



**IT for CHANGE**

*NGO in Special Consultative Status with United Nations' Economic and Social Council*

**Response of IT for Change, Bengaluru,  
to Telecommunication Regulatory Authority of India's (TRAI)  
Consultation Paper on ' Proliferation of Broadband through Public  
Wi-Fi Networks '**

***Question1 :Are there any regulatory issues, licensing restrictions or other factors that are hampering the growth of public Wi-Fi services in the country?***

The biggest issue hampering the growth of public Wi-Fi is lack of sufficient and cheap back-haul connectivity. India is a country with huge population density, and the demand for broadband from new users is high, this is partly owing to the availability of audio and video content through it. This means that there have to be a large number of Wi-Fi hubs serving limited number of people, and with strong backhaul connection. This is largely not the case presently, which is why most public (though not all) Wi-Fi initiatives show disappointing performance. As mentioned earlier, a really robust public Wi-Fi system will be based on a strong, cross country, ubiquitous optic fibre backhaul, which is open to all providers. This can be a public infrastructure which can be used by all providers or a private one, but with open access structure.

The second biggest issue is that once one finishes the free quotas (if any) provided by the public Wi-Fi, there are no easy ways to get paid access that is suited to Indian conditions, which has many kinds of users. Easy to use common payment gateways should be provided.

One of the biggest policy blind-spots in Indian policy and regulatory system is the lack of encouragement to and support for community owned networks. Even the NOFN or BharatNet, made from public funds, want to rely exclusively on private enterprise for the last mile. This is not going to work for most areas. It is well known that such infrastructure investments tend not to be profitable in its initial years. In these circumstances, as is also evident on the ground, in most places there will be no private provider willing to invest in the last mile over the BharatNet infrastructure. The latter would therefore continue to be greatly underutilized, while people are denied Internet

#393, 17<sup>th</sup> Main, Jayanagar 4<sup>th</sup> 'T' Block, Bangalore – 560 041, India

Tel.: 91 80 2665 4134, 2653 6890, Fax: +91804146 1055

[www.ITforChange.net](http://www.ITforChange.net)

connectivity, which should have had a transformative impact on various aspects of their lives. Even rich countries like the US have a very strong community networks movement, whereby local governments invest in the local networks, which then connect users through wired and wireless means, including Wi-Fi. An urgent policy shift is needed in India to encourage and support such community (which included local governments) owned networks, which is well supported by an optic fibre backhaul, and which should then also provide public Wi-Fi.

We also require a more liberal data sharing environment, whereby users and providers are able to pool and share data for public Wi-Fi systems.

***Question 2: What regulatory/licensing or policy measures are required to encourage the deployment of commercial models for ubiquitous city-wide Wi-Fi networks as well as expansion of Wi-Fi networks in remote or rural areas?***

Continuing from our response to Q1 above, it is important that smaller and local players be encouraged to provide connectivity, including through Wi-Fi hubs. The current policy and regulatory system focuses only on big players. Wired backhaul is a kind of natural monopoly, and should be seen as a public utility. It should be provided by the public sector and big players, which should then be available on open access basis to small players to retail it, including through Wi-Fi hotspots.

***Question 3: What measures are required to encourage interoperability between the Wi-Fi networks of different service providers, both within the country and internationally?***

Like the ATM model, even Wi-Fi Hub should have access to the best backhaul available at that point on equitable terms, regulated by TRAI. Every such hub in turn should enable customers of all providers to use a common portal to access the services. Allocation of revenues to the retailer, and different providers should be done by the common portal with a common entry/ payment system, which can be managed by a public agency.

***Question 4 : What measures are required to encourage interoperability between cellular and Wi-Fi networks?***

Wi-Fi networks do not offer a common interface to all providers whereby it is mostly not possible

to do an automatic handover from cellular to Wi-Fi networks. Developing a common interface, with open protocols, which can be pre-subscribed, as discussed earlier, would ensure seamless interoperability, which is very much required.

***Question 5 :Apart from frequency bands already recommended by TRAI to DoT, are there additional bands which need to be de-licensed in order to expedite the penetration of broadband using Wi-Fi technology?***

***Please provide international examples, if any, in support of your answer.***

As many frequency bands as possible should be de-licensed to enable easy and ubiquitous Wi-Fi possibilities.

