

Annexure A

Idea Cellular Response to

TRAI Consultation Paper

On

“Proliferation of Broadband through Public Wi-Fi Networks”

Preamble:

Idea Cellular welcomes the opportunity to contribute to the consultation on “Proliferation of Broadband through Public Wi-Fi Networks”. Idea Cellular would also like to thank the Authority its interest in enabling the spread of Broadband in the country, since it recognizes the critical need for stimulation of broadband for benefit of the country.

Idea Cellular reiterates that that the Indian Data market is at a nascent stage of its evolution and Regulatory flexibility has to be available to all stakeholders – Telecom service providers, content and application providers to ensure massive uptake and usage of data. Cellular Operators, through their investments, robust network roll-outs and tariffing innovations have been important pillars of telecom growth journey and hence the Authority needs to ensure that these strengths are fully leveraged to attain broadband data growth. We would also like to submit that under the current licensing regime, the internet services in the country, through any of the available access technologies (Wi-Fi/Cellular/Wired) can be provided only by licensed TSPs/ISPs who have their own network that extends to provide last mile access.

The current consultation document on “Proliferation of Broadband through Public Wi-Fi Networks” seems to erroneously envisage a situation where Wi Fi can facilitate the spread of Internet access in rural and urban areas alike. In that context, it is pertinent to mention that Wi-Fi is only technologically developed primarily for hotspot coverage and as a capacity augmentation solution for delivery of broadband services and is thus not a technology platform for offering of commercial ubiquitous city wide and remote/rural area coverage networks as envisaged in the Consultation Paper. It is at the most a complementary technology with limited area hotspot applicability rather than cornerstone of broadband penetration in India. Thus, Cellular networks will continue to evolve and be the basis for laying the foundation for ubiquitous coverage and capacity for wireless based broadband, as against the vision being envisaged in the current consultation paper by the Authority.

In the above context, we have the following submissions:

A. Evolution of Wi-Fi Technology

1. The Wi-Fi technology was originally conceived to fulfil the requirement for short range wireless communication (just like other technologies such as Bluetooth) either directly between the devices or by creating a Wireless Local area network (WLAN) for personal or closed groups. The objective of the same was to facilitate the users to let their devices communicate with each other on a wireless medium instead of wired medium for the ease of deployment. Therefore, Wi-Fi technology is used over an unlicensed band on a very low power for providing short range or indoor communication to avoid interference between the various users using the same band.
2. Over time, Wi-Fi technology was also used for accessing internet as well (by connecting the Wireless access point to the internet gateway at a particular place) to serve the restricted group of users. Technology standards and eco-system development globally for Wi-Fi are based around such hotspot capacity augmentations for cellular networks. Wi Fi is also used by Enterprises and individuals in a closed environment for their device connectivity needs for intranet and access to internet through a common broadband pipe.
3. Wi-Fi is only a complementary technology with limited area applicability and can only be used for extending internet access (by creating hotspots) just like any other access technology viz. GSM, HSPA, LTE or any wired technology such as DSL.
4. **The purpose of assigning unlicensed bands for Wi-Fi was to enable communication between devices for indoor communication or over a short range and not on a city-wide basis.** Further, being based on unlicensed spectrum, such networks have repeatedly been found to be susceptible to interference thereby impacting QoS delivery over such networks that often get deployed in an uncontrolled environment. On the other hand, cellular networks have traditionally been conceived and deployed as Public Networks for offering voice and internet connectivity to the masses on a commercial scale on city-wide or LSA basis.
5. **Therefore, the notion of “Public Wi-Fi networks”, as borne out by the Consultation Document, is an incorrect assumption considering the evolution and usage of Wi-Fi technology.**

6. It is submitted that cellular networks are the only commercial public networks that can provide seamless city-wide or LSA wide wireless internet and broadband access and capacity.
7. At the most Wi-Fi technology can be used to create hotspots to offload the macro cellular network sites similar to small cells or in-building solutions. Cellular networks will continue to evolve and be the basis for laying the foundation for ubiquitous coverage and capacity for wireless based broadband.

