

Ref : Sify/TRAI/CN/NIXI/CP

15th November 2006

Telecom Regulatory Authority of India
A-2/14, Safdarjung Enclave
New Delhi - 110 029

Kind Attention **Advisor (CN)**

Registration No. **S/IS/AI/000259**

Subject **Sify's response on TRAI's Consultation Paper (No. 13/2006) on "Improvement in the Effectiveness of National Internet Exchange of India (NIXI) dated 1st November 2006**

Dear Sir,

Being the first private ISP to launch the Internet services in India almost 8 years back and having a pan-Indian presence, we at Sify have been rallying towards ensuring efficient and effective peering of Internet traffic in India. Our commitment to this is visible from the fact that we are one of the select ISPs who connected to all the four existing PoPs of NIXI and were, in fact, one of the first to do so despite the fact that in at least one location, the current level of traffic does not at all justify the local connectivity to NIXI at this point of time.

From this perspective, we welcome the initiative undertaken by TRAI to seek comments towards enhancing efficiency and effectiveness of NIXI. However, despite the fact that NIXI has already ventured into another activity, namely running the .IN ccTLD registry we have noticed that the instant consultation paper is silent on that aspect of activities.

Similarly, the earlier recommendation of the Authority on setting up NIR (National Internet Registry) for India is amiss from the scope of questions raised in the instant consultation paper.

We believe that considering the synergy across multiple activities and the fact that each of these operations may have significant impact on the overall income and expenditure of NIXI, the scope of instant consultation paper is rather limited and we would like to place on record that a more holistic consultation covering all the current and proposed activities under NIXI is desirable for a meaningful discussion.

All the same, we believe that neutrality, equity, inclusiveness and transparency are the key attributes of NIXI's institutional framework notwithstanding any particular activity (ies) that NIXI may undertake. Under no circumstances, should NIXI begin competing or even perceived to be competing against any of its member constituent(s) as a service provider (licensed or unlicensed) or for that matter, operating as an entity offering commercial services for web hosting. It is pertinent to mention herein that NIXI has no licensed obligations nor does it have to pay service tax for its activities.

We are enclosing responses to specific questions raised in the consultation paper and sincerely believe that the same would be found useful by the Authority.

Thanking you,

Yours truly,

For Sify Limited

Deepak Maheshwari
Vice President - Corporate Affairs

Encl: as above

Sify's response to specific Questions raised in TRAI's Consultation Paper (No. 13/2006) on "Improvement in the Effectiveness of National Internet Exchange of India (NIXI) dated 1st November 2006

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?

First and foremost, there is a need to have clarity about NIXI's role as the point of peering Internet traffic in the country. The underlying objective for setting up NIXI was to provide a neutral peering point for exchange of traffic across different Autonomous System Numbers (ASNs) within India.

Seen from this perspective, NIXI has evolved into an alternative for exchange of traffic across different service providers, albeit currently limited to ISP licensees only with the sole exception of NIC. At the same time, certain other categories of service providers have also been permitted to offer Internet services.

All the same, it is neither desirable nor pragmatic "to ensure [that] all domestic traffic passes through NIXI." Kindly allow us to elaborate:

- a) The phrase "all domestic traffic" may be interpreted to encompass even traffic between two subscribers of the same service provider - across different or even a single PoP (Point of Presence).
- b) Even if all traffic across different ASNs is exchanged at NIXI, it would do away with the possibility and the very concept of 'private peering' viz. direct link(s) between different ASNs on mutually agreed techno-commercial terms.
- c) It would be impractical to set up at least one NIXI PoPs in each of the 322 LDCAs (the smallest licensing geography for ISPs) to ensure NIXI PoP location close to one and all.
- d) There are many service providers (including most of the licensed ISPs) who do not even have their own IP addresses, leave alone ASN - the latter being a technical pre-requisite for any entity wishing to join NIXI.

- e) There is always possibility for creation and evolution of parallels to NIXI itself and this must be sustained. Other options need not be foreclosed due to the very presence of NIXI.

It would be worthwhile to create an **objective framework to measure the effectiveness of NIXI**, rather than dealing with this issue on a purely anecdotal and subjective manner.

Being purely a peering point, the incentive for a particular entity joining NIXI would increase exponentially as the number of peering entities increase. Thus, effectiveness of NIXI is dependent on the single most important factor i.e. the number of ISPs joining NIXI which is very nascent at this time. (Metcalfe's Law)

Effectiveness will also increase if other dominant content providers besides NIC, also connect to NIXI.

