Cellular Operators Association of India

RSM/COAI/052
July 20, 2010

The Telecom Regulatory Authority of India
Mahanagar Door Sanchar Bhawan
Jawahar Lal Nehru Marg (Old Minto Road)
New Delhi-110002

Dear Sirs,

### TRAI Consultation Paper on National Broadband Plan

This is with reference to the TRAI Consultation Paper No. 09/2010 dated June 10, 2010 on 'National Broadband Plan'

In this regard please find enclosed our response for your kind perusal.

We hope that our views and submissions will merit the kind consideration and support of the Authority

Kind regards,

Sincerely yours,
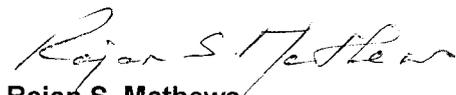
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COAI Comments on TRAI Consultation Paper on National Broadband Plan

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INTRODUCTION

a) COAI supports TRAI's vision to achieve accelerated, affordable & ubiquitous broadband access across the length and the breadth of the country. We believe that all citizens of India should have access to broadband and the transformative opportunities it offers. Broadband services allow individuals to access new career and educational opportunities. They help businesses reach new markets and improve efficiency and they enhance the government's capacity to deliver critical services.

b) The telecommunications sector in India has seen rapid progress in the last few years. A strong telecommunications sector promotes social well being and facilitates rapid economic development. We all are also aware that Broadband is the cornerstone in our efforts to usher in an Information society. Studies have shown that a 10% increase in mobile broadband penetration leads to a GDP increase of upto 1.4%.

c) It is now well recognized that broadband is a key enabler for inclusive growth, social equity and sustainable economic development. In fact, broadband represents an enormous opportunity to provide a platform for improving an individual's quality of life by providing increased opportunities for income generation and fostering innovation across all walks of life to our citizens. Availability of broadband services will attract new investment, create jobs and provide a larger more qualified labour pool, and increase productivity through infrastructure creation and access to new and improved services.

d) For urban India, broadband will offer the convenience of mobility with rich multimedia services, with streaming audio and video, high data transfer rates, faster video/data downloads, new services like video telephony, video on demand, mobile TV & other entertainment related services and personalized services, where content can be pushed to users.

e) Substantial additional benefits of broadband will come for the rural subscribers. Their requirements are much more. In fact, in some cases, more than in the case of the urban subscribers. Services like health care, education, e-governance, etc., which the urban subscribers take for granted, are of greater importance to them than to their urban counterparts. These can be delivered to them through Mobile Broadband services. Another important service that would be delivered to them with ease would be M-banking. This will bring a sea change in the lives of the rural and un-banked population of our country.

f) Provision of Broadband in rural and remote areas will also help in bridging the so-called "digital divide" and the widespread adoption of broadband in rural areas will have a multiplier effect over the long-term. It will help improve productivity in rural areas, help overcome the constraints of an inadequate transport infrastructure and overall improve the quality of life in rural areas. Given the significant economic and social benefits, expanding affordable access to broadband should become a high priority for Government.

g) **It is a known fact that wireless is the quickest and most efficient medium to provide internet services** in the access network. In India, as of Dec'09, the number of internet subscribers was 15mn, whereas the number of wireless subscribers who have subscribed to data were around 150 mn. We believe that the future growth of broadband in developing countries will see wider deployment with greater emphasis on wireless networks.

h) The 3G and BWA auctions have been recently concluded. It is expected that these services will bring in the much needed mobile broadband services to the country. However, with the rapid increase in technological developments, it is also essential to simultaneously keep preparing for the upcoming developments. It is necessary to provide high data rate services and quality to the broadband consumer in mobile environment as they have today in wired office or home environments. COAI is of the view that particularly in developing countries, mobile broadband technologies such as HSPA and LTE will do for broadband availability what GSM did for voice. These affordable technologies (including WCDMA) and services provided by them have led to an enormous installed base of global subscribers. **The large, mature 3G/ HSPA ecosystem of operators, vendors, and developers has sufficient scale to deliver economical mobile broadband.**

