile access issues, QOS standard setting will have only limited value.

There has been considerable emphasis in recent months on growing broadband subscriber numbers since the country is way behind the national targets. At the same

time, broadband access in India at about \$3-5 per month is probably the cheapest in the world. Given all these circumstances, the Authority must achieve a fine balance between the QoS norms and the practical network considerations & the need for increased broadband penetration at affordable rates. All the again is clearly a function a function of how the last mile issues are tackled.

SPECTRA NET - A DIVISION OF PUNJ LLOYD LIMITED

Their comments are as follows.

1. TRAI have described the internet connectivity in Fig1. There are two more stages, Subscriber internet device and network and Destination internet device and its connectivity medium and speed of connection to Internet.
 - It is necessary for QOS to be available from service providers at all the five stages for “end-to-end service QOS to the customer.
 - It is necessary for TRAI to set QOS norms and compliance to the same from Access, Long Distance and International Service Providers as well.
2. There is need for a reference test location in India and abroad with servers of proper processing power, memory and bandwidth capacity set by TRAI or any of its designated agency. It is also necessary to define file size/packet size. The subscriber internet device specifications also need to be set. Open ended definition is not possible.
3. Latency/packet loss measurement is also to be defined clearly. Example packet size, no of packets for the measurement, internet load on the circuit at the time of measurement. The measurement loads the circuit. Hence it is to be made sure that subscriber internet traffic is lower than the contracted capacity to an extent that after adding ping/latency load the total is within the contracted capacity.
4. It is necessary to define a handoff stage to the subscriber so that any issues of subscriber internet device, LAN broadcast traffic and any Virus etc issues for which subscriber is responsible do not affect the measurement.
5. We are not aware of any service provider worldwide to offer end-to-end QOS. Service provider, always guarantee for traffic in its network from the defined entry and exit points.
6. We also need to recognize use of satellite medium at origination end, at destination or enroute.

ORISSA CONSUMER ASSOCIATION:

All the parameters laid down are standard parameters. All the QOS benchmarks fixed by TRAI should be mandatorily adopted by all Service Providers. The Broadband offers should clearly state the inner and outer limits of all parameters, which should form part of the Broadband services offer as well as contract document between user and service provider in clearly understandable language.

IQARA TELECOM IND PVT. LIMITED:

QoS parameters are quite relevant and are adequate for measuring services.

CONSUMER PROTECTON ASSOCIATION:

They agree with the parameters/ benchmarks put by TRAI among which packet loss is the most serious one.

REACH LIMITED

REACH would first like to say that it comprehends and appreciates TRAI's desire to introduce a uniform minimum QoS framework for Broadband in India. However, looking at the framework proposed by TRAI in the context of digital National Private Leased Circuits (“NPLCs”) and International Private Leased Circuits (“IPLCs”) that support the current and future provision of Broadband services, including Internet services, REACH believes that while these standards may provide very helpful general guiding principles for the provision of retail products and services they are not necessarily appropriate for all wholesale products and service providers.

Wholesale

For example, many ISP operators provide wholesale ISP services to other ISP operators, Indian corporations, and multi-national companies. These customers tend to be large and very experienced players in the Indian, regional and global telecommunications markets, and are highly sophisticated purchasers of telecommunications services - with considerable purchasing power. The application of a standard "one size fits all" Broadband QoS framework underlying the services that these customers acquire is not appropriate in all cases, nor is it desirable from the customer perspective in all circumstances.

Wholesale customers purchase specific types of Broadband-based ISP services to meet specific needs, and balance the cost and quality of the underlying Broadband capacity in the light of those needs – that is, they will actively seek the type of capacity that suits their particular needs. Where a customer requires a high level of Broadband quality and resilience, the customer is prepared to pay for a higher level of service. Where quality or restoration is less of an issue for the customer, the customer may choose to acquire services based, for example, on non-restored Broadband capacity at a correspondingly lower price. Accordingly, ISP operators' agreements with their customers in respect of QoS will vary with the particular level of service required by the customer.

If all ISP operators' agreements were required to provide specific undertakings to meet the TRAI's QoS framework for all Broadband-based ISP services, the cost of ensuring these standards in all offerings would make the price of some services too high for the purpose for which they were intended or desired – as meeting the TRAI QoS framework may require the purchase of additional restoration capacity or result in other additional costs. This would reduce customer choice as some low cost non-restored or lower speed Broadband-based services would no longer be available - all customers would, in effect, be obliged to obtain higher priced services that meet the TRAI's QoS standards, even if the customer is not seeking these quality standards. Another effect would be to decrease the availability, and increase the cost, of Broadband-based ISP services more

widely. This because the requirement to meet TRAI's QoS for all services would mean that additional available Broadband capacity would need to be "set aside" even if not required for the level of service that the customer really wants, reducing the amount of Broadband capacity available for "primary" sales and increasing the costs that need to be recovered over per unit primary capacity sales.

That this type of QoS flexibility to meet customer requests and defined needs is necessary in the wholesale market is recognised by regulatory authorities in other jurisdictions. For example, in paragraph 4 of its Guidelines for Customer Charters of 24 November 2004¹, OFTA in Hong Kong recognises this when it states that the guidelines only apply "*to fixed network operators on preparing customer charters for retail customers who do not have bespoke SLAs with the operator*". In REACH's case, all their customers have agreements with them that incorporate bespoke SLAs.

The nature of the wholesale Internet business is that wholesale customers are highly knowledgeable purchasers of ISP services who will negotiate agreements that reflect their requirements in terms of QoS versus price – QoS that is agreed and generally incorporated in the SLAs the customers obtain from the ISP service provider. The need for this flexibility has again been reflected in QoS exemptions available in jurisdictions other than just Hong Kong (see Confidential Annexure A).