***Question 6:Are there any challenges being faced in the login/authentication procedure for access to Wi-Fi hotspots? In what ways can the process be simplified to provide frictionless access to public Wi-Fi hotspots, for domestic users as well as foreign tourists?***

With domestic users, the biggest issues going beyond free quotas concerns payment related problems. Most payment options involve debit and credit cards. Most Indian do not have these cards, and some are hesitant to use them too often. What is required is to have common payment gateways that accept pre-paid cards (with personal codes) of all service providers.

With foreign tourists, the major issue is that they may often be carrying no phone with them and therefore cannot access Wi-Fi networks that ask for phone based OTPs, or do not have domestic SIM cards , and hence cannot receive OTP through SMS. Alternative means should be available of one time registration on the portal with some personal details, and using it to access public Wi-Fis at all places in India.

***Question 7:Are there any challenges being faced in making payments for access to Wi-Fi hotspots?***

***Please elaborate and suggest a payment arrangement which will offer frictionless and secured payment for the access of Wi-Fi services.***

As discussed above, there are many issues in the various payment for access models to Wi-Fi hotspots. What is required is a common payment gateway, as has been suggested in the consultation

paper, which also accepts means of payment that employ prepaid data cards of different providers.

***Question 8 :Is there a need to adopt a hub-based model along the lines suggested by the WBA, where a central third party AAA (Authentication, Authorization and Accounting) hub will facilitate interconnection, authentication and payments? Who should own and control the hub? Should the hub operator be subject to any regulations to ensure service standards, data protection, etc?***

This is a very good model and should be adopted on a compulsory basis for all public Wi-Fi hubs. It is best for a public agency to manage this hub so that there is no possibility of bias. It is however possible for private parties to operate the hub but with close regulatory supervision.

Here we may also mention that it is time that every citizen is provided a free quota of data. Also, key government and other public interest services (as identified by the regulator) should be free (even of the free data quota is consumed). A unified hub that provides interface for public Wi-Fi, managed by a public agency, will also be able to ensure these imperatives.

***Question 9 : Is there a need for ISPs/ the proposed hub operator to adopt the Unified Payment Interface (UPI) or other similar payment platforms for easy subscription of Wi-Fi access? Who should own and control such payment platforms? Please give full details in support of your answer.***

Yes, a Unified Payment Interface is very much needed. As said earlier about the ownership of the 'hub' in Q8, this payment platform is best owned by a public agency running the hub.

***Question 10: Is it feasible to have an architecture wherein a common grid can be created through which any small entity can become a data service provider and able to share its available data to any consumer or user?***

Yes, this should be explored. Not only every party should be able to share data into a common pool, every party should be able to buy data on wholesale basis (with regulation to ensure non-discrimination) to resell it to consumers.

***Question 11: What regulatory/licensing measures are required to develop such architecture? Is this a right time to allow such reselling of data to ensure affordable data tariff to public, ensure ubiquitous presence of Wi-Fi Network and allow innovation in the market?***

Yes, as said above, full open access policies should be enforced, and reselling of data by small businesses, and community networks, should be encouraged (and pro-actively supported).

***Question 12: What measures are required to promote hosting of data of community interest at local level to reduce cost of data to the consumers?***

Yes, this should be done. This very important purpose will also be best served when the Wi-Fi hubs are serviced in terms of the common gateways by a public agency. The same agency should cache important local data whereby people can access it at the Wi-Fi hub itself without using the backhaul pipe.

***Question 13 : Any other issue related to the matter of Consultation.***

It is timely that TRAI has been making many consultations on issues that are basic to a vibrant digital India, and which can transform India's social, economic and cultural life. It is however important to see various issues as interconnected. For instance, this consultation on public WiFi is connected to nationwide optic fibre infrastructure, open access policies, promotion of community networks, free data quota for all citizens, net neutrality, important digital services of public interest being provided free, and so on.

It is important to invert the top down centralised telecom model, and shift to a bottom up decentralised model as we move to an Internet-centred communication ecology. We need to treat internet connectivity as a public utility, which is guaranteed to all citizens. Backhaul is a natural monopoly, and public funds should be put into it (as being done through BharatNet), while at the same time private providers must be made to provide wholesale connectivity to small retailers on an open access model. Small community based businesses should be encouraged. In rural areas, and other areas which have low uptake of data services, communities and local governments should be encouraged to provide the last mile connectivity as well. It is such a robust basic connectivity infrastructure that alone can make a public Wi-Fi system in India really successful. Such local networks should also store local content, that can be circulated locally for free or with minimal charges.