TRAI Consultation Paper on "Improvement in the Effectiveness of NIXI"

CHAPTER 5 - ISSUES FOR CONSULTATION

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?

NIXI has done its job well in the country till date and provided a platform for internet exchange. The key expectation of customers is consistent and reliable connectivity at affordable prices. To some extent incumbents has been able to reach out to masses. But individual organization's efforts will not lead us to reach where we want to be.

All ISPs alongwith NIXI are putting efforts for mutual benefit to reach customers. What cable TV has done to expand the reach the availability of media content similarly internet services should reach to end subscriber on mass scale. Some of the support areas can be clear & supportive policies on 3G spectrum for USAL holders, WiMax spectrum availability, internet access through VSAT/DTH platform.

The main issue holding back NIXI effectiveness and utilization is
a) backhaul capacity from NIXI to the few of the ISPs are below than true traffic requirements and all ISP connected to NIXI are not announcing all the routes to NIXI.

b) To ensure that NIXI and internet community in India grows at desired pace the recommendation for separating domestic and international traffic should be provided. Domestic traffic will ensure the India centric contents are created and reached by end users for example eGovernance initiatives and private initiatives like Tea Board, e-Chuapal etc. Please note that it will be major change in the ISP backbone network thus ISPs would need substantial time and support from the authorities to do this..

c) Finalise the policy for `large' content providers to directly peer at NIXI nodes with clear definition of `large' and associated security, legal and licensing guidelines.
With many key content located to India, the policies and frameworks for operations of content service providers should be formalized in co-ordination with ISPs.

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

From Class B and C ISP perspective: Many of the class-C & Class-B ISPs it may not be viable for connecting to NIXI nodes due to associated long distance lease line cost. It should be left to ISPs decide on connecting to NIXI nodes.

From key content hosting providers perspective: As per QoS guidelines, ISPs has to guarantee QoS as laid by DoT, they have to connect to the major peering points so as to meet these QOS requirements.

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 size depends on various parameters as content location, application and user bandwidth requirements. Once the policy of announcing all routes from ISP is mandated then it will be effective. ISPs should be mandated to upgrade their bandwidth at 80% of the utilization level.

5.2.2 Will it increase interconnect cost with upstream provider?

No, It will not increase the interconnect cost with upstream as upstream anyway has to build up network for routing the traffic and thus invest in building the connectivity to the internet.

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

No, Not from the perspective of this discussion point., please refer to Pt 2 Class B and C ISP perspective.

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

Yes, ISP should be mandated to announce their routes on NIXI. Either they can announce it at all routes at a NXI POP or regional routes at regional NIXI POP.

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

ISPs need to ensure that they announce all the routes to NIXI. Either in centralized (all routes at a NIXI POP) or decentralized (regional routes to regional NIXI POPs) manner but ensure that all routes should be announced to NIXI.

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

Regional ISPs should announce its routes to the NIXI it is connecting to. Depending on its business requirement, ISP may peer at various, multiple NIXI POPs.

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

Yes, it may result in misuse of national backbone of class-A ISP if required flexibility (regional routes or all routes announcement at a NIXI nodes) is not there.
ISPs provide internet access to source (subscriber) so that subscriber can reach to the content (destination). The mode how they interconnect to NIXI requirement differs depending upon end subscriber geography and content location geography. Thus with choice available with ISP to peering for centralized or decentralized architecture, the problem can be avoided.

5.3.4 What are the alternatives and solutions?

Answered in response to 5.3.3

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

No

5.4.1 Whether NIXI will become a transit service provider thereby competing with its members, contrary to the role assigned to it?
Yes, NIXI will become transit service provider and will be competing with its members and thus loose it neutral stand.

5.4.2 Whether NIXI will require any license from DoT as it will start carrying of traffic between two stations and distributing between the ISPs?
It should be decided by DOT/government w.r.t. license requirement for NIXI is above mentioned scenario.

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, there is possibility of misuse of NIXI backbone for carrying the connecting ISP traffic. To prevent this, NIXI will need to invest in network management center supported by operation, planning team and do the exhaustive filtered routing.

5.4.4 Since NIXI is an organization not for profit, how cost towards interconnecting lease line etc will be collected from the members?
NIXI nodes should not be interconnected and there will not be any cost towards interconnecting lease lines.

5.4.5 Whether interconnection of NIXI nodes will increase NIXI popularity and effectiveness.
No.

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

No. It may not serve the purpose. Moreover are associated expenses on not only local peering but also monitoring facilities at all these locations

5.5.1 Whether there will be adequate traffic?
No, adequate traffic may not be there as there may be very few ISPs interested in peering at these nodes.

5.5.2 What purpose will it serve if traffic is less?
Traffic may be less at these nodes.

5.5.3 What should be the basis to take such decisions?
The basis of such decision should be willingness of various ISPs to join at these nodes.

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?

Using newer technologies as MPLS based VPN can be used for segregation on domestic & International traffic.

5.6.1 Can NIXI platform be misused for routing international traffic?
Misuse for routing international traffic should be checked with policy guidelines and tracking mechanisms. Separation of domestic and international traffic may help.

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

This may be taken up at appropriate time when the connecting ISPs are ready with IP V6 implementation/ plans.

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

Yes. QOS in terms of service parameters mean time to attend, repair, uptime should be addressed, it should be driven by regulatory body keeping interest of internet community of india.

5.8.1 What parameters need to define and how should it be monitored?
The parameters applicable for broadband service QOS should be applicable for NIXI as well because NIXI QOS will affect the ISP and thus end subscriber QOS.

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

Existing routing policy and measurement guidelines seems is fine at current operating environments and should be reviewed at regular intervals.

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

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