REACH believes that it is unnecessary, would restrict customer choice, and be to the detriment of the consumer if "standard" Broadband QoSs are mandated at the wholesale level. Such blanket QoSs would limit wholesale purchasers' ability to negotiate trade-offs between price and quality to suit their needs – and are not needed as the QoS that these purchasers knowingly contract for is set out in SLAs with the service provider.

Retail

As well as at the wholesale level, REACH considers that latitude and flexibility should also be allowed in any QoS arrangements at the retail level. Like wholesale purchasers, many retail purchasers are market savvy and actively seek lower standards of Broadband services than those proposed by the TRAI in exchange for lower prices. This may be because an individual's usage pattern is such that they use the service outside peak periods and so are less likely to encounter congestion, or that very high speed connectivity is not essential to them – that is, they purchase services that best suit their individual needs and budgets.

They believe that the root cause of a number of the consumer complaints that TRAI has received in connection with Broadband services may reside in the terms and quality of service provided for in customer agreements. That is, if appropriate quality standards in retail customer agreements are not clearly and explicitly set out in the agreement then the customer may well find that the quality of service actually provided falls short of expectations – leading to complaints to TRAI.

Rather than mandating QoS for all levels of service, an alternative and more flexible approach might be to require all service providers to set out clearly the quality of service to be provided, backed by SLAs, in their service agreements. Then, where a service provider does not set out service standards or does not do so clearly, TRAI's proposed

QoS standards could be a mandatory default level of service. In instances where the TRAI default QoS standards are applied, failure to meet these standards could be penalised by appropriate refunds or credits of the monthly service charge. It is not uncommon practice in the telecommunications industry for service failures for, say, excessive downtime for a service, to be compensated for by a refund of an amount of the monthly service charge proportionate to the period of excessive downtime – generally limited to the amount of the monthly service charge. Such an arrangement would be an incentive for service providers to ensure that the service standards they offer are adequately disclosed and easily understood – or face the alternative of meeting TRAI standards – while retaining the flexibility to allow service providers to offer consumers choice between service level and price.

This arrangement could also be supported and publicised through public awareness programmes in much the same way that other jurisdictions have promoted public awareness of the functionality of VoIP services. If, in light of the increasing availability of Internet Telephony services in India, TRAI is contemplating a VoIP public awareness programme it might be appropriate to incorporate a segment on Broadband awareness (setting out consumer rights and SLA expectations, and the default standards) as well - given that Broadband will underlie many VoIP services.

Upstream Supply

They also note that TRAI is of the opinion that ISP operators, at wholesale and retail levels, should be responsible for the quality of service provided at all stages in the upstream supply of the underlying capacity over which they offer their services². While REACH agrees that ISP operators should be held accountable for ensuring that they contract for upstream supply of services appropriate to support the standards of downstream services they provide, it is possible that there will unfortunately be instances of service failure due to circumstances beyond the control of the ISP operator and/or its upstream supplier.

There could, for example, be an IPLC failure resulting from a submarine cable system break caused by a ship dragging its anchor or outages of distant end NPLCs as a result of a natural disaster. Sometimes, *force majeure* can result in multiple cable outages or breaks. While ISPs and other operators do take steps to minimise the effects of such events – by offering services using restored capacity (which would be reflected in the associated price) – it may not be possible to eliminate the effects completely. Accordingly, REACH believes that any TRAI QoS requirements should allow for exceptions where the circumstances surrounding a service standard failure are beyond reasonable measures of provision, prevention, and/or control that can be taken by the service provider.

They also comment that in many instances the customer actually instructs the ISP service provider as to which local or national circuit provider to use to connect a service, and the customer may enter into its own agreement with that local or national circuit provider – including agreement of any circuit service levels and standards. Obviously, the ISP service provider should not be held accountable for service level failings where the customer has itself contracted for local or national connectivity or has instructed the ISP operator to use certain links and a failure occurs on one of those legs. While such arrangements and undertakings can be reflected in bespoke service agreements and

contracts between an ISP operator and a customer, mandatory universal QoS standards cannot accommodate these types of service provisioning variations.

As REACH understands that local and national circuit providers do not always commit to SLAs, on reasonable terms or otherwise, given that the quality of connectivity provided over these circuits is fundamental to assuring quality of the higher level services that ride on these circuits, TRAI may wish to consider imposing mandatory local and national circuit default QoS standards where acceptable SLAs are not available from the circuit providers themselves.

It would also be unjust to impose QoS standards on operators in India where the provision of distant end circuits (national and/or international) is in the hands of a monopoly or oligopoly that will not match the QoS standards required by TRAI. In these circumstances, because there is no effective alternative supply, operators seeking connectivity to those places have no market or purchasing power with which to negotiate the QoS standards proposed by TRAI. Where such restrictions exist today they are known by both the ISP operator and its wholesale customers, and are reflected in the quality standards and SLAs negotiated between them – that is, the reality of the market situation is acknowledged by both parties, and it would be inappropriate for unachievable standards to be imposed by regulatory fiat when the market has already recognised these limitations.

IMRB INTERNATIONAL

As per TRAI, ‘**Quality of Service**’ is the main indicator of the performance of a broadband network and of the degree to which the network conforms to the stipulated norms. We feel that a subscriber’s perception of the Quality of Service (QoS) is of considerable importance in determining the overall quality of service provided by a broadband service provider. In this light, they recommend that customer’s perception of the quality of service provided by the service provider also be included as a critical parameter for evaluation of quality of service of broadband service providers.

