

## **Response to TRAI's Consultation Paper (13/2006) on Improvement in the Effectiveness of NIXI**

**5.1 What is the basic reason holding back effective utilization of the NIXI? In your view what actions are required to ensure all domestic traffic passes through NIXI?**

- a. Present commercial rates ( x-y ) are leading to subsidized bandwidth for certain ISPs
- b. Insufficient pipe size to NIXI, leading to poor performance
- c. There is a need to agree upon QoS parameters for NIXI interconnects for enhanced customer experience.

**5.2 Should all ISPs or their Up stream providers be mandated to connect at NIXI? If So,**

No

**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?**

**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?**

The decision to announce at single point all routes or regional distributed routes can be left to ISP market dynamics as long as ISP announces all their content routes either at a single point or distributed. In other words, ISP's should be allowed to announce all his routes at locations of his choice.

The impact of this is also linked to the number of points the ISP connects to NIXI. In case ISP is connected at multi points, and is mandated to announce all his routes at all the interconnect points, the ISP's backbone network will be used for free ride of content.

#### **5.4 Do you feel Interconnection of 4 nodes of NIXI is necessary? If so**

No. By doing so, NIXI will become another ISP

##### **5.4.1 Whether NIXI will become a transit service provider thereby competing with its members, contrary to the role assigned to it?**

Yes

##### **5.4.2 Whether NIXI will require any Licence from DoT as it will start carrying of traffic between two stations and distributing between the ISPs?**

Yes

##### **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?**

Yes. Prevention can be achieved by applying filters on IP address basis but becomes very tedious to manage.

##### **5.4.4 Since NIXI is an organization not for profit, how cost towards interconnecting lease line etc will be collected from the members?**

Since it will be a non profit organization, cost has to be borne by members

##### **5.4.5 Whether interconnection of NIXI nodes will increase NIXI popularity and effectiveness.**

No. On the Contrary NIXI will be seen as another competing ISP.

#### **5.5 Is there a need to establish NIXI nodes at all state capitals?**

1. NIXI should be established at locations where there is sufficient traffic to be exchanged. If the ISPs of that locations feel that they need a common place to exchange traffic with each other, NIXI should open a node.
2. NIXI should also start accepting Downstream ISP routes from Upstream providers.
3. It should not be mandatory for the ISPs to interconnect such NIXI nodes as it will result in subsidized bandwidth being made available at node.

**5.5.1 Whether there will be adequate traffic?**

This should be a pre requisite while opening new node at any place.

**5.5.2 What purpose will it serve if traffic is less?**

Node should not be opened if traffic and the number of members are not adequate.

**5.5.3 What should be the basis to take such decisions?**

Traffic pattern for exchange, and number of service providers

**5.6 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?**

Can be safe guarded by ISP by accepting traffic only for its domestic network. Complication can arise for an ISP who has same AS number spread across multiple countries. Such an ISP will have to use IP address based filtering to prevent the misuse.

AS based peering should not be suggested at NIXI. All ISPs should indicate the prefixes as domestic in the prefix based method.

**5.7 Is there a need to upgrade NIXI nodes to facilitate implementation of IP V6?**

Yes.

**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?**

NIXI Switching infrastructure should be non-blocking and should not be a performance bottleneck. Also parameters - Latency, Packet Loss, Uptime and Utilization should be defined and monitored. Monitoring can be done by simple tools like MRTG.

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

The existing formula is favorable. NIXI should not appear as source of cheap bandwidth.

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

1. Billing and commercial settlement issues take more than 6 months to get resolved.
2. Service issues also take a lot of time to get resolved.
3. Service SLAs needs to be in place.
4. Major ISPs should be part of governing body of NIXI for proper administration.