2nd February 2009

Shri SK Gupta
Advisor (CN)
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
Jawahar Lal Nehru Marg, (Old Minto Road),
New Delhi – 110002.

Sub: Consultation Paper on Bandwidth Required for ISPs for better quality and Improved Quality of Services

Dear Sir,

At the outset we welcome the initiative of the Authority in requesting inputs for the issues in this Consultation Paper.

We at Tata Teleservices are constantly endeavoring to promote customer user experience and Quality of Service. The ISP market is sufficiently competitive with over 130 ISP licensees operating in India. QoS for Internet services have been determined by market forces. Therefore, there is no immediate need to define contention ratio for retail products. Internet bandwidth required by enterprise users are typically acquired along with stringent and well defined service level agreements where in contention ratio, being one of the many QoS parameters, is decided and made available by the ISP based on application requirements.

Specifying a minimum contention ratio will greatly reduce the flexibility in offering competitive retail tariffs. Therefore, there is no immediate need to mandate contention ratio for Internet services.

Please find enclosed our response to the above Consultation Paper. We hope that our suggestions will merit your consideration.

Thanking you and assuring you of our best attention always.

Yours sincerely,

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

Encl: As above.

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Appendix .
Refers to Tata Telservices
Letter no Dated 02 Feb 09.

Comments from Tata Teleservices Limited on
TRAI Consultation Paper on
Bandwidth Required for ISPs
For Better Quality and Improved Quality of Services

Introduction. We wish to submit to the Authority that contention ratio is part of a specific product plan that service providers offer to their customers and it is possible that various service providers have different packages and even in a given segment like the Dial-up, 256 Kbps, 512 Kbps, etc, there can be large diversity in the plans. Similarly, leased line offerings carry their own SLAs and are monitored for adherence of performance. TTL completely believes in fully complying with publicized service offerings, and as a standard process we provision bandwidth that is fully complying with the type of offering (Dial up, Broadband 256 Kbps, 512 Kbps, etc) and rate plan. We have also provisioned a Bandwidth measurement facility on our website, using which our customers are able to verify the Bandwidth plans being in use. We feel that network planning issues are best left to the service providers as they directly influence the service providers own business case – not providing a QoS based service (which includes a complying contention ratio) will severely affect the service providers themselves.

We submit our comments on the Consultation Points as below:

3.1 In order to ensure sufficient bandwidth for good quality broadband service, should some "Thumb Rule" for maximum contention ration be fixed for dial up, broadband, high bandwidth services & leased line internet access? If so, what should be the values for different Internet services:

One basic concept is that an IP network has many aggregation points (or POPs), and therefore contention ratio is different on each leg. While the broadband definition of 256 Kbps, which was created in 2004, was a good starting point since we needed something to begin with, one can not at the same time expect that for each 256 Kbps customer on an ISP network, the ISP will provide 256 Kbps of connectivity all the way to the global internet network interconnection point. What happens is that the first POP, typically a local DSLAM, will backhaul into a metro area network (MAN), which will then backhaul into a regional network, which may then interconnect with NIXI, and for other traffic will backhaul to a national core backbone, which will eventually go to a (set of) gateways for carrying to the international internet interconnect point. This is just one sample architecture.

At each point of backhaul there is a contention ratio. So while in the MAN, we may have 1:50 for residential users, as per TRAI's international findings, we might have 1:100 at NIXI, and 1:200 for the national backbone, and 1:500 for the international interconnect. Network engineers justify this because not all traffic originated in the network will require the international interconnect point, and also as per queuing theory, with larger amounts of aggregation the resources required decreases slightly than if there as no aggregation and resource utilization were done in smaller parts.

Cont. 2...

Our recommendation is that defining one contention ratio is not enough – we can have 1:50 at the "POP" (as used in the broadband definition), but then have 1:n in other points, but still meet the regulation requirement.

The next is that for applications like VOD, IPTV, etc, examples used by TRAI to point out need for bandwidth, we may not actually need a contention ratio of 1:50. A good VOD / IPTV network actually does not use the internet bandwidth, but caches content in the MAN or at worst in the regional network, so that large amounts of bandwidth in the core network are not eaten up. Also, IPTV traffic is typically sent separately from the internet traffic channel. And this is also why service providers can offer IPTV today, but at the same time give only a 256 Kbps internet connection. In this situation, the Access Line Speed (definition page 8) is 2 – 8 Mbps, while the speed provisioned for internet access is 256 Kbps (though this does not guarantee the Actual or Average throughput would be that much).

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Therefore we observe that to offer paid IPTV services, the internet access contention ration may be irrelevant.

For accessing video clips, file sharing, video streaming from services other than those offered by the ISP, etc, one does indeed need high bandwidth good quality connectivity to the internet, and in this case that typically means the international internet interconnection point (not just the NIXI interconnection point). The question then becomes, should one regulate how much "internet" bandwidth an ISP has to dedicate per user? And how does one arrive at that number? The number certainly is not 1:20 or 1:50, since that could put our ISPs in India uncompetitive , or raise tariffs so high it would not make sense, or more likely just cause ISPs to find a way to circumvent the regulation. And if one uses statistics of traffic flow and queuing theory to arrive at a number today, that requirement may change 6 months from now as our internet user base and behavior continues to change. It would not be possible to define this parameter for any suitable length of time.

We feel that this issue is contentious and would needs more deliberations. Our recommendation is that the Contention Ratio should be left to the Service provider to specify as per the products plan for that service.

Cont. 3...

Services	Max. Contention Ratio for Home users	Max. Contention Ratio for Business users	Remarks
Dial Up	As per the product plan	As per the product plan	
Broad band	As per the product plan	As per the product plan	
High Bandwidth Services (like IPTV etc.)	As per the product plan	As per the product plan	
Leased Line	As per the product plan	As per the product plan	

3.2 Will defining contention ratio likely to impact prevailing Internet/Broadband packages to access Internet? Give your suggestions with justification?

Yes; defining a common contention ratio across various service plans is likely to impact prevailing broadband packages as an overall measure can affect the SLA based services. Also given the fact that high-bandwidth services like the IPTV, VoD, in the consumer space can be high on band width requirement, they could potentially adversely affect a Thumb Rule based overall contention ratio.

Cost of broadband services in India is much above the other developing countries. Broadband and Internet targets set forth in the Broadband Policy 2004 have not been met. Specifying contention ratio will drastically increase cost of retail broadband services further inhibiting uptake and proliferation of broadband services.

Access of Internet is being extended by the proliferation of high end mobile phones, PCMCIA data cards, USB modems and other convergence devices. Therefore Internet access is no more restricted to access on personal computers using conventional pipes such as ADSL and dial-up. A large base of users is now willing to accept slightly lower Quality of service in lieu of seamless coverage and mobile access. Specifying minimum level of contention ratio for Internet access through mobile devices, while desirable, may not be technically feasible in certain circumstances.

3.3 Any other suggestion to improve quality of Internet/ Broadband access to end users?

Transparent customer communication, coupled with customer education./ awareness should be promoted; this can address improvement of QoS of Internet / Broadband services.

Mechanism to guarantee and monitor key Quality of Service parameters like throughput, latency, etc are already in place through the Quality of Service for Broadband Regulation.

ISPs and UAS Licensees are regularly reporting QOS parameters quarterly enabling effective monitoring of QOS by the Authority. We strongly believe, the existing framework if working well and there is no pressing need to incorporate any additional parameters.

Perception of QOS is very subjective. Focus at present should be to catalyze uptake of Internet through affordable tariffs and relevant content.