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(A Govt. of India Enterprise)
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To,
The Secretary
TRAI,
MTNL Telephone Exchange Building
Jawahar Lal Nehru Marg, Minto Road,
New Delhi-110 029

{Kind Attention: Shri S. K. Gupta, Advisor(CN) TRAI, New Delhi}

Subject:- Comments of BSNL on consultation paper on Improving the effectiveness of NIXI.

The TRAI issued consultation paper No.16/2006 on 01.11.2006 on the subject “**Improvement in the effectiveness of the National Internet Exchange of India(NIXI)**” and asked the various stakeholder to comment on the issues mentioned at the Chapter No. 5 of the consultation paper. The BSNL’s comments are given in the annexure for your information and necessary action please.

(Sanjeev Banzal)
Jt.DDG(Regulation-I)

Improving the effectiveness of NIXI

Q5.1 What is the basic reason holding back effective utilization of the NIXI? In your views what actions are required to ensure all domestic traffic passes through NIXI?

Reply. Ineffective Utilization of NIXI is attributable to the following possible reasons:

- (1) All the routes of the ISPs are not announced towards NIXI.
- (2) Non segregation of the international and domestic traffic.

The requirement of passing all domestic traffic through the NIXI nodes should not be mandated and ISPs should be allowed to have a private peering arrangement as per the existing policy of NIXI.

Q5.2 Should all ISPs or their Up Stream providers be mandated to connect at NIXI? If so

5.2.1 Should minimum connection size, space requirement, power requirements etc. be also defined based on the slab of customer base of the ISP?

5.2.2 Will it increase interconnect cost with upstream provider?

5.2.3 Will there be any limitations when an ISP has multi-homing?

Reply: The connectivity to NIXI atleast at one location may be mandated for all major ISPs. Connectivity to other NIXI nodes may depend upon the actual requirement at that location. It may not be economical for the ISPs to connect at all locations.

5.2.1 Connectivity requirement for an ISP at different locations may vary and it is possible that the ISP may not need to put its router etc. at NIXI sites at all and connectivity may be extended directly through a leased line.

5.2.2 Not applicable in view of above.

5.2.3 No such limitation is observed. The downstream ISP may decide as to which ISP shall announce its routes to the NIXI node.

Q 5.3. Should ISPs connected to NIXI be mandated to announce all of their routes on NIXI? If so:

5.3.1 Should only regional traffic be announced on NIXI regional node?

5.3.2. How to handle situations where connecting ISPs have regional presence?

5.3.3 Whether announcing all routes at NIXI node can result in misuse of national backbone of Class A ISPs?

5.3.4 What are the alternatives and solutions?

Reply: It should be ensured that the bandwidth connectivity of ISPs to NIXI is adequate before making it mandatory requirement to announce all routes on NIXI. It has been observed that many of the ISPs are not having good connectivity with NIXI resulting in poor services to BSNL customers whenever the traffic passes through NIXI for such ISPs. To avoid customer

complaints many a times it becomes necessary to route the traffic through paths other than NIXI.

- 5.3.1 It should be left to the ISP to decide how to announce the routes at various nodes based on the traffic patterns. With the increase in the number of services and the backbone capacity, the definition of the regional traffic is becoming more and more indistinct.
- 5.3.2 In case of ISPs having regional presence, the upstream provider may announce all its routes to NIXI.
- 5.3.3 Does not appear to be a major issue.
- 5.3.4 No comments in view of above.

Q 5.4. Do you feel Interconnection of 4 nodes of NIXI is necessary? If so

- 5.4.1 **Whether NIXI will become a transit service provider thereby competing with the members, contrary to the role assigned to it?**
- 5.4.2 **Whether NIXI will require any licence from DoT as it will start carrying of traffic between two stations and distributing between ISPs?**
- 5.4.3 **Can links interconnecting NIXI nodes be misused by connecting ISPs to carry their traffic between two stations on NIXI backbone? If so, can it be prevented technically?**
- 5.4.4 **Since NIXI is an organization not for profit, how cost towards interconnecting lease line etc will be collected from the members?**
- 5.4.5 **Whether interconnection of NIXI nodes will increase NIXI popularity and effectiveness?**

Reply: BSNL is not in favour of the proposal for interconnection of all NIXI nodes (i.e. Chennai, Kolkata, Mumbai, and Noida) To carry the traffic between interconnected nodes, a robust network is required to be built up. BSNL already has such a robust backbone and building another backbone for interconnectivity of NIXI nodes will be a waste of resources. Instead, the traffic between the nodes may be carried on existing network of BSNL.

The apprehension that interconnection may be misused by ISPs may come true if proper network discipline is not observed by the participating ISPs and there is no vigilance mechanism in place.

Q5.5 Is there a need to establish NIXI nodes at all state capitals?

- 5.5.1 **Whether there will be adequate traffic?**
- 5.5.2 **What purpose will it serve if traffic is less?**
- 5.5.3 **What should be the basis to take such decisions?**

Reply: It will be a waste of precious resources to have NIXI in all the State Capitals as many of the states do not have much traffic. In addition for ISPs like BSNL it will not make sense to connect at all NIXI locations as numerous links to NIXI would have to be maintained increasing the operational and recurring costs. Establishment of NIXI nodes at a few location may however be considered after assessment of traffic in different regions based on the number of ISPs, customer base etc.

Q5.6 How segregation of domestic and international traffic can be done when a ISPs is peering as well as transiting the traffic of other ISP?

5.6.1 Can NIXI platform be misused for routing international traffic?

Reply A monitoring machinery needs to be set up to prevent any misuse of the NIXI platform by routing international traffic through it.

Q5.7 Is there a need to upgrade NIXI nodes to facilitate implementation of IP V6?

Reply: Although there appears to be no immediate requirement for the same, but upgrade to Ipv6 needs to be in the roadmap. Ipv6 support is an essential requirement in all the current procurements of network elements by BSNL.

5.8 Is there a need to define QoS for NIXI nodes? If so

5.8.1 What parameters need to define and how should it be monitored?

Reply: Yes please. Uptime and latency may be included as the QOS parameters. The complaint handling mechanism at NIXI should be strengthened such that complaints from different ISPs are promptly handled.

5.9 Should NIXI settlement formula be considered for modification to encourage Data center and WEB hosting in India? If so, give your suggestions.

Reply: The current settlement formula of 5:1 for Datacenter appears to be okay.

5.10 Any other suggestion, which you feel will increase the effectiveness of NIXI?

Reply: There should an audit at regular intervals for the billing being done by NIXI for settlement purpose.

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