EBG FEDERATION

EBG FEDERATION RESPONSE TO TRAI CONSULTATION PAPER ON PROLIFERATION OF BROADBAND THROUGH PUBLIC WIFI NETWORKS

EBG Federation (EBG) was established on 11th March, 2015 as a Section 8 company under the Companies Act 2013 in order to ensure long term stability and clarity on its purpose as a not for profit organization offering support and advocacy for European businesses in India. Founded as the European Business Group (EBG), in 1997, as a joint initiative of the European Commission and the European Business Community in India, EBG has come to be recognized by the Indian Government and the European Commission as the industry advocacy group representing the interest of European companies in India.

EBG Federation is supported by the Delegation of the European Union to India and represents the 28 Member States of the European Union as well as accession countries and its partners in European Economic Area (EEA). The EU Ambassador is our Patron. Currently EBG has Chapters in Delhi, Mumbai, Bangalore and Chennai with approximately 170 companies as Members including a number of companies from the Telecom Sector. Mr. TV Ramachandran is currently the Chairman of the Telecom Sector Committee of the EBG.

The primary objective of EBG is to actively support growth in India-EU trade relations, become the most relevant advocate for European business in India and ensure that the needs of European business are well presented to policy and decision makers.

Preamble:
Wifi was traditionally a wireless indoor extension of an Access Service based on landline connectivity.

With the proliferation of Wifi to public spaces being promoted for rapid deployment of broadband, there will be a number of issues which arise.

The issues that need to be concentrated on and which we have elaborated on in the responses are as follows:

1. Right of way. Backhaul through Fibre for sufficient bandwidth will be essential for which RoW rules need to be made much more compatible to Operator requirements. Government should have a central policy on ROW and all states should be mandated to adopt the same. The laying of ducts should be encouraged/ subsidised, so that repeated digging can be avoided. The local body should maintain records of all underground cables/water and & electrical cable so that digging activity can be regulated to ensure least damage to other's cable while digging by one agency. Another option would be to provide wireless backhaul technology of E Band and V Band to carry data over wireless to the fibre node.

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2. Secondly, we also need to look at all wireless technologies available in the unlicensed spectrum such as LTE U (LTE in unlicensed spectrum based on 3GPP Rel. 10/11/12 and defined by the LTE-U forum) or LAA (Licensed-Assisted Access as defined by 3GPP release 13) to promote a healthy eco-system for promotion of wireless broadband.

3. A major hurdle in promotion of wifi is the ease of Authentication and this needs to be addressed. With the acceptance of Aadhar and recently introduced e-KYC recognised by DoT , the Aadhar identification number can become an authorised and authenticated identifier. Alternatively the requirement of KYC may be removed if Wifi services are availed by any existing mobile user, as they are already verified users.

4. Likewise ease of enrolment and payments needs to be ensured. A customer should be able to register himself/herself through a central platform using the EKYC Aadhar identification number and access the Wi-Fi service seamlessly across the ISPs in any part of the city or any State of India**.**

5. Roaming agreements/arrangements should be bilateral with a clearing house arrangement should be created as is available for Cellular Roaming or Number portability.

6. And finally a technology agnostic regulation should be put in place to give complete freedom to operators to choose a technology/interconnect model. Infrastructure sharing between VPN and Internet may be allowed where operators hold requisite license. Any innovation or entrepreneurial activity in this field should be encouraged under the umbrella of Section 4 of the Telegraph Act of 1885.

   The introduction of Public Wifi through Hotspots should be linked to a Licensed ISP/TSP with wired or wireless access, whether as a VNO or as a full fledged UL/UASL licensee or as an Associate of the ISP Licensee. An example of an Associate in India is BlueTown which has recently entered the Indian market for providing Rural Wifi in collaboration with BSNL who is the Licensed ISP.

Q1 Are there any regulatory issues, licensing restrictions or other factors that are hampering the growth of public Wi-Fi services in the country?

A1: One of the major issues that is faced is Right of Way. Right-of-Way to ISPs - Providing Right-of-way for installation of required equipment will also be a critical factor in the successful deployment of public Wi-Fi. The frequencies at which Wi-Fi services are provided are sufficiently high such that propagation through walls of buildings or over large areas is dramatically worse when compared to the 3G or 4G bands. There is thus a need for high densities of Access Points – especially in dense urban areas such

as those which characterize Indian cities and towns. These areas require significantly larger access points on the network to provide sufficient coverage. Providing an enabling policy by Central Government on Right-of-Way, which is required to be adopted by all States in this context becomes important as installation can be legally complicated, costly, and time-consuming. Today each Government body considers Right of Way as a revenue generating stream and tries to maximize its revenue from this exercise, while the grant of permission and restoration cost (including return of Bank Guarantee/restoration fees) remain the pain points for Operators. The laying of ducts should be encouraged/ subsidised, so that repeated digging can be avoided. Access to new building being built by realtors could be made mandatory, telecom being an essential service. Such a policy should be premised on permitting deployment of Wi-Fi infrastructure on government buildings free of cost or at very low cost. RoW should also include permission to use new bands, viz E Band which provides wireless back haul to the nearest fiber mode. With the introduction of GST regime, the movement of goods from one state to another (within the Company) will also be considered as a sale and operators will be required to pay GST on the same, unless special exemptions are carved out and central registration be allowed.