ISSUE WISE SUBMISSIONS

I.   BROADBAND – DEMAND & SUPPLY

5.1 What should be done to increase broadband demand?

a) Countries are beginning to approach broadband to develop both the supply of broadband (access to networks and services) and the demand for it (adoption by businesses, government, and households). **As a result, demand facilitation is thus becoming an important part of broadband development strategies and policies.**

   Demand facilitation matters because of supply rollout, i.e., constructing networks and providing services entails significant costs and risks for service providers. This is especially the case in rural and remote areas. **Hence, government needs to assist development by raising public awareness and stimulating demand.**

b) The demand of broadband in the country has been low because of penetration of broadband through fixed lines, which is dismally low. To achieve the above objectives, it is essential to **establish a holistic Broadband ecosystem** that includes the network (pipe) that support high-speed data communication and the applications (content) provided by these services.

c) Wireless is the preferred route to get the desired broadband penetration in the country and especially Mobile broadband will be the most desirable and preferred way to increase broadband penetration as it will enable faster roll-out. Wireless Investments in high-speed networks will improve the quality of service and promote the creation of even more complex or bandwidth-intensive applications. Adoption of market driven pricing for broadband services and applications would help in driving the demand for broadband.

High Speed networks and applications provided by them will increase demand

5.2 What, according to you, will improve the perceived utility of broadband among the masses?

a) Perceived utility lies in the amount of economic value that users are able to derive from the availability and use of broadband. It is also dependent on awareness levels and how broadband usage can enhance productivity, quality of life and benefit society.

b) Perceived utility for broadband can be increased by providing the suitable applications to the target customers so that they are able to utilize their benefits. In urban areas, the key driver is communications, social networking, entertainment and peer to peer information sharing. In more remote and rural areas, it is the ability to use it as a productivity enhancer like e-governance, e-health, e-education, web access, online commerce, banking and transactions, etc.

c) Moreover, **the availability of various applications on the move will attract more users by increasing the value of broadband**. Various stakeholders like service providers/ vendors have started investing heavily for the creation of application stores which allows users to browse and download applications with no or minimum costs, thereby increasing the accessibility and adoptability of broadband.

5.3 What measures should be taken to enhance the availability of useful applications for broadband?

5.4 How can broadband be made more consumer friendly especially to those having limited knowledge of English and computer?

a) It is essential to provide the right kind of application to the right customer. This is possible by developing more target customer oriented content rather than generalized for all segments of users. Thus, there is a need to encourage development of various VAS applications suited as for the utilization by the customers.

b) Moreover, in order to make broadband more consumer friendly, **there is a need to develop applications and content that is relevant, usable and understandable by the local people.**

c) To enable this, **Government supported initiatives** would be extremely important. Funding and financial support to entrepreneurs and service providers to help them generate and maintain localized, packaged content – in various regional languages would

be required. Similarly, initiatives to support creation and delivery of local entertainment solutions and programmes over broadband networks would work better by driving up interest and internet use and thus fueling broadband adoption.

d) Special subsidy schemes need to be devised for the above with appropriate subsidy share to all the stakeholders. Government needs to **clearly define the criteria and the terms of subsidy** to be in line with the economic theory so as to assure fair treatment for all stakeholders involved.

e) It is also important to change the perception amongst users, especially in rural areas that accessing internet is only associated with computers. The penetration of mobiles phones in the country is much higher than the penetration of PCs. Moreover, the use of a mobile phone is much easier than the PC. This will be an important factor in increasing the penetration of Mobile Broadband as the users would be more comfortable accessing broadband applications through a mobile phone than a PC. Moreover, the cost of a mobile phone today is much lesser than the PCs and hence has a wider usability than a PC even in the rural and remote areas. Thus, broadband services can easily be accessed through a simple Smartphone having at least a minimum feature of web browsing.

f) Since, provision of broadband services will require convergence of many services (for example - TV on mobile), it is essential for multiple branches of Government like IT, Broadcasting, Telecommunications, to converge in developing comprehensive regulatory policy. This will allow and foster the dynamic forces of technology and the market to drive innovation, value customer choice and economic development.