The key parameters upon which customer satisfaction may be measured are as follows:

- (i) Provision of service
- (ii) Billing performance
- (iii) Help services
- (iv) Network performance, reliability and availability
- (v) Maintainability
- (vi) Customer satisfaction with offered supplementary services
- (vii) Overall customer satisfaction

The quality of service may be measured against the following benchmarks:

S.No	Parameters	Benchmark
1	Percentage satisfied with the provision of service	>95%
2	Percentage satisfied with the billing performance	>90%

3	Percentage satisfied with the help services	>90%
4	Percentage satisfied with the network performance, reliability and availability such as: Satisfaction with availability of service Satisfaction with ease of connection Satisfaction with download speed Promised speed v/s delivered speed of broadband connection Satisfaction with reliability of connection Satisfaction with security of connection	>95%
5	Percentage satisfied with the with maintainability	>95%
7	Percentage satisfied with the offered supplementary services	>95%
6	Percentage satisfied with the Overall quality of service	>95%

Further, live tests may be undertaken on each of the above aspects to determine the adherence to quality of service of broadband service providers.

KERALA CONSUMER SERVICE SOCIETY:

It is true that in India QOS cannot be addressed through market forces alone as the consumer are still shy of fighting for their rights. Hence TRAI's wise and leaned decisions to follows international practices are well appreciated.

PALAKKAD DISTRICT CONSUMER ASSOCIATION (PDCA)

The progress of science and technology, the enhancement in Quality of life through societal applications including tele-education , tele-medicine, e-governance, entertainment as well as employment generation has grown like anything. The growth of broadband subscribers from 50,000 to 14 lakhs is showing influence of the service.

Fixing the Benchmarks pertaining to Quality of service is appreciated. At the same time the subscriber/ the consumer interest are also be protected.

We suggest few points regarding Quality of Service for broadband which is mentioned below:-

A). In all most all incidents the declared minimum download speed of 256 kilo bites per second (Kbps) is not provided by the service providers. The lay man level consumers are not in a position to know the speed of the kbps provided.

B) To convince the consumer following are the necessary steps to measure the speed in the system.

- i) The 256 kbps is to be increased to 1 mbps.
- ii) The present down load charges is to be reduced to 25 paise from 1.40 paise . It will attract more consumers.
- iii) To attract crores of consumers within 2 years in this field, the minimum rent also be reduced to Rs.100 from the present Rs.250.

Steps also be taken to avoid traffic jam.

Telecom Users Group (India)

All efforts are to be made to maintain the parameters mentioned.

ISPAI

We reiterate that the norms should not go beyond the network elements under the direct control of the respective ISP offering broadband access. Hence, only parameters 2.2.(iv) through 2.2.(vii) are worth consideration.

At the same time, it is imperative that the Authority lays down QoS norms for the leased lines (domestic as well as international) and enforce the same beforehand.

Reliance Infocom Limited

Same as the comments of AUSPI.

Bharti Airtel Limited

M/a Bharti Airtel Limited is comfortable with inclusion of all the above parameters.

2 Which of these should be considered for inclusion in the QoS Regulation?

COAI

At this juncture, it is rather premature to recommend what should be included unless the service providers have actually collected field data and monitored the performance.

VOICE:

Except Static IP Address allocation, all other parameters must be included in the QoS Regulations.

ORISSA CONSUMER ASSOCIATION :-

All should be included.

IQARA TELECOM IND PVT. LIMITED:

All parameters. While they appreciate the importance of network latency, managing it beyond their local access network will be rather difficult. As broadband ISP, they can commit and deliver latency for “customer to our node”, they may not be able to provide commitment for “their node to international gateway” and also for “international gateway to Internet NAP”. However, as an ISP they will have SLAs signed up with the service providers.

CONSUMER PROTECTON ASSOCIATION:

All of them

KERALA CONSUMER SERVICE SOCIETY:

The network latency proposed is satisfactory

ASSOCIATION OF UNIFIED TELECOM SERVICE PROVIDERS OF INDIA & M/S RELIANCE INFOCOMM:

Please refer to our response to (i) above

RELIANCE INFOCOM LIMITED

Same as the comments of AUSPI.

Telecom Users Group (India)

Network latency, Pocket loss, uptime, quick activation/ restoration time, additional IP on payment basis.

Ortel Communications Ltd.

The ISPs are dependent on the service level of the domestic/international leased line service providers: hence without a QoS for domestic/international leased line providers, the exercise to set up the same for ISPs will have no meaning.

3 Can you suggest some additional parameters to be considered?

VOICE:

No.

ORISSA CONSUMER ASSOCIATION :-

Coordination between BSNL, DOT and respective State Govt agencies is lacking, which increases Fault restoration time – especially when fault is due to cable damage for some public works – hence, parameters for coordination should be included. Public of Orissa cannot communicate or inform any authority of BSNL when such type of cable damage is likely to happen, as the concerned officers are posted at Kolkata.

IQARA TELECOM IND PVT. LIMITED:

The parameters defined are quite adequate for measuring services.

CONSUMER PROTECTON ASSOCIATION:

Yes, if information provided by TRAI for other western countries

KERALA CONSUMER SERVICE SOCIETY:

If the broadband service provider and the domestic service providers along with IGSPs and ILDOs join hands, what will be the fate of service legal agreements (SLAs) proposed. There shall be an Ombudsman model inspecting agency to ensure the enforcement of agreements.. The allocation of static addresses on payment basis need not be restricted.