KYC requirement: The current ISP licensing process and the Know-Your-Customer (KYC) requirements in India curb innovation and flexibility in the business models of those seeking to deploy Wi-Fi access. For instance, the OTP-based verification process creates a bottleneck when SMS service is delayed through network congestion in public places like airports/ railway stations/markets or there is mobile coverage issue or in cases of foreign nationals who do not use Indian SIM cards. These types of regulatory requirements immediately create an obstacle to the use of public Wi-Fi. We have dealt with this in responses 7 & 8 in greater detail.

Usage of high capacity backhaul E-band (71-76 / 81-86 GHz) and V-band (57-64 GHz) may be explored for allocation to the telecom service providers to create a wireless backhaul for supporting further development of wireless Internet access.

Privacy & security concerns, lack of roaming framework between Wifi networks & difficulty in making payments for Wifi access are other logistical issues that are holding up adoption of Public Wifi.

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?

A2: Incentives need to be provided to ISPs and Wi-Fi operators, such as Right of Way permissions as well as IBS (In Building Solutions) and NBC (National Building Code) which need to be considered and studied in comparison to international best practices.

Operators need to have some measure of security for their infrastructure in public areas without recurring losses realised through theft, vandalism or negligence. Appropriate

measures for penalisation are required to be specified for telecom infra similar to the power sector where inadvertent manual disruption of network is also considered illegal. This applies to both urban and rural locations.

Delicensing of outdoor use of the 5150-5350 and 5725-5875 MHz Frequency ranges. It is not licensed for indoor and therefore will create complications in rural areas since buildings are much smaller than urban areas and there is much outdoor activity. Signal may carry outside the buildings which will cause legal issues later.

New bands such as E Band should be permitted to enable wireless backhaul to the nearest fiber node in many urban and rural locations. If Government delicense V band (60 GHz band) for the purpose of access and backhaul too, it would be easier to overcome the backhaul constraints in urban area and will also cater to the ever increasing data traffic by providing large number of short distance high capacity end links. In the Absence of such delicensed frequency bands for backhaul, one is forced to depend on the slow and expensive build-out of landline fiber networks, thereby delaying the march of broadband and also making it unaffordable.

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

A3: Some of the measures that could be taken up in this regard shall include:

a. Direct arrangement between ISPs to facilitate interoperability between different Wifi networks.
b. Wifi data sharing wherein the parent network allows you to roam in other user's network through a transparent system by which the roaming bills are paid only to the Home network provider who in turn compensates the visited network provider for the number of minutes/data used.
c. Interoperatibility including subscriber authentication, authorisation and billing should be based on mutual commercial agreements between the operators.

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

A4: Standardisation should be adopted to encourage interoperability between cellular and Wi-Fi networks. This standardisation can be implemented by operators to connect to each other on mutually agreed commercial arrangement to provide intra-operability.

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.

A5: Delicensing of outdoor use of the 5150-5350 and 5725-5875 MHz Frequency ranges may be done as mentioned in Ans 2**.**

In addition, as suggested in the CP and as seen in our response to Question No. 1 above, the Government should delicense the V band completely for access and backhaul purposes as this is the most suitable band to provide high capacity wireless end link connectivity in the dense urban areas.

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?

A6: We submit that the present SMS regime for KYC inhibits access to public Wi-Fi services by domestic users in areas where SMS traffic is delayed or where mobile coverage is missing and by foreign nationals including tourists who do not have Indian SIM cards and thus cannot receive SMS messages on Indian numbers.

A number of technologies have been proposed to unify and simply Wi-Fi roaming and access. Such technologies permit online sign-up, immediate account provisioning, secure registration, adding multiple devices, and the enforcement of operator-specific policies. The best solution for India may be EKYC via Aadhar.

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.

A7: Payment method should be totally user friendly for the subscriber. The use of Aadhar identification number may be made acceptable for authentication during login.