Right application for the right customer will enhance the utility of broadband.

5.5 Do you agree with projected broadband growth pattern and futuristic bandwidth requirements?

5.6 Do you agree that existing telecom infrastructure is inadequate to support broadband demand? If so what actions has to be taken to create an infrastructure capable to support futuristic broadband?

a) We broadly agree with the projected broadband growth pattern suggested by the Authority. With the spread of 3G & BWA services, we also believe that 100 million broadband connections could be achieved by 2014. COAI has already submitted its subscriber projections to the Authority in its earlier submissions, which were more or less in line with the forecasts by the DoT Spectrum Committee (May 2009) as well as the Authority. COAI had projected nearly 1 billion subscribers by 2013. Therefore, even if we take an estimated 10% of these subscribers to be broadband subscribers, it would be about 100 million subscribers.

b) In the coming years the demand for data speeds will keep increasing. There is no doubt that a strong backbone is one of the most critical part in the network to cater to high bandwidth applications. Based on the demand in future, it would be essential to augment the capacities in the existing backhaul and networks. For this, it is essential that uniform

guidelines and policies are in place, which will help in the installation of towers / laying of cables / optical fibers, etc.

c) The confluence of the Internet and mobile/wireless computing will accelerate the consumption of spectrum. With data applications able to consume far more bandwidth than voice and with an expected increasing number of mobile users engaging in ever more bandwidth intensive applications, it is only a matter of time before current commercial mobile radio spectrum will be exhausted.

d) The capacity of a wireless network (and therefore the network's ability to support wireless broadband services and applications) in any given location depends on spectral efficiency, as well as the amount of spectrum the operator has. Mobile network operators have implemented or considering various mechanisms to maximize capacity by managing bandwidth consumption in the absence of access to more licensed spectrum. **While engineering greater spectral efficiency and building more cell sites have increased some capacity, alone they are unlikely to address the expected magnitude of the demand. Long term, more spectrum is needed to enable mobile operators to keep pace with consumer demand for more and faster mobile broadband.**

e) Thus, it should be ensured that internationally harmonized spectrum bands through large contiguous blocks are made available in a time bound manner to allow operators to deploy such services.

For example, **allocation of 2.5-2.69 GHz band and 700 MHz band should be expedited** for mobile applications. The 700 MHz band, especially, will allow mobile operators to provide cost-effective and seamless broadband experience, allowing for improved rural coverage and better quality coverage in urban areas.

f) It is also essential that India has access to the "Global Village" and adopts international standards. Moreover, the Government should also form a national body which would participate and influence the global standardization process. India being the second largest wireless market in the world and also the fastest growing, needs to be at the forefront of international standardization.

The need of the hour is to ensure that spectrum for wireless broadband technologies should be allocated to service providers on priority basis in a transparent and affordable manner to cater to future broadband demand.

II.   NATIONAL BROADBAND NETWORK

5.7 What network topology do you perceive to support high speed broadband using evolving wireless technologies?

5.8 What actions are required to ensure optimal utilization of existing copper network used to provide wireline telephone connections?
5.9 Do you see prominent role for fibre based technologies in access network in providing high speed broadband in next 5 years? What should be done to encourage such optical fibre to facilitate high speed broadband penetration?

5.10 What changes do you perceive in existing licensing and regulatory framework to encourage Cable TV operators to upgrade their networks to provide broadband?

5.11 Is non-availability of optical fibre from districts/cities to villages one of the bottlenecks for effective backhaul connectivity and impacts roll out of broadband services in rural areas?