ASSOCIATION OF UNIFIED TELECOM SERVICE PROVIDERS OF INDIA & M/S RELIANCE INFOCOMM:

Additional parameters are not required as mentioned in the introduction of our response the thrust should be creation of a market rather than inhibitive benchmarks.

RELIANCE INFOCOM LIMITED

Same as the comments of AUSPI.

Telecom Users Group (India)

No, what has mentioned is to be maintained.

4 What are your view on the proposed benchmarks?

COAI

We appreciate the viewpoints of the Authority recognizing the potential of Broadband service along with its growth potential in societal applications like tele-education, tele-medicine, e-governance etc. it is essential to lay down the criteria / Benchmarks for the Quality of Service parameters.

At this stage we would like to reiterate that depending upon the growth in the Indian Broadband market, all the parameters should be reviewed after one year and thereafter depending upon the field data available, a view should be taken by the Authority to establish these QoS benchmarks, of course after consultation with service providers.

VOICE:

In absence of any exposure to the stated benchmarks, it is difficult to comment. To start with, MALAYSIAN benchmarks are idle guide and the effort made by the regulator is significant.

VIDESH SANCHAR NIGAM LIMITED (VSNL)

Our views on the proposed benchmarks are as mentioned below:-

- (1). **The parameter for network latency** within the local network can be periodically on a sample basis at an aggregate level and not on an individual subscriber basis. They suggest that this requirement be modified accordingly, along with different parameters depending on the technology used.
- (2). **Bandwidth utilization/ Throughput:** They understand that this requirement is for carriage only till the IGSP node and does not refer to the internet traffic beyond the IGSP node.
- (3). **Uptime and the service availability:** They suggest that the service providers must be given a grade period of one year from the Effective Date to comply with the QoS requirements. We support the calibrated increase in stringency of QOS such as availability initially being fixed at 90% and then being moved up to 99%. Further, due to practical reasons, the requirement of 99% service availability can be met at an aggregate network level instead of individual subscribers.
- (4). **Packet loss:** Considering the high traffic volumes and customer size, it would be impractical for the services providers to monitor packet loss on a case to case basis. They therefore, suggest that this parameters may be excluded.
- (5). **Fault restoration time:** Time should be specified as working hours given the practically of conducting repair works/ attending calls during odd hours/ public holidays.
- (6). **Force majeure** should include continuous Power outages beyond 2 hours, given the generally acute power shortage scenario in India.
- (7). **Static IP Address allocation:** Provisioning of a static IP is a product issue and is in the nature of a routine commercial transaction between the service provider and the customer. They therefore, believe that there is no need for a benchmark on allocation of static IP.
- (8). **Billing complaints:** This parameters should be specified for “Billing Errors” instead of “Billing Complaints”, to ensure that routine billing related queries from customers are excluded. Further, the term “Resolution of Complaints” should be defined more strongly to avoid any ambiguities.

SPECTRA NET - A DIVISION OF PUNJ LLOYD LIMITED

It is not possible to measure throughput as a historic measure (In TRAI draft it is given as 70% for 95% of the time). It is not possible to establish that the traffic as less than 70% was due to non-usage of the circuit, or less usage. Any measurement has to be on current basis. This parameters needs to be removed.

They suggested the following points to be addressed while setting benchmarks:

- i). QOS to be available from all the service providers; Access, NLD, ILD. After giving allowance for Broadband network carriage parameters, QOS to be defined.
- ii). QOS measurement definition for each parameter is absolute must.
- iii). Reference Destination server to be available.
- iv). All measurements at subscribers network to be done at a defined handoff point

ORISSA CONSUMER ASSOCIATION:

All the benchmarks are standard, but they need to be enforced and made workable.

IQARA TELECOM IND PVT. LIMITED:

Proposed benchmark parameters are commendable and are needed for measuring the service levels.

Network Latency - within the local network (customer to ISP Node) is achievable and can be committed for delivery too (<90 msec). There are two more latencies (NLD and IGSP), which are not in our control, but services can be taken from service providers based on SLA.

Bandwidth Utilization/Throughput - Benchmark (not less than 70% of the subscribed level for 95% of time) can be committed and achieved between the user and nearest ISP Node.

Service availability / Uptime - 90% for all users is acceptable upto 31.03.08. From 1.4.08, our suggestion is that, the uptime could be increased to 95% instead of 99%. While calculating service uptime ISPs shall be permitted to exclude for the downtime which are all non-controllable due to external factors like planned maintenance, cable damage, long power outages, NLD outages and ILL outages.

Packet Loss – not more than 1% over a period of 1 month is fine. This is achievable from customer to ISP Node. However, there are two more areas in which packet loss can occur (NLD and IGSP), which are not in our control, but services can be taken from service providers based on SLA.

Fault restoration time – Their suggestion is that this can be implemented in phases. Phase-1 will be upto Dec 2006 during which the fault restoration could be 60% in 24 Hrs, 70% in 48 Hrs, 80% in 72 Hrs, 90% in 96 Hrs and 100% 120 Hrs. From Jan 2007, the proposed TRAI benchmarks can go live. The events suggested for exclusion for the fault resolution calculation could also have the following two events in addition to the ones proposed by TRAI

- a) Customer premise inaccessible
- b) Fault due to other service providers (like electricity)

Static IP address allocation – this benchmark is okay with them

Billing performance – this benchmark is also okay with them.

CONSUMER PROTECTON ASSOCIATION:

Proposed benchmarks are suitable for the time being.