One of the possibilities of implementing a risk-free and friction-less mode of payment for Wi-Fi services is to develop a payment platform which would facilitate easy access to Wi-Fi services across ISPs and through any instrument of payment viz; credit cards, payment wallets, bank accounts etc. Such a platform should ideally offer the following facilities:

i. It should provide for registration of the ISPs on to the platform and also all types of payment agencies/instruments. **A customer should be able to register himself/herself on this platform using the EKYC Aaadhar identification number and access the Wi-Fi service seamlessly across the ISPs in any part of the city or any State of India.**

ii. This way the payment arrangement should be totally interoperable and agnostic to the payment instrument.

iii. A customer should be able to "pay as you use" so that s/he pays only for the amount and duration of data usage and not on the basis of already fixed data limits or duration.

iv. There should be complete traceability of access made by any customer so that all the security requirements are billed into the system to avoid any malpractices or security risks.

A central Payments Clearing House like those present for Roaming and Number Portability may be established independently or the Clearing Houses for the functions of Roaming and Number Portability may take up the incremental function of handling payments authentication for Foreign tourists whether they use Prepaid or Postpaid Services from their own country's Service Operator.

One of the possible modes that could be put to use to achieve this purpose is the Universal Payment Interface (UPI) of the National Payments Corporation of India (NPCI). A number of banks have already been registered in this system and it offers a safe payment option to make payments through the user's bank account, without in any way exposing the bank account. It is therefore possible for ISPs to register on this platform pursuant to which users can avail the services of ISPs by linking the payment to their bank accounts.

Billing and payment collection shall be the responsibility of the central/home service provider where the wifi operator is an associate affiliated with them and where wifi operator holds a standalone telecom license, billing and collection infrastructure would be self-maintained.

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?

A8: There is no need to adopt such an approach as it is not a practical solution. There are already established AAA hubs created over time by existing ISP's which may be used by Wifi Operators connected to the ISP's. Setting up a new Centralised Hub will unnecessarily be a duplication of effort and will take considerable time to upgrade enough to match the reliability of data that the existing ISP's would have created. India is already behind other countries on this front and creating new AAA hubs will further delay progress rather than facilitate.

Wifi Operators should ride on ISP AAA data for logins as well as payments where systems are well established. This would be to the satisfaction of Government, Carrier and Subscriber.

Furthermore, such centralised approaches unnecessarily centralize information raising innovation barriers, increase costs of compliance and represent a security target for hackers providing a single point of critical information storage. Instead, the Regulator may advise a model oriented at the standardization of AAA APIs which are to be implemented by identity providers (login providers) wishing to participate. Thereafter, ISPs can connect to each other on mutually agreed commercial arrangement to provide intra-operability of the payment instruments/ balance transfer etc.

For Foreign tourists the facility of a Clearing House may be created or the existing Clearing Houses for Roaming and Number portability may take up this incremental authentication operation.

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.

A9: Please refer Answer 7 & 8.

Wifi Operators should ride on ISP AAA data for logins as well as payments where systems are well established. This would be to the satisfaction of Government, Carrier and Subscriber.

Q10 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?

A10: As far as architecture is concerned, mesh network topology is increasingly being deployed and may be considered for the above mentioned integration. A mesh topology consists of multiple nodes that are wirelessly connected with one another, and can therefore be used to share data across a large area using the interconnected nodes as routers. This makes it possible to share an Internet connection across multiple devices that are connected to the mesh network. Mesh topologies are increasingly being adopted in dynamic environments, where central infrastructure is hard to implement and network redundancy is desired. Ninux in Italy; Freifunk in Germany, FunkFeuer in Austria; OpenWireless in Switzerland; and Guifi.net in Spain are examples of this initiative.

As our preamble suggests, such entity would have to be a licensed WLAN Operator or associated to a Licensed ISP. Standalone operator under Section 4 of the Indian Telegraph Act 1885 may not be permissible.

Q11 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?

A11: Healthy competition may be allowed to dictate innovation and customer preferences under the guidelines of Section 4 of the Indian Telegraph Act 1885.

Q12 What measures are required to promote hosting of data of community interest at local level to reduce cost of data to the consumers?

A12: Due to lower cost of Wifi delivery (lower data cost/MB) as compared to cellular networks , Wifi data costs are generally more affordable. Also Wifi networks can offer faster speeds compared to mobile data , allowing users to access more data intensive applications & content. Thus, Wifi networks offer scalable, affordable and versatile technology that can facilitate spread of Internet access across both rural & in urban areas. **The technology also permits integration of a server with high storage capacity with Wifi Hotspot equipment**.

As cost of such servers has reduced significantly and cost of storage and form factors of such devices are now very small , it should be possible to cache /download heavy and data of community interest and often seen content at the hotspots for easy browsing, even when backhaul connectivity is not there. This will help to drastically reduce the cost of content delivery to the customers.

Q13 Any other issue related to the matter of Consultation.

A13: NONE

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