5.12 If so, is there a need to create national optical fibre network extending upto villages?

5.13 In order to create National optical fibre core network extending upto villages, do you think a specialized agency can leverage on various government schemes as discussed in para B?

5.14 Among the various options discussed in Para 3.35 to 3.37, what framework do you suggest for National Fibre Agency for creating optical fibre network extending upto village level and why?

5.15 What precautions should be taken while planning and executing such optical fibre network extending upto villages so that such networks can be used as national resource in future? What is suitable time frame to rollout such project?

a) We support the development of a robust pan-India National Broadband network in the long-term, however would like it to be technology neutral. We believe that it is important for the Authority to leverage and harness all available technologies to achieve the national broadband objectives in the most expeditious and effective manner. Hence, the focus should not only be on a particular media, but all available technologies should be leveraged for building up such a national broadband backbone.

b) We also believe that for this purpose, public assets such as the National Internet Backbone (NIB) and the others in the public sector (BSNL, MTNL, PGCIL, RAILTEL & GAIL, etc.) should also be utilized. It should be made sure that sharing of these assets is done on a non-discriminatory manner and a cost-based approach is followed.

c) The already existing wireless infrastructure should also be leveraged. World over, wireless broadband technologies have been identified as the via media to overcome the hurdles faced by wireline. In India too, mobile operators, have established huge wireless infrastructure in rural areas. Further, with the recent 3G and BWA auctions, there is a

strong case of leveraging this wireless infrastructure for provisioning of national broadband services. Not only will this reduce roll-out time but will also rationalize the CAPEX requirement. Potential of wireless technologies need to be exploited for the increasing the broadband penetration. For this, issues related to spectrum policy needs to be addressed urgently.

> **Development of a robust pan-India National Broadband network should be technology neutral.**

III.   REGULATORY CHALLENGES AND FUTURE APPROACH

5.16 Is there a need to define fixed and mobile broadband separately? If yes, what should be important considerations for finalizing new definitions?

5.17 Is present broadband definition too conservative to support bandwidth intensive applications? If so, what should be the minimum speed of broadband connection?

a) It has to be well recognized that broadband definitions are not static, and are required to improve over time. Depending on the type of media used and the kind of applications provided, the definition will keep varying. In fact, it will keep increasing over time due to technology improvements and the demand of higher data speeds in future.

b) We should also keep in mind that **demand for broadband is derived from the demand for the services that it offers.** The market for residential services may be assumed to be different from that of commercial services in terms of critical attributes (speed, price, etc.) and in terms of elasticity of demand. Therefore, there is a possibility, that there would be certain category of users who may not require very high speed applications.

c) Moreover, as already noted by the Authority, in the wireless scenario, we also need to take into consideration the fact that the speed will depend on no. of factors like -
   i.   The no. of users in a cell. When there are more users in a cell, the speed to each user would be lower compared to a scenario where there are few users in the same cell.
   ii. Design of the network
   iii. Location of the subscriber

d) Thus, we would like to suggest a minimum speed of 512 kbps for broadband connection. But the same shall be reviewed at a later stage depending upon demand, price, penetration, spectrum etc.

> **The minimum speed of broadband to be 512 kbps**

5.18 What specific steps do you feel will ease grant of speedy ROW permission and ensure availability of ROW at affordable cost?

a) The requirement for rollout of backhaul fibre networks has increased the importance of Rights of Way (RoW). Large part of the cost of deploying fibre networks is in form of RoW and exorbitant levies are being imposed by various municipalities. In other cases, operators have to approach multiple agencies for obtaining RoW clearance, which not only delays the rollout plans of the service providers but also increases the cost. This exorbitant RoW charges are impacting the business plans of the telecommunication/ infrastructure service providers.

b) The situation is worsening as many municipalities have recently started imposing additional levies based on their perception that telecom being hugely profitable business. Also state governments have started levying exorbitant charges not commensurate with restoration charges of the particular area, which are often arbitrary. The imposition of such additional exorbitant RoW levies would create additional burden for the telecom service providers and delay the expansion of networks especially in the rural areas and augmentation of capacities in the urban areas.

c) We believe that the implementation of the following steps will ease grant of speedy and affordable RoW:

- There is a need to have **appropriate policies in place** for ensuring access to RoW at reasonable prices and preferably at no charge to facilitate mobile service providers to offer affordable mobile telecom services to the public.