REACH LIMITED

Our comments are as follows:

QoS Measures

REACH agrees with TRAI's approach of reviewing QoS standards that have been implemented in other jurisdictions as they reflect the experiences of other regulators and provide helpful benchmarks when considering the introduction of TRAI's own QoS measures. They, however, comment that while QoS standards in other jurisdictions may be useful benchmarks, care needs to be exercised that the QoS standards in other countries are appropriate for India as differences in a country's size and telecommunications infrastructure may mean that the standards applied in one country are not achievable in another.

We note that there are close parallels between some of TRAI's proposed QoS standards and those in effect in Singapore, in particular:

Although the Singapore regulator – IDA – has set a QoS standard of < 85 msec in respect of local network latency, the compactness of Singapore and a major national programme to build a Broadband network have resulted in ubiquitous Broadband access across Singapore and made such a QoS standard realistically achievable. While there has been rapid expansion of Broadband networks in India, local Broadband infrastructure development has not necessarily been undertaken with quite the same degree of uniformity or unified planning and execution, and there is not the same ubiquity of technology and access as in Singapore. Consequently, REACH believes that it would be inappropriate at this stage to impose on service providers in India a QoS standard of < 90 msec for latency across all the local networks they must use – particularly, as commented above, where the customer instructs that a specific circuit type and provider is to be used. Given the distances between cities in India, and that there are no direct links between some cities, we would suggest a floor of < 200 msec as more appropriate and realistic.

IDA has set an international network latency QoS standard of < 300 msec from a local network in Singapore up to the network provider's first point-of-presence in the US, or first point of entry in the US. TRAI is proposing the same latency standard in India for optical fibre cable based international networks. However, in Singapore the local network and international network are closely located, or even co-located, and it is only one "hop" from Singapore to the US on the international network. In contrast, local networks and international networks in India are not co-located, and international network connectivity from India to the US generally involves two "hops" – one from India to Singapore, and a second from Singapore to the US. Understandably, this routing creates more potential latency than the direct connectivity between Singapore to the US, and REACH would propose that cognizance be given to this by setting the

international network latency QoS standard at < 450 msec to the first point-of-presence in the US..

REACH would also seek clarification of TRAI's proposals for bandwidth utilisation/throughput ("**Utilisation Benchmark**"), and ask whether this measure remains meaningful in light of other standards that TRAI has proposed:

TRAI has suggested a Utilisation Benchmark of not less than 70% of the subscribed level for 95% of the time. REACH would like to clarify whether this proposed minimum standard is not in fact intended to be a maximum standard. Our reason for asking this is that a minimum utilisation of 70% for 95% of the time would suggest that there will be congestion at peak periods as minimum utilisation of 70% for virtually all periods leaves little headroom for spikes during peak periods.

We would also query whether it is actually necessary for there to be a Utilisation Benchmark. REACH's reasoning behind this is that the effect of over-utilisation of bandwidth is packet loss and increased queuing delays (latency). By TRAI also proposing packet loss and latency standards, a maximum bandwidth utilisation is already implied – and it is these packet loss and latency effects of bandwidth over-utilisation that customers are actually interested in, not the bandwidth utilisation itself.

Further, from a technical perspective, the level of bandwidth utilisation that can be obtained is a function of the link size. For example, while utilisation of E1 capacity may be limited to 85%, an STM16 can be driven at 95% utilisation without there being a performance penalty. Therefore setting a fixed bandwidth utilisation limit at all, let alone if the proposed Utilisation Benchmark is intended to be a maximum of 70%, would mean that the potential economies of scale that are associated with higher levels of capacity would be lost. The effect would be to artificially inflate costs for service providers and, in turn, increase prices to consumers despite higher levels of utilisation being achievable without any obvious effect on performance.

As an overall observation, REACH would comment that any metrics such as packet loss or latencies should be on an average basis.

Conclusion

Given REACH's experience that customers for wholesale Broadband-based services are seasoned purchasers of telecommunications services who often seek levels of service quality different from those proposed by TRAI - in return for lower prices - and that wholesale agreements normally include SLAs reflecting the service levels the wholesale customer has negotiated, we believe it would be inappropriate for TRAI to mandate QoS standards at the wholesale level. One effect of such mandatory QoS standards would be to restrict customer choice. Regulators in other jurisdictions recognise this and do not impose QoS standards where wholesale service provider agreements ensure agreed service levels by means of SLAs.

Equally, where providers of retail products and services also have appropriate SLAs in place, there should be no need for TRAI to mandate service standards

as, again, this may force the exit of certain lower priced services that are actively sought by consumers – consumers who are highly knowledgeable about the quality of service they are acquiring and the adequacy of these services for the purposes required. However, where retail service providers either fail to provide SLAs or do not clearly set out the quality of service to be provided, then TRAI determined QoS standards could be used as a default measure – with penalties and consumer compensation based on the level of monthly service charges. These arrangements could also be reinforced by a TRAI Broadband public awareness programme, perhaps run in conjunction with programmes for further public awareness about VoIP.

REACH also believes that TRAI over-simplifies matters when it comments that ISPs and other service providers should negotiate terms and SLAs with their upstream suppliers that align with TRAI's proposed QoS standards. In a number of cases the upstream supply is under the control of one or just a few suppliers, and service providers in India do not have sufficient purchasing or negotiating power to extract SLAs that match TRAI's proposals. In other cases, the infrastructure at the distant end simply cannot support the standards TRAI has proposed – and Indian service providers have little option but to accept these lower standards or else to provide no service at all to these places. REACH also considers that it would not be appropriate for TRAI to attribute service failures to operators in India where the circumstances giving rise to the service failure are beyond those operators' control – for example, cable damage due to a ship dragging its anchor. Also, service providers should not be held accountable for service disruptions resulting from failures in capacity links they are instructed to use by the customer.

