

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

Yes. There are the factors hampering growth of the public Wi-Fi service in the country:

- a) As per DoT circular dated 11th feb 2016 only basic service providers can share their active network infrastructure with other TSPs. This permission is not extended to Internet Service Providers. This to a larger extent reduces the revenue opportunity listed in the Trai Consultation paper dated 13th july 2016 viz., Data offload on Wi-Fi networks.
- b) License fee applicable on other income including advertisement revenue
- c) Unauthorised service providers – these includes a number of cafes, hotels, restaurants etc., who extend internet services to their guests, customers. No license fee or taxes paid to the government by these service providers. Many of them even charge a premium and collect internet fee and these are not reported.
- d) Availability of internet backhaul and right of way at low / free of cost.

Q2. 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?

1. Permit ISPs also to share their active network infrastructure with other ISPs/ TSPs
2. Remove license fee on non – internet revenue
3. A standard and subsidized pricing for lease line connectivity for public wi-fi networks.
4. Quality of service – to be defined.
5. Spectrum free of cost / at subsidized rates for internet backhaul – only for public wi-fi services with minimum access speeds
6. For ubiquitous coverage it is important that the signal strength should be sufficient to penetrate indoors and the current power output does not enable indoor penetration of the WiFi signals. Hence it is not a viable business model to deploy wi-fi access points across all streets

(i.e.ubiquitously). Permitting a higher power output sufficient for indoor coverage and within permitted radiation limits

Q3. What measures are required to encourage interoperability between the Wi-Fi networks of different service providers, both within the country and internationally?

Greater clarity in regulations. Currently some DoT officials even object to inter-connectivity between two local ISPs i.e. ISPs who do not have international gateways. They refer to clause no.2.2 (x) of ISP license agreement for provision of Internet services.

Authentication of the international subscribers.

Network sharing by ISPs – including active network with international wi-fi operators.

Q4. What measures are required to encourage interoperability between cellular and Wi-Fi networks?

The inter connectivity between the ISPs and Cellular operators should be permitted for both data and voice. The pricing may be decided through commercial negotiations between the parties.

Q5. 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.

Q6. 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?

1. The login mechanism should be made standard and compulsory on all public wi-fi hotspots
2. The mobile number based authentication as permitted by the DoT circular dated 23/02/2009 is fine except that the temporary authentication should be defined as a period of one month, currently it is undefined.
3. For foreigners, should be given pre-printed coupon at the immigration counters / airports which would help authenticating the users with the passport number, names and their coupon code. This authentication should be made available to all operators. When the user connects to the Wi-Fi and identifies himself/herself as a foreign national, they should be re-directed to this central authentication server

Q7. 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.

Q8. 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?

only in case of foreign passport holders / where there is no local mobile number on which the user can be authenticated. Pls. refer point 6 above.

Q9. 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.

We do not think this is necessary.