- **The RoW to all operators should be available on restoration basis** or any other thing connected with or related to any work undertaken for laying of cable, otherwise it may not be economically viable to roll-out new telecom services.

- **Expeditious approvals for RoW clearances** to all service providers are critical for timely implementation of telecom networks. The Central/ State Government / Local bodies / Ministry of Surface Transport etc. should take necessary steps to facilitate the same.

**The RoW permissions should be granted "ON PRIORITY"
in a time bound manner
& at an affordable cost.**

5.19 Does the broadband sector lack competition? If so, how can competition be enhanced in broadband sector?

a) The broadband sector did not witness enough competition till date due to provisioning of broadband services only by fixed media. Competition in the sector will automatically be increased with the introduction of wireless broadband through 3G & BWA technologies. Implementation of these services is already on the anvil and once the private operators start providing these services, the sector will automatically witness competition.

Competition to increase with the introduction of wireless broadband

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5.20 Do you think high broadband usage charge is hindrance in growth of broadband? If yes, what steps do you suggest to make it more affordable?

5.21 Do you think simple and flat monthly broadband tariff plans will enhance broadband acceptability and usage?

5.22 Should broadband tariff be regulated in view of low competition in this sector as present?

5.23 What should be the basis for calculation of tariff for broadband, if it is to be regulated?

a) We would like to very strongly submit that there is **no need to regulate the broadband tariffs** and should be left to market forces. As stated above, the competition in the sector would increase once the Mobile Broadband services are started by the private service providers. This would lead to introduction of innovative tariff plans. In case, non-market based approach/ Government mandated programme is to be followed then adequate Government subsidy should be provided.

b) Flat fee tariff plans would be available in the market, however, we believe that it would not be appropriate to suggest only a flat/ unlimited tariff plan, due to following reasons-

- There would be significant number of first time users who would be experiencing Broadband and that too from a Mobile. Initially the demand of such subscribers would be very limited and they would not require unlimited download. Similarly, different segments of users would have different requirements and they would like to choose a tariff plan suiting their demands. By offering one flat fee plan, these customers would be deprived of the various innovative plans that could be offered to them.

- Moreover, as against the wireline scenario, giving access to a user in case of wireless for unlimited download would mean dedicating a particular chunk of spectrum to that user exclusively, which could have been given to other users.

NO need to regulate the broadband tariffs

5.24 How can utilization of International Internet bandwidth be made more efficient in present situation?

5.25 How can use of domestic and international internet bandwidth be segregated? Will it have direct impact on broadband affordability? If so, quantify the likely impact.

5.26 What steps should be taken to bring down the cost of international internet bandwidth in India?

5.27 How can competition be enhanced in the International bandwidth sector?

a) Currently, most of the content is hosted outside India and hence there is very high usage of International internet bandwidth. The major cost of delivering Internet today is linked to the high International bandwidth prices. Nearly 70% of the cost for delivering broadband connectivity and Internet access is due to the high cost of International bandwidth.

b) Therefore, it is suggested that more and more content should be brought to India, which will bring down the cost of content and will also improve the utilization efficiency. Government should devise schemes to enhance domestic content thereby reducing dependency on International Internet bandwidth requirement.

5.28 QoS of broadband, availability of bandwidth, adherence to given contention ratio, affordability, availability and spread are some intricately linked parameters. In your opinion what should be done to ensure good quality broadband to subscribers?

5.29 Do you think that bad quality of broadband connection is impacting the performance of bandwidth hungry applications and hence crippling the broadband growth? If so, please suggest remedial actions.