B. Licensing Regime for Offering Internet Services

1. Under the current licensing regime, the internet services in the country, through any of the available access technologies (Wi-Fi/Cellular/Wired) can be provided only by licensed TSPs/ISPs who have their own network that extends to provide last mile access
2. Therefore, any entity which wants to provide internet access through Wi-Fi technology or any other technology to masses or end consumers on a commercial scale has to necessarily obtain a Unified License with Access service or ISP authorization. Needless to say, the said entity needs to also comply with the Licensing terms and conditions including quality of service, payment of license fee / spectrum usage charges / other levies, customer life-cycle management, security, usage data storage & retrieval and lawful interception.
3. The currently prevailing models of offering internet access through Wi-Fi technology are compliant to the above licensing conditions and display the following different kinds of arrangements:
 - a. Such Wi-Fi hotspots are created by licensed TSPs/ISPs at public places and the services are sold to the consumers through various payments options (online & voucher).
 - b. Such Wi-Fi hotspots are created by consumers at their home, work places or any other places for their own consumption or for sharing it with others on non-commercial terms.
 - c. Such Wi-Fi hotspots are created by commercial or non-commercial entities such as hotels, Malls, Cafes, etc. after subscribing to Internet services from licensed TSPs/ISPs. These

services are then either offered complementary or on a usage basis to a closed group of users (such as guests staying at hotels, etc.) but are not available for unrestricted public use. Under such a model, the entity deploying the Wi-Fi hotspot such as the hotel, Mall, etc. becomes the customer for TSP/ISP providing the connectivity.

4. Thus, only Licensed TSPs/ISPs having their own networks to extend access up to the last mile are allowed to provide Internet Access under the current Licensing Regime.

C. Challenges faced by Licensed Service Operators

1. In the Consultation Document, the Authority has commented on the relatively higher costs of delivery of internet services through Cellular networks at 23 paise per MB. In that context, it is important to highlight the following:
 - a. **High Costs of Spectrum Acquisition:** It is well acknowledged now that the licensed TSPs have acquired spectrum at a very high cost in the past auctions, primarily because of the constrained supply of licensed spectrum.
 - b. **Difficulties in obtaining Right of Way:** A reliable backhaul is a must have for setting up of the sites and infrastructure in the cellular networks. The same is either enabled via microwave links or by using a fiber network. Since the microwave links have a limited capacity, therefore using a fiber backhaul becomes inevitable in case of establishment of broadband network. However, because of the absence of a National Uniform policy on “Right of Way”, TSPs are forced to regularly pay exorbitant charges to various local bodies for getting right of way permissions towards laying of network. Further, there are too many restrictions and exorbitant charges imposed by State Governments and Municipalities for erecting cell-sites in non-commercial areas. Not only that, stringent conditions imposed by various civic authorities for erection of towers have made the procedure difficult and complicated. Clearances are required to be taken from multiple agencies such as advance clearance from resident welfare associations (RWAs) in case of residential areas, safety certificate, clearance from pollution control authorities and fire authorities, thereby leading to huge delays in implementation of solutions.

- c. **Burden of Regulatory levies:** High burden of Regulatory levies on licensed TSPs has further increased the financial challenge for TSPs.
2. In conclusion, it is submitted that the alleged high cost of provisioning services owes its origin to various government and regulatory levies including cost of acquiring the spectrum. Therefore, it is imperative that the spread of broadband be given a fillip through reduction of the burden of Regulatory Levies on licensed TSPs.

D. Payment options for Wi-Fi hotspots

1. As already submitted, the licensed TSPs/ISPs sell the Wi-Fi services through various payment solutions (coupons and online).
2. Further, the TSPs have invested heavily in building a robust distribution network that has been highly effective in the spread of telecom services. The consumers can easily access this wide retail network to buy Wi Fi services using the available payment options.
3. The prevailing payment solutions for Wi-Fi services have emerged as a result of the free play of market forces and are sufficient to meet the subscriber needs to access Wi-Fi services.
4. Adoption of these payment solutions and further innovation needs to be driven by market forces for the best solutions to evolve in future.
5. It is critical that the SPs have choice on the method(s) adopted by them, and hence there should not be any mandate in this regard

E. Unlicensed Band availability

1. It is recommended to release additional channels in 5.8GHz in line with global regulations of 14 Non overlapping channels. Currently India has only 2 non overlapping channels of 20MHz in 5.8GHz. (5.825-5.875). Additional channels to be allowed are 5.150-5.350 GHz and 5.725 – 5.825 which are currently allowed only for INDOOR usage.