In closing, REACH would again comment that while review of QoS standards determined by regulators in other jurisdictions is a valuable exercise when considering standards for India, it is also important to take account of the differences that exist between those places and India and to reflect those differences in any QoS standards proposed for India. In particular, REACH considers that the standards proposed for latency in both the national and international networks are not achievable as general across the board standards that could be expected to be met all the time in India. As such, it would be unreasonable to impose standards that are known not to be achievable. In fact, this would be counter-productive. Unrealistic QoS standards provide little or no incentive for operators to strive to maintain or improve their service standards if they know that TRAI's standards are unattainable irrespective of the efforts they make.

KERALA CONSUMER SERVICE SOCIETY:

Proposed benchmarks need more clarity and they must be specific. 100% rebate may be allowed. More benchmarks can be taken up as and when the need arises.

ASSOCIATION OF UNIFIED TELECOM SERVICE PROVIDERS OF INDIA & M/S RELIANCE INFOCOMM:

Internet is a best effort service. It is the interconnecting of several networks worldwide that form the Internet. Many of these networks are proprietary and therefore, their performance norms have to be complied with. This dependency on other networks and factors therefore, makes it impossible to control the quality of service. Broadband is defined in India as 'An always-on connection that is able to support interactive service including Internet access and has the capability of minimum download speed of 256 Kbps to an individual subscriber from the ISP PoP...' ; however, it is imperative that we understand the various factors that affect the performance of the Internet. These are the following:

- a. Consumer PC configuration (including CPU, speed, memory, operating system, applications running etc..)
 - b. Internet utilization at consumer PC at that instant
 - c. Link between customer PC and Service Provider PoP
 - d. Service providers own network
 - e. NLD backbone used by Service Provider
 - f. International gateway capacity (Quantity)
 - g. International gateway quality
 - h. Connectivity and bandwidth planning between content provider server and its ISP
 - i. Content server Configuration(memory, speed, application load etc)
 - j. International end network hierarchy - 'B' end.

Therefore, it would be unfair to put the load of a QoS benchmark on just one network.

Please find below our comments on the specific parameters & their benchmarks:

Network latency

Latency of < 90 ms between consumer PC and IGSP gateway: Latency from customer PC is dependant on points a,b,c,d,e mentioned above. There can be a scenario where consumer is downloading a big file(s) and at that instant, tries to measure latency also. The number achieved by customer will not be correct number as latency has a relationship with the utilization of the link (between PC and ISP node). As the utilization of link increases, latency also increases.

The latency may be measured from the service providers' PoP to the IGSP. Service Provider may display the latency between the in city PoP and gateway node online i:e; within their own network. This can be given on a site available to consumers where they can see the performance of service provider's network.

International Latency < 300 ms: Same as above. It should be increased to <350 ms for optic fibres within the service providers network.

Bandwidth utilization / Throughput

- The dependency of link utilization on the availability of the content/application to be supplied from the other end is one of the factors to be considered here. The dependency is on the other end server, far end ISP link, far end ISP's upstream connectivity.
- In addition to that the demand factor also plays a role, the content generated by the customer has to be large enough for it to fully utilise the link provided by the Service Provider.

Technology - TCP/IP protocol, which increases or decreases the throughput based on end to end network path.

- Consumer PC configuration, operating system, application load etc. also play a vital role.

Due to above mentioned factors, it would not be possible to determine the true / exact utilization of a link therefore, this parameter and benchmark will not serve as measure of performance.

Uptime

Uptime should be measured initially on an annual basis. The exclusions as mentioned in 4.6 of the consultation paper should also be included while measuring the uptime. The following events may be excluded in the above calculation:

- (i) Network facility damage due to third parties.
- (ii) Damage to network facility due to force majeure.
- (iii) Deferment of service restoration request by customers.
- (iv) Faulty customer equipment.

Packet Loss

The treatment of packet loss as a measure is similar to Latency. The exclusions as suggested above should apply. In addition, consumer's peak load planning of traffic should also be an exclusion to measure packet loss. Packet losses also occur due to the inability of a customer to augment capacity of link or to foresee their demand for capacity.

Fault restoration time

Incidents under this should be clearly classified as service availability impacting incidents only. Incidents like slow speed; unable to open a particular site etc. should not be included under these incidents.

Static IP allocation

Static IP allocation is not a QoS measure/benchmark. All customers in session have a static IP. However, as recommended by the authority in their recommendations on 'Transition to IPv6' this may not be a mandatory criteria.

Billing Issues

Classifications like "explaining the bill" may not be included as billing issues for the SLAs. Only wrong billing should be included.

We would like to reiterate that most of the countries do not regulate the QoS of Broadband and this is left to the market forces in the sector. In Asia Pacific region, Broadband is known to be regulated only in Malaysia and Singapore where Broadband is introduced about a decade back.

Therefore, in India too, QoS of Broadband should be left to the market forces since it has been recently introduced and is in the initial phase.

RELIANCE INFOCOM LIMITED

Same as the comments of AUSPI.

Bharat Sanchar Nigam Limited (BSNL)

Para-wise comments are furnished as under:-

1. **Network latency & Packet loss:-** This parameter depends on end-to-end connectivity i.e. from the end user who is accessing the site to the server, from where the data is retrieved. The actual flow of data and as such latency & packet loss will not only vary from specific case to case i.e. sites accessed domestically which is near to the end user in terms of hop will have lower latency than site which may be located internationally & is served through multiple hops, but also depends on the loading, number of concurrent sessions and also the connectivity of the server to the Internet. All these things happen transparently at the back end with the variables changing at any instant based on the usage pattern, to which the service provider doesn't have much of the control.

