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

Answer: It is important to note that the next billion coming online will face cost pressure as and when they adopt internet. The way policy allowed PCOs in earlier years, we need to make it possible from a regulatory perspective to enable Wi-Fi sharing. There are startups in India which are able to deploy shared Wi-Fi models as discussed in points 3.24, 3.25 and 3.26. These solutions cannot be deployed today as re-selling of data services is not allowed. Regulatory clarity at re-selling of data at individual level needs to be cleared. Additionally, security aspects need to be designed into the products at enterprise level (not individual level) – Aadhar based authentication OR post-paid teleco subscription based authentication OR computer-vision based identity verification need to be allowed for easy customer (end-user) experience.

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?

Answer: A unified exchange, e.g. based on WRIX, would be critical to success of Wi-Fi deployment. Mandating telecos to adopt certain solutions or offering at institutional level while allowing them the freewill to decide on pricing and offering. A Wifi plan/customer should be treated at par with a mobile/telephone customer. Allowing for inter-operability, mobility, and connectivity.

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

Answer: Security aspects need to be clearly defined plus central exchange.

4. 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?

Answer: Tech solutions have for longest time allowed corporate employees to use internet seamlessly as they traveled from one office to another. The technology

stack is time tested and available for B2C users to ensure frictionless access. Additionally, with OTP mandate around online transaction companies like Razorpay have designed solutions which meet regulatory guidelines but provide smooth user experience. Another startup like WiFire has done it for WiFi hotspots. In case of push back from established ISPs and Telecos – it is suggested that a Open Innovation be planned to ensure that Government and Regulatory Bodies like TRAI don't get limited by "standard solutions" given by enterprise firms. It is strongly suggested that TRAI have an Open Innovation challenge with likes of iSpirit, DIPP, NASSCOM, LetsVenture and TiE.

5. 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.

Answer: In the document, it has been mentioned that a a new platform based on UPI be created. This may not necessarily be needed given the reach that mobile and mobile wallets have today. Also, document notes high WiFi adoption at home.

We suggest two solutions here:
a. A WiFi plan bought for home should be portable – i.e. if user pays say Rs. 1000/- for 40 GB data then she should not be limited to her Home WiFi to consume this data. What if she could use the same plan at an airport? This would be truly seamless experience. Importantly, cost structure of setting up WiFi hotspots would be justified for ISPs and Telecos – given that they will be generate revenue.
b. A mobile based payment solution would be by far the easiest. This will ensure that the next billion will have a seamless experience – given that everyone already has experience in recharging their phones for calls or data. A simple OTP based solution would allow the user to add more devices with single account. We should view a single account per user – just like a Gmail or Hotmail account that we use at home/office, at airport/coffee shops, on mobile/laptop or on 3rd party devices (like friend's or company's machine)

6. 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?

Answer: It is an empathetic yes. Inter-operability, mobility and seamless connectivity should be the goal. WiFi should be treated just like a mobile phone. It could be a pre-paid or post-paid plan. Fixed or pay-on-the-go. On Airtel at your home or Hathway at your nearest coffee shop or RailTel on railway stations.

7. 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.

Answer: This may not necessarily be needed given the reach that mobile and mobile wallets have today. Also, document notes high WiFi adoption at home.

We suggest two solutions here:
a. A WiFi plan bought for home should be portable – i.e. if user pays say Rs. 1000/- for 40 GB data then she should not be limited to her Home WiFi to consume this data. What if she could use the same plan at an airport? This would be truly seamless experience. Importantly, cost structure of setting up WiFi hotspots would be justified for ISPs and Telecos – given that they will be generate revenue.
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8. 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?

Answer: Yes, technology already does exist. At enterprise and startup level both. Importantly, technology stack allows backward compatibility by changing the firmware without need to buy new hardware in new devices.

9. 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?

Answer: It is absolutely right time. Given that,
a) WiFi is cheaper than mobile
b) Consumption of data will only increase and will be a new cost; especially for the next billion
c) Investment in BharatNet would not be justified if we do not leverage it a village level and limit it only to panchayat
d) Cost cannot be barrier to entry if India is to become Information Economy

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