2. It is suggested to study North America (FCC) and Europe (ETSI) spectrum allocations in 5GHz band.
3. Further, there is a need to increase the supply of licensed access spectrum. Until now, only around 114 MHz (average paired spectrum per circle) of spectrum has been made available to TSPs for access services in every service areas which needs to be augmented in line with the International best practices.
4. However, there is a need to ensure that the de-licensed spectrum is used judiciously and interference avoided.

Summary Submissions:

1. **Idea Cellular reiterates that that the Indian Data market is at a nascent stage of its evolution and Regulatory flexibility has to be available to all stakeholders – Telecom service providers, content and application providers to ensure massive uptake and usage of data**
2. **We believe that the notion of “Public Wi-Fi networks” is an incorrect assumption considering the evolution of Wi-Fi technology. Cellular networks are the only commercial public networks that can provide seamless city-wide or LSA wide wireless internet and broadband access and capacity.**
3. **Wi-Fi technology which works on unlicensed bands on low power can be used only for creating hotspots locally.**
4. **It is further re-iterated that Wi-Fi is technologically being developed as primarily hotspot coverage and capacity augmentation solution for broadband services delivery. Cellular networks will continue to evolve and be the basis for laying the foundation for ubiquitous coverage and capacity for wireless based broadband**
5. **Under the current licensing regime, “Public Wi-Fi Hotspots” can only be set-up by licensed TSPs/ISPs directly or by adopting access models that are consistent with the terms and conditions of license.**

6. It is recommended to release additional channels in 5.8GHz in line with global regulations of 14 Non overlapping channels. Currently India has only 2 non overlapping channels of 20MHz in 5.8GHz. (5.825-5.875). Additional channels to be allowed are 5.150-5.350 GHz and 5.725 – 5.825 which are currently allowed only for indoor usage.
7. In our view, the technical solutions available and implemented currently as well as their evolution roadmaps are sufficient. In that context, methods such as OTP based logins, etc. are sufficiently convenient for people to attach to the Wi-Fi network and the same may be continued.
8. The current payment options used (online & voucher) and additional options available in the market through PPIs are sufficient to meet the subscriber needs to access Wi-Fi services. We believe that the adoption of these and further innovation should be driven by market forces for the best solutions to evolve in future. Further, the SPs should be allowed to retain their freedom of choice on the payment method(s) from the alternatives available, and hence there should not be any regulatory mandate in this regard.

Considering our above submissions, below is our Issue wise response:

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

Idea Response:

We believe there are no regulatory and licensing restrictions that are impacting public Wi-Fi services in India. The Licenses TSPs / ISPs are already carrying out deployment of Public Hot spots as per business viability.

However, we would like to submit that there are multiple factors that are hampering deployment & growth of broadband services across all access technology platforms. Towards that end, we believe that facilitating policy decisions are required for the following:

- a. Enabling ease of acquisition of Right of Way and faster deployment of wireline connectivity infrastructure in the last mile to the associated wireless access base station/Access point/Wireline aggregation node.
- b. Facilitating acquisition, rentals, security and availability of 24x7 stable power at required locations for deployment of wireless access BTSs/APs for delivering broadband services.
- c. Facilitating access to buildings (Government, commercial & residential) to deploy communications infrastructure. It is well acknowledged that communication has now become the basic need of every one and hence necessary infrastructure to fulfill this requirement needs to be created in all planned and under-construction buildings, even in semi-urban/rural areas.

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?