While service provider can definitely guarantee the maximum latency that may take place in their network, it won't be possible for the reasons explained above to ensure guaranteed latency for global network.

2. **Bandwidth utilization / throughput;** Here also, the throughput from the customer end to the nearest node (CSLAM in case of Broadband) can be ensured to the subscribed bandwidth, as this segment is not shared. So, this segment has to be 100% of the subscriber bandwidth. Beyond DSLAM there is always a sharing of bandwidth and the effective throughput at any instant depends on the contention increases manifold in the International domain.

Contention ratio is a network design parameters and affects the cost of the network. Decision on this could be left to the service provider. The service

provider shall have some tools available in their network for measuring the actual throughput available to the end customer in their own network.

3. **Service Provision/ Activation time:** the issues highlighted in the paper, which may impact the service provision/ activation time are real practical issues. In addition, there are issues pertaining to low configuration of customer's PC like less RAM, Absence of Ethernet card in computer etc., which may delay the installation/ activation process

Service activation requires activities like line pre-qualification and conditioning, installation/ configuration of customer premise equipment, customer profile creation etc. As such, in normal cases, the service activation in cases where the phone line is already working shall be around 7 – 10 days.

4. **Service Availability / Uptime:** In this, as is done for Internet service, the availability / uptime of the nodes (DSLAM through which the customer is served) can be used as a benchmark. So, this parameter be defined as Node Availability/ Uptime instead of Service Availability / Uptime.

Telecom Users Group (India)

OK

MTNL

Benchmarks are a must to ensure QoS.

ISPAI

Network Latency: The Network Latency of 90 milli-second should be specified only for the local terrestrial network between the CPE and Edge Router of the broadband access service provider. As already mentioned, for satellite media, the minimum latency should be 750 milli-seconds within India itself. Just by comparing the geographical sizes of Singapore and India, it would be obvious that 90 ms limit for India would be inadequate.

For international segment, the latency would depend upon the respective routing and may go even to a couple of seconds if there are additional fiber and/or satellite connections overseas beyond the first point of peering overseas.

However, the proposed norms seem reasonable between the IGSP and the first point of peering overseas barring exceptions. As already mentioned, it is neither reasonable nor practical to commit an end-to-end latency commitment across the Internet.

Bandwidth utilization / throughput: The norm, if any, must be restricted within the local network on the lines of IDA in Singapore. In any case, It is not possible to measure throughput as a historic measure like 70% for 95 % of the time. It is not possible to establish whether the throughput less than 70% was due to non-usage and/or low usage. Any meaningful measurement must be done on an average basis across the subscriber base.

Service availability / uptime: As already mentioned, the responsibility of the respective service provider must be limited in this regard to the network elements under his control only.

Since these would also depend upon the QoS for the underlying leased lines, it would be unfair and unreasonable to lay down any norms in this regard beyond that.

We reiterate that it would be unreasonable to expect uptime of 99% when the largest leased line service provider does not commit any uptime at all.

Packet Loss: Since the packet loss does vary a lot on a variety of factors and most of them beyond broadband access service provider, it would be futile to mention any figure for network elements beyond the link between the CPE and Edge Router of the broadband access service provider edge router.

Fault Restoration Time: As mentioned earlier, these must be limited to the network elements directly under the control of the ISP offering broadband access.

Static IP allocation: This is not a QoS issue at all and is purely commercial in nature.

Billing performance: Billing related issues are common across the telecommunication sector and must be addressed accordingly rather than through any service specific norms.

Bharti Airtel Limited

Network Latency:- This should be measured up to NAP only. The measurement should be based on sample analysis and the method should be prescribed based on international practices.

Bandwidth Utilization/Throughput:- Bandwidth measurement can only be effectively measured by a downloaded server dedicated for this purpose.

Service Availability/Uptime:- This should be measured over a longer period of time-a quarter or a year. After 01.04.08, the parameter should be 95%.

There should be a provision for rebate of excess downtime on the same principles as voice telephony service. The measurement method should be standardized and prescribed based on international practices.

Packet Loss:- This should be measured up to NAP only. The measurement should be based on sample analysis and method should be prescribed based on International practices.

Fault restoration time:- The restoration time should be measured in business hours.

Following events should be excluded in the above calculation:-

- a) Network facility damage due to third parties, including last mile network owner
- b) Damage to network facility due to force majeure.
- c) Deferment of service restoration request by customers.
- d) Faulty or inaccessible customer equipment.
- e) Faulty customer infrastructure or internal wiring: and
- f) Fault due to other service providers:

Service Provision/activation:- Service levels similar to those for fault restoration should be followed. Following situations should be excluded from the service activation time benchmark;

- a) Wrong address/incomplete information.
- b) Damage to network facility due to force majeure.
- c) Damage to network facility by third party.
- d) Customer premises inaccessible.
- e) Customer canceling or deferring agreed appointment
- f) Customer premises internal wiring not ready at the committed or agreed time.

Ortel Communications Limited

In absence of input QoS higher level of service commitment is not practical. Secondly a segment of the customers are more sensitive to price than the service level. In this circumstance the proposed benchmark for service level/uptime on monthly basis should be 80% now and 90% w.e.f. 1st April, 2008

5. What should be the extent of rebate to be given to the customer for excessive downtime for service?

COAI

At this stage, at least for a period of one year, till the time sufficient experience and competition is built-up, we do not recommend any rebate and after one year the TRAI may review the QoS parameters after another round of consultations.

VOICE

One week rental for every 24 hrs or part down time.