From the perspective of sustaining operation of any NIXI PoP, the total quantum of traffic exchanged should also keep growing.

5.2 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?

No entity should be mandated to connect to NIXI, even if such a service provider has its own ASN and further, even if it happens to have a PoP at one or more NIXI locations, leave aside those who have their PoPs at far away locations.

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?

Once an entity does join NIXI at a particular location, that entity must be mandated to announce all its LOCAL routes at the respective NIXI PoP. The effectiveness of NIXI is jeopardized by ISPs who deliberately do not advertising all their LOCAL routes.

It is pertinent to mention herein that 'regional routes' is a vague term and may result in other ISPs enjoying free ride on the intra-ISP backbone who has to announce regional routes. Firstly, one ISP may announce Gurgaon routes at Mumbai (or, Chandigarh) while another ISP may announce its Gurgaon routes at NOIDA! Secondly, an ISP having its PoP only at Ghaziabad may enjoy a free ride up to Srinagar if the other ISP is mandated to announce its regional routes (including Srinagar) at NOIDA!

Hence, the only pragmatic mandate should be to obligate every connecting entity to announce all their LOCAL ROUTES at the respective NIXI locations.

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 its members, contrary to the role assigned to it?

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?

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.

Notwithstanding that the Authority has held that ISPs are not part of the interconnection regime vide its order dated 9th April 2002 and vide its communication no. 1-2/2000-CN/Vol.II dated 15th October 2003 addressed to ISPAI, interconnection across different nodes of NIXI is neither desirable nor a pragmatic idea. Kindly allow us to elaborate:

- a) NIXI would effectively become a transit service provider thereby needing the requisite license(s) and would automatically, lose its neutrality.
- b) Regional ISPs would effectively gain a multi-location footprint; this would deter the investments by multi-location service providers in creating their own intra-ISP backbone and at the same time, in several cases breach the geographical restrictions inherent in the licensing framework.

5.5 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?

The real constraint for any entity in joining NIXI is the cost of domestic leased circuit (DLC) and not really, the port charges at NIXI. Despite two rounds of tariff rationalization by the Authority in 1999 and 2005 respectively, the DLC tariffs continue to be way above the underlying costs. We would urge the Authority to expeditiously review the DLC tariffs that became due for review in the first half of 2006 itself.

The only rationale for setting up any peering point is to ensure and validate its sustenance by way of quantum of traffic as well as the potential for the number of entities that would eventually connect and exchange traffic at such peering points.

The fact that part of the traffic being currently exchanged at a particular NIXI node may also be diverted to a new node, should also be factored in.

Another option would be to consider relocation of some NIXI node(s) where traffic is currently below sustenance level to more promising location(s).

Last but not the least, though there may be many entities having their PoPs in a particular state capital, that would not automatically imply that they have their own ASNs and even if they have, they would connect to NIXI at that particular location. In fact, in some cases an entity may choose to connect to NIXI only at a few locations and not at all the NIXI locations as is being done by some of the entities even today though NIXI PoPs are at just 4 locations.

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?

Segregation of domestic and international traffic is already being done by the largest provider of international transit and who also happens to be connected to NIXI nodes.

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

All the NIXI PoPs are already IPv6 ready. However, before announcement of IPv6 routes at NIXI, the processes and skill-set must be validated and suitably augmented, if so necessary since NIXI carries real-time mission critical traffic.

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?

Though NIXI is not a 'service provider' within the meaning of the Indian Telegraph Act, 1885 and/or the TRAI Act, 1997 the Authority may recommend suitable QoS norms for NIXI operations - including but not limited to - the factors and parameters specified in its recent regulation on QoS norms for broadband since the ultimate QoS for the subscribers is and would be impacted by the performance of NIXI.

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 settlement formula seems fine for the time being. However, the value of 'C' must be reworked in line with the reduction in DLC tariffs.

For any entity who is not a licensed service provider, the value of 'P' should be treated as '0' by default.

All the same, proper checks and balances are required to ensure that there is no financial incentive for any entity (connected to NIXI) engage or abet or connive sending undesired traffic to other entities by way of spam, etc.

Any entity having its own ASN should be allowed to connect to NIXI notwithstanding that such an entity may not be a 'service provider'. It is pertinent to mention herein that National Informatics Centre (NIC), a non-service provider entity is already connected to NIXI.

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

The physical infrastructure of NIXI does need a periodic review and suitable investment to cope up with the increasing traffic and number of connections.