MTNL's comments on Consultation paper on Improvement in the Effectiveness of National Internet Exchange of India (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?

Presently most of the ISPs have connected however the traffic exchange is still not reached the desired level. Reasons for this, primarily is the non participation of major ISPs who are International Bandwidth provider and also have large Hosed content. To ensure that all the domestic traffic is exchanged through NIXI, the following need to be considered:

(a) All the Service Providers and Upstream Service Providers should be mandated to connect to NIXI.
(b) A Connect Policy which can address the concerns of all the type of Service Providers should be formulated and mandated.
(c) NIXI should follow a different model where it can effectively build, operate and maintain the Internet connectivity/Backbone either through employing sufficient and trained technical staff or using an outsourced model.

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

All the Service Providers and Upstream Service Providers should be mandated to connect to NIXI.

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?

Minimum connection capacity can be prescribed in the policy, however various parameters can be considered for arriving at the optimum connectivity for a service provider. These parameters could be no. of customers of Internet Services, No. of customers of hosted web services, the total available bandwidth of the service provider etc. Also there could be a penalty in case any Service Provider is found operating contrary to the objective of policy.

5.2.2 Will it increase interconnect cost with upstream provider?

The Interconnect policy should be framed which results in reduced cost for the service providers. Presently many service providers are paying costs for International bandwidth even for domestic traffic as no separate charges for domestic internet traffic are on offer from International bandwidth providers.

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

Most Service Provider networks are multi-homed. A proper designed routing policy shall ensure desired exchange of traffic.

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

ISPs should announce all their local networks in order to ensure all domestic traffic is exchanged locally. However Service Providers with National Presence may announce the local addresses of a particular Region on the Regional NIXI Node.

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

This option shall be acceptable to Service Providers with National presence as otherwise the issue of National bandwidth costs shall arise.

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

The ISPs should be mandated to announcing their Regional routes at the local NIXI Node, however all the ISP routes should be announced in one or the other NIXI Node.

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

Announcing all Routes at one NIXI Node may result in use of National bandwidth of Class A ISPs.

5.3.4 What are the alternatives and solutions?

As suggested above.

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

Yes. If the NIXI Nodes are interconnected than NIXI shall be carrying National traffic for service providers. This shall increase the cost of operation for NIXI and also NIXI shall be competing with Service Providers. However this shall provide regional ISPs to share the traffic on domestic network therefore NIXI should progressively connect its Node.

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

As commented vide para 5.1 above to become effective service providers, NIXI shall have to compete with its Members and therefore shift from the existing 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 the ISPs.
No comments.

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?

This can be overcome by having appropriate charging plans based on the bandwidth provided for use, type of connectivity i.e. Regional or Inter-region etc.

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

The cost collection towards the interconnect leased line has no relation with the non-profit nature of the organization provided the cost so collected is invested for improvement of the connectivity/backbone and meeting measures to benefit the Member organization.

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

Yes. Provided it results in reduced costs.

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

Yes. The number of NIXI nodes can be increased based on the number of customers and number of Service providers in the city.

5.5.1 Whether there will be adequate traffic?

The Nodes should be increased only if the traffic justifies it.

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

The standard traffic routing techniques are available. Segregation of traffic may be possible using the routing announcements and by having a tiered traffic approach with different connectivity for domestic and International traffic. Depending on the type of connectivity and the fact whether NIXI node is available in the city or not, such exchange of domestic and International traffic can be planned.

5.6.1   Can NIXI platform be misused for routing international traffic?

This can be prevented and shall depend on the connecting members routing policy. No member shall allow use of its International bandwidth for carrying other traffic. Also to prevent members from willfully exchanging such traffic using NIXI platform, NIXI should monitor the routs being exchanged between the members.

5.7   Is there a need to upgrade NIXI nodes to facilitate implementation of IPv6?

Since connectivity provided by NIXI shall act as National (domestic) Internet backbone, it is advisable and appropriate that not only the connectivity provided by NIXI uses IPv6 backbone and Test Bed with the funding from other ISPs. However, backbone should be compatible with IPv4 networks also.

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

Yes. QoS parameters in terms of link utilization, packet loss and latency can be prescribed for connecting members as well as NIXI Node. This will help in maintaining proper connectivity by members at NIXI Node. However for achieving this, NIXI should own the Routers etc. for connectivity and the ISPs need not be required to provide their own equipment.

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

The objective of increasing domestic Internet traffic through the NIXI shall be met when Data Centre and Web hosting in India are encouraged and if this can be achieved through the settlement formula of NIXI, the same should be attempted.

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

NIXI has been set up to facilitate exchange of local Internet traffic with the primary objective that no domestic traffic exchange should happen using International bandwidth. There are only a few service providers with direct International connectivity and they should be made willing partners in NIXI. These Service Providers anticipate loss of revenue and are therefore not actively participating in NIXI. The policy should take care of this issue and then should be made mandatory. Penalty should also be built in case any domestic traffic is forwarded on International links.