VIDESH SANCHAR NIGAM LIMITED (VSNL)

Extent of rebate to be given to the customer for excessive downtime for services

For 8 hours of continuous downtime, VSNL offers a day's credit to the customer. Similar benchmark can be examined.

ORISSA CONSUMER ASSOCIATION

There should be no billing including rentals for the whole period of such downtime.

IQARA TELECOM IND PVT. LIMITED

Excessive downtime beyond 10% - the rebate can be proportionate to the downtime beyond 10%. This can either be given as service credit in terms of hours, MBs, days or the amount can be appropriately reduced in the billing.

CONSUMER PROTECTON ASSOCIATION

It should be fixed by TRAI as per damage to customer and loss of time.

ASSOCIATION OF UNIFIED TELECOM SERVICE PROVIDERS OF INDIA & M/S RELIANCE INFOCOMM:

At the current penetration levels of Broadband in India, this clause has very little meaning. These apply when the market is well penetrated and mature. Such rebates should not apply.

RELIANCE INFOCOM LIMITED

Same as the comments of AUSPI.

Telecom Users Group (India)

10%

MTNL

Rent rebate for quarter of a month in case of faults pending for 3 to 7 days & for full month in case fault persists beyond 7 days.

ISPAI

First and foremost, the ISP offering broadband access must get rebates from the upstream service providers. Only thereafter, the ISP should be asked to offer a rebate to the subscriber(s). Normally, rebates are computed on a pro rata basis subject to a maximum ceiling, the latter itself being a fraction of the monthly tariff.

Ortel Communications Ltd.:-

The provision of rebate in the monthly charges for the excessive downtime beyond the permissible limit is a welcome step and the extent of rebate to be given to the customer for excessive downtime of service should be mutually decided between the service provider and the customer.

6 Are these limits achievable?

COAI

To be reviewed after one year as suggested in various paragraphs above.

VOICE

These are achievable and essential for greater penetration of broadband

VIDESH SANCHAR NIGAM LIMITED (VSNL)

Achievability of limits

As pointed out earlier, the ability of the service providers to provide a high quality of service significantly depends upon the quality of the Last Mile deployed, and there is an urgent need for policy initiatives by the Authority and the Government to develop a solution for sustainable & cost effective last mile. Till such time, we believe that the proposed benchmark limits could be achieved, subject to the following exception:

- (i) Network facility damage due to third parties.
- (ii) Damage to network facility due to force majeure.
- (iii) Deferent of service restoration request by customers
- (iv) Faulty customer equipment
- (v) Impracticality of monitoring packet loss.

ORISSA CONSUMER ASSOCIATION

Yes they are achievable. These are being achieved by countries like Singapore & Malaysia and it should pose no difficulty in India with its gamut of technical talent.

IQARA TELECOM IND PVT. LIMITED

As given above

CONSUMER PROTECTON ASSOCIATION

Yes.

ASSOCIATION OF UNIFIED TELECOM SERVICE PROVIDERS OF INDIA & M/S RELIANCE INFOCOMM:

The proposed benchmark limits are not likely to be achievable in the present nascent phase of Broadband development. Measures are to be taken to encourage uptake of broadband to make it more viable.

1. The International latency for optic fiber should be increased to 350 ms within the service provider's network.
2. Service availability should be 95%.

RELIANCE INFOCOM LIMITED

Same as the comments of AUSPI.

Telecom Users Group (India)

Yes

MTNL

Yes, but with modifications suggested as above.

7. If not, what you suggest to be the limit?

COAI

We suggest that the industry should endeavor to work together in delivering the best possible results by way of actual data / experience and then align with the international practices in a period of at least one year and then come out with the parameters.

VOICE

No. Comments.

ORISSA CONSUMER ASSOCIATION

No comment at present.

IQARA TELECOM IND PVT. LIMITED

As given above

CONSUMER PROTECTON ASSOCIATION

No Comments

ASSOCIATION OF UNIFIED TELECOM SERVICE PROVIDERS OF INDIA & M/S RELIANCE INFOCOMM:

The proposed benchmark limits are not likely to be achievable in the present nascent phase of Broadband development. Measures are to be taken to encourage uptake of broadband to make it more viable.

1. The International latency for optic fiber should be increased to 350 ms within the service provider's network.
2. Service availability should be 95%.

RELIANCE INFOCOM LIMITED

Same as the comments of AUSPI.

Telecom Users Group (India)

Not applicable

8. Do you feel some more parameters to be specified ? If so, suggest the benchmarks?

COAI

As a start, we could follow the Quality of Service parameters as prescribed by the Authority. However, based on the feedback received from the service providers, after one year the Authority should review the aforementioned Quality of Service parameters after due consultation process with the service providers.

VOICE

No.

VIDESH SANCHAR NIGAM LIMITED (VSNL)

The proposed benchmarks exhaustively cover various parameters for ensuring quality service. We do not see the need for any additional parameters at this point of time.

ORISSA CONSUMER ASSOCIATION

None at present.

IQARA TELECOM IND PVT. LIMITED

The above parameters are adequate to measure the broadband services.

CONSUMER PROTECTION ASSOCIATION

No Comments

Telecom Users Group (India)

Special attention is required for maintaining the broadband services provided on DSL so that the up keeping time is maintained as per norms and standard.

MTNL

- i) Standards on fulfillment of Installation orders as given in Para 3.3 of Chapter -3 of consultation paper may be added in QoS parameter for BB.
- ii) Compliance for provisioning of additional services, change in tariff plan etc---- within 3 days of receipt of customer request.

ISPAI

It is imperative that the Authority lays down norms for QoS for leased lines first and enforce the same.