Idea Response:

It is submitted that Wi-Fi access is not a technology platform for ubiquitous city-wide and remote/rural area coverage. It is based on low power usage and uses unlicensed spectrum which is susceptible to interference impacting QoS delivery over such networks which get deployed in uncontrolled environment.

Further, Technology standards and eco-system development globally for Wi-Fi are based around hotspot capacity augmentations for cellular networks. **Wi-Fi access needs to therefore be treated as a complementary technology with limited area applicability rather than as a cornerstone for enhancement of broadband penetration in India.**

We suggest that the focus for regulatory/licensing or policy measures needs to be on enabling spread of broadband through addressing deployment challenges and regulatory costs associated with mainstream technologies (wireless: 3G/4G, wireline: Copper/Fibre) with Wi-Fi as a complementary capacity augmentation medium in select areas based on its techno-commercial viability in that environment.

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

Idea Response:

We believe that there is no requirement for any regulatory interventions towards encouraging interoperability of Wi-Fi networks across SPs.

There are already options available and their evolution and adoption by TSPs/ISPs needs to be allowed through the free play of market forces.

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

Idea Response:

It is submitted that technology standards are already available with further roadmap developments being worked upon by global standards bodies & OEMs for interoperability and traffic management between Cellular networks and Wi-Fi hotspots. Thus there is no requirement for any additional measures in that respect.

It is further re-iterated that Wi-Fi is technologically being developed as primarily hotspot coverage and as a capacity augmentation solution for broadband services delivery. Cellular networks will thus continue to evolve and be the basis for laying the foundation for ubiquitous coverage and capacity for wireless based broadband.

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.

Idea Response:

It is recommended that release of additional channels in 5.8GHz be facilitated in line with global regulations of 14 Non overlapping channels. Currently, India only has 2 non-overlapping channels of 20MHz in 5.8GHz. (5.825-5.875). Additional channels that need to be allowed are 5.150-5.350 GHz and 5.725 – 5.825 which are currently allowed only for indoor usage.

Further, it would be worthwhile if the Regulator can examine the models adopted by North America (FCC) and Europe (ETSI) for spectrum allocations in 5GHz band.

Finally, we feel that there is an immediate need to increase the supply of licensed access spectrum. Until now, only around 114 MHz (average paired spectrum per circle) of spectrum has been made available to TSPs for access services in every service areas and the same needs to be augmented in line with the International best practices.

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?

Idea Response:

It is submitted that the current requirements or arrangements of OTP based logins for accessing Wi-Fi hotspots at public places have been formulated by DoT after discussion with Ministry of Home affairs.

In our view, the technical solutions available and implemented currently as well as their evolution roadmaps are sufficient. In that context, methods such as OTP based logins, etc. are sufficiently convenient for people to attach to the Wi-Fi network and hence the same may be continued - there is thus no need for the introduction of any new authentication mechanism for access to Wi-Fi services.

However, should the Authority still feel the need for any modification/s, it is suggested that the same be introduced after due consultations with the Ministry of Home Affairs so that the same conforms to the security framework needed for proper safety of the nation and its citizens.

Lastly, it is critical that the TSPs are allowed to retain their freedom of choice on the method(s) adopted from the alternatives recommended, and there is no regulatory mandate in that regard.

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.

Idea Response:

It is submitted that the current payment options used (online & voucher) and additional options available in the market through PPIs are sufficient to meet the subscriber needs to access Wi-Fi services.

We believe that the adoption of these payment options and further innovations should be driven through market forces for the best solutions to evolve in future.

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?

Idea Response:

It is submitted that the addition of a layer on the lines suggested in the question will only add to the complexity of the architecture, operations and associated costs apart from adding to the regulatory compliance. It is also likely to result in birth of concerns on maintenance of privacy and security of subscriber data along with competitive information.

As submitted above, the current methods of authentication such as OTP based method or photo ID method have been devised after consultation with Ministry of Home affairs and are sufficiently convenient for people to attach to the Wi-Fi network.

Further, It needs to be noted that telecom standards, products and services are continuously evolving and operators have an ongoing need to respond fast to stay competitive by bringing the best services to the market. Any mandated centralized approach has a drawback of stifling innovation, speed of evolution and therefore is not in the best interest of the consumer.