5.30 Is there a need to define new/redefine existing quality of service parameters considering future bandwidth hungry applications, time sensitivity of applications and user expectation? What should be such parameters including their suggestive value and should such parameters be mandated?

a) The parameters for QoS of broadband are already defined by the Authority and we believe that the QoS of broadband should be assessed on the same. **As far as review of the parameters is concerned, we believe that the same can be done after some time (say, two years of 3G/ BWA operations in our country).**

5.31 What measures do you propose to make Customer Premises Equipment affordable for common masses? Elaborate your reply giving various options.

a) Even though the cost of handsets has fallen significantly, the rural households may still perceive mobile handsets or access devices to be expensive. There is thus a need to further bring down the cost of these devices through innovative schemes.

b) **USOF should extend support towards development of low cost or ultra-low cost handsets**, especially targeted towards rural masses.

c) It has been a long standing view of the industry that the bundling of handsets should be encouraged and **the receipts from sale of handsets, accessories, etc. should not be included in AGR**. This coupled with incentives towards development of low cost handsets could go a long way in enhancing rural penetration.

d) Tax relief in terms of custom duty, import duty should be considered in order to reduce the cost of CPE imported in the country.

5.32 What measures are required to encourage development of content in Indian vernacular languages?

a) In order to ensure that rural population gets the real benefits from the provision of mobile service, it is important to have content and various applications in local language which the rural masses can understand and use, e.g., the application software could largely be menu driven and graphic based in order to overcome the issue of illiteracy The operators though are creating/ providing the regional content, there is a need for more applications/ value added services to be created, which we are sure will be created with large bandwidths available.

b) **Incentives from USOF should be given to application developers/ content providers/ handset vendors** to work together towards developing the mobile content and applications in the regional languages. As stated above, Government needs to **clearly define the criteria and the terms of subsidy** so as to assure fair treatment for all stakeholders involved.

5.33 Do you perceive need for any regulatory or licensing change to boost broadband penetration?

5.34 Are there any specific competition and market related issues that are hindering growth of broadband?

a) There is a need to leverage & build upon the DoT Committee Report on Rural Telephony. The Authority's recommendations on rural telephony have already been considered by a Committee set up in DoT under the chairmanship of Joint Secretary (T). The Committee has submitted a report with a number of forward looking proposal for delivering broadband connectivity to rural India, which includes:

- Devise special subsidy schemes for wireless broadband, fiber based back haul, use of alternate energy sources, broadband applications & services, technology development, etc
- Grant substantial incentives to operators who roll out network faster than specified timelines
- Devise attractive schemes for rural broadband.

- Devise scheme for providing subsidy for laying OFC network to all Village Panchayats to be shared by various operators for backhaul purposes.
- Subsidize microwave/wireless/VSAT based backhaul wherever feasible, for effective and quick roll out of services.
- Development of area specific local content to address the local and immediate needs of the people
- Devise schemes for rural broadband connections in government run schools, primary health centers etc.
- DoT to frame a National Telecom Infrastructure Policy to speed up deployment of infrastructure in rural areas by laying down guidelines for RoW, land acquisition, availability of power supply etc. desirable to make this policy into "National Telecom Infrastructure Act" or appropriate changes in Indian Telegraph Act which will be binding on state governments.
- USO should devise scheme to provide subsidy to service providers who deploy alternate energy sources in rural network.

b) It is relevant to note that rolling out broadband infrastructure itself is an expensive proposition and a subsidy or support from the USO fund would go a long way in helping achieve the desired penetration levels. Given below are a few other important issues that need to be dealt with for provisioning of broadband to the rural areas, which need to be considered by the Authority and the Government:

i. Availability of Power Supply

- **Availability of uninterrupted power supply is of paramount importance to ensure quality service in mobile telecommunications.** Availability of power on a reliable basis is a very big problem, especially in the rural areas and the same hampers the spread of service to rural areas.