In view of the above submissions, adoption of such an approach is not at all recommended

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.

Idea Response:

It is submitted that there is no requirement for any kind of Regulatory intervention in the area of payment solutions for Wi-Fi service. In that context, it is requested that our responses to Q7 & Q8 may also please be referred to.

Further, we would like to reiterate that there is no merit in adopting any hub based model for facilitating spread of Wi-Fi services.

It is further submitted that the current payment options used (online & voucher) and additional options available in the market through PPIs are sufficient to meet the subscriber needs to access WiFi services. We believe that the adoption of these and further innovation should be driven by market forces for the best solutions to evolve in future

It is also noteworthy that the TSPs have already invested heavily in building a robust distribution network that has been highly effective in the spread of telecom services. The consumers can easily access this wide retail network to buy Wi Fi services using the available payment options.

Hence, there is no requirement for any kind of Regulatory intervention in the area of payment solutions for Wi-Fi service.

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?

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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?

Idea Response:

It is submitted that the current regulatory framework requires any data service provider to have an appropriate UL/ISP license. Any entity intending to become data service provider thus needs to acquire appropriate license and comply with its terms and conditions including quality of service, payment of license fee / spectrum usage charges / other levies, customer life-cycle management, security, usage data storage & retrieval and lawful interception.

Further, any such approach should also factor the impact on the exchequer revenues, as well as extension of equitable terms for provisioning consumer broadband services over licensed and unlicensed spectrum.

We would like to re-iterate here that Wi-Fi is technologically being developed as primarily hotspot coverage and capacity augmentation solution for broadband services delivery. Cellular networks will continue to evolve and be the basis for laying the foundation for ubiquitous coverage and capacity for wireless based broadband. Thus, the priority at this stage should only be to facilitate spread of broadband services by cellular operators through reduction of Regulatory Levies in Telecom Sector, facilitating quick and easy Right of Way and making more licensed spectrum available to TSPs at an optimum cost.

Lastly, any reselling of data can happen only through the VNO route, for which, the framework has already been established.

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

Idea Response:

This is already being done by TSPs and ISPs and is a process of continuous evolution. No further interventions are needed.

Q13. Any other issue related to the matter of Consultation.

Idea Response:

It is submitted that the framework for the consultation exercise should also focus on addressing core constraints that are inhibiting the deployment and proliferation of broadband in our country. Here it needs to be kept in consideration that the core element of ubiquitous wireless broadband coverage has to be 3GPP based access on licensed spectrum (3G/4G & beyond).

In that context, the consultation exercise should look at addressing issues connected with spread of both wireless and wire line broadband access, as growth of both are critical for a digital India. The key issues related to Right of Way, sufficient spectrum availability at an optimum cost, optimization of TSPs/ISPs compliance costs, etc. need to be addressed. It is to be noted that good quality high speed wireless access (cellular & Wi-Fi) will require a very high bandwidth connectivity wire line pipe (fiber) feeding the wireless access medium.

Finally, as submitted above, it is reiterated that there is no need for regulatory intervention and that the evolution of Wi-Fi needs to be left to the market forces. As is widely acknowledged, the Indian Telecom market has convincingly demonstrated the capability to incorporate innovations and define how businesses access consumers and how consumers choose desired services. Hence, the incubation and growth of all types of market and pricing innovations should allowed to be addressed by the market forces rather than muddy the waters with dos and don'ts.

Further, it needs to be kept in consideration that the TSPs understand the telecom ecosystem better than any other outside parties and have invested accordingly in sales & distribution efforts, marketing & promotions, customer service and spectrum to give users the best possible digital experience. They are also better equipped to understand consumers and market dynamics and have the capability to translate robust broadband proliferation plans to reality.

Lastly, we would like to submit that the TRAI's support in form of a joint representation along with the industry to the investor community, especially large domestic and foreign institutional investors and funds, and showing them the vision will help the industry raise the capital required to invest in growth of data services in India.

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