- In spite of the fact that mobile telecommunications has emerged as a critical public utility service, power supply to mobile telecommunications is not accorded status for 'priority feeders' by the various electricity supply bodies since there is no policy in this respect. Thus, **it is suggested that there should be a suitable policy for provisioning of power supply to service providers at subsidized rates instead of commercial rates.**

- Keeping in mind the lack of power supply in rural areas, Special support from USOF for power supply to BTS's and BSC's, may kindly be considered. USOF should evolve a mechanism to provide subsidy for diesel used for running sites in rural areas.

ii. Use of Non Conventional Energy Sources

- It is suggested that the **USO subsidy should also cover use of non conventional energy sources such as solar power, bio-fuels, wind power, etc.** This is because the power infrastructure in the country is extremely inadequate and non-availability of stable and continuous power supply could actually negate all other investments and efforts made to provide connectivity in rural India.

- Some of our members are already in the process of carrying out trials on some non -conventional energy sources. It is submitted that their efforts and initiatives in this field may be encouraged through the USO Fund.

- The Government should evolve a scheme of subsidy per site for operators using non-conventional energy.

    iii. <u>Provision of back haul</u>

- In order to meet the desired growth objective especially, in the rural areas, **provision of backhaul is very critical.**

- The cost of backhaul connectivity should be funded from USOF. USOF can fix the benchmark rate per HOP for providing back haul connectivity by Microwave. In the case of fibre connectivity benchmark rate per km can be fixed. This rate should include the expenses for Right Of Way also.

c) **Creation of Broadband Fund**

While the Authority does envisage the use of USO support for meeting broadband objectives, **we would further like to suggest that a special Broadband Fund may be set up to specifically meet the national broadband objectives of the Government.**

In this context, we would like to suggest that a percentage of the proceeds, say at least 20-30% from the recent 3G and BWA auctions may be earmarked for the Broadband Fund. The Government has earned far more from the recent auctions than was originally anticipated and thus it would be both desirable as well as appropriate that at least a part of the funds received from auction of spectrum for broadband are channeled back into the sector for achieving the broadband objectives. Even in the future, whenever spectrum is auctioned for broadband usage, a part of earnings from those auctions should be transferred to the National Broadband Fund to support national level broadband activities.

Support from USO Fund for provisioning of broadband to the rural areas

Proceeds from the auctions should be used to fund the plan to support national level Broadband activities

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5.35 What other fiscal/non-fiscal measures should be considered to boost broadband penetration?

a) The telecom sector in India faces multiple levies and duties which hamper expansion of affordable service. Presently the telecom industry is subject to licence fees including

universal service obligation fees, spectrum usage charge and microwave charges, Service tax.

b) Besides the above levies, the state governments also levy additional taxes such as Octroi, VAT, stamp duty, entry tax and levies on towers which further add to the cost of expansion of service.

c) The total of all the above levies on telecom industry in India works out to around 30% of their total revenues, which is one of the highest in the world.

d) So as to enable achievement of penetration of affordable service to rural areas, **it is important to rationalize and reduce the burden of levies on the sector** – otherwise even the rural subscriber has to bear the burden of these levies.

e) There should be no spectrum charge as spectrum for broadband applications is acquired through market mechanism.

f) Since service providers are rapidly expanding to rural areas, there exits a strong case for the Government, to progressively reduce the USO levy. Reduction in the above stated levies will significantly enhance the affordability of service to the masses.

g) Countries with high penetration of broadband users such as South Korea, Japan and Canada have all implemented conscious policies for the growth of broadband in their countries.

These policies have included growth enablers such as price reductions for the use of infrastructure, government's setting of strict annual broadband penetration targets, content and e-commerce development incentives and lowering of the price and tax barriers on the broadband terminal equipment. The resultant growth and high penetration of broadband has contributed significantly to the social and economic standing of these countries.

Various levies and duties on the telecom sector to be brought down

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