

TELECOM REGULATORY AUTHORITY OF INDIA

**GIST OF COMMENTS RECEIVED FROM
STAKEHOLDERS**

ON

**CONSULTATION PAPER
(NO.17/2006 ISSUED ON 29TH NOVEMBER, 2006)**

ON

“INFRASTRUCTURE SHARING”

5TH JANUARY 2007

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ISSUES FOR CONSULTATION

1. Is there a need to mandate or promote passive infrastructure sharing through policy intervention?

COAI

In the last few years, India has witnessed an exponential growth in mobile subscribers and subscriber additions are currently taking place at over 6 million subscribers every month. However, this aggressive growth is at present limited to the urban and semi urban areas and the vast population in the rural areas is still to receive and enjoy the benefits of mobile connectivity. There is thus a pressing need to expand the service to far-flung and rural areas of the country which are still not adequately covered. As the Authority is aware, the provision of service in rural areas will entail huge costs. Creation of infrastructure is thus the need of the hour. Further, it is important to encourage passive infrastructure sharing because of the following reasons:

- i) Creation of cost effective Infrastructure** - Telecom being a very capital intensive industry, the capital costs required for expansion of service to the far-flung areas are very formidable and these cannot be met from the revenues presently being generated by service providers.
- ii) Optimal utilization of Resources** - Further, in a country like India, where the resources are limited, **replication of costly infrastructure will result in wastage of capital resources**. Infrastructure sharing thus assumes crucial importance, not only to achieve optimum utilization of infrastructure, but also facilitate cost effective rollout of service.
- iii) Quality of Service** – Infrastructure sharing will help in improvement of Quality of Service as it will help in reduction of ‘dark spots’ where at present the existing service providers do not have coverage or cell sites because of various constraints.
- iv) Aesthetically appealing skyline** – Infrastructure sharing will help in avoiding undue proliferation of multiple cell sites / cellular towers, especially in the urban areas, and will thereby reduce visual obtrusions which mar the urban skyline.

In view of the above it is adequately evident that there is a need to encourage and promote infrastructure sharing through policy intervention and through suitable financial and other incentives.

However, Infrastructure sharing should NOT be mandated except in such cases in which Critical locations are involved. Critical Locations, for

example, could be Lutyens Bungalow Zone (LBZ), Cantonment areas, Central Government and State Government office buildings, Designated Forest/ Green Belt areas and Government Residential colonies, etc., where installation of cell sites by individual operators is either difficult or is not permissible due to lack of policy/ security / aesthetic concerns

AUSPI

AUSPI is of the view that there is a case for promoting infrastructure sharing. However, we feel there is no necessity of mandating or any policy intervention with respect to the infrastructure in urban areas. However, in rural / underdeveloped areas and critical infrastructure areas, there would be need of mandating & also of policy intervention. In view of the restrictive features of infrastructure sharing, it should be left to the operators to work among themselves for sharing of the passive infrastructure.

BSNL

As far as the policy intervention for the passive infrastructure sharing is concerned, it is already in place and almost every operator has taken it in a positive way. The operators are going ahead in this direction in the right earnest. The stand of the Government on the issue is very clear and certain. Therefore, BSNL and the private operators are moving forward in passive infrastructure sharing.

A policy paper which defines and explains the possibility of sharing and the resulting win-win situation for all namely operators, consumers, industry and Government should be brought in. Also there can be monitoring and data collection to show as to how much sharing has accrued and to what extent such sharing has benefited the operators. This may be a good way to promote and encourage the sharing of passive infrastructure.

There is no need to mandate the passive infrastructure sharing but it should be promoted.

BPL MOBILE COMM.LTD

While infrastructure sharing should be encouraged, it should be voluntary between various operators and not made mandatory except in geographical areas like LBZ and Cantonment areas of New Delhi, main Business Districts of metros, sensitive or restricted areas etc. where it may be technically, logically or even environmentally difficult for all service providers to have their independent towers etc. or the critical infrastructure is in short supply is prohibitively expensive and time consuming to build.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

In our view, there is no specific mandate required through policy intervention except in the form of policy incentives as we have argued above. We also believe that adequate incentives need to be made available to the IPs so that IPs are the nodal players in the infrastructure sharing industry, based on the rationales of neutrality and business efficiencies as explained by us above.

BHARTI AIRTEL LTD

In the last few years, India has witnessed exponential growth of mobile subscribers in the Country. It is a well-known fact that the next growth of mobile subscribers will come from rural/semi-urban areas, which require creation of huge infrastructure. This in effect means huge Capex and Opex for the operators. In case, each operator creates parallel infrastructure, it will certainly result into colossal wastage of national resources. While, existing Licence Conditions allow passive infrastructure sharing among service providers, however, it has not helped actually translating it into infrastructure sharing to the desirable extent.

In the Consultation Paper, Telecom Regulatory Authority of India (the Regulator) has noted that only about 25% sites/tower are shared for passive infrastructure today. These sites are shared among private service providers and there is hardly any infrastructure sharing between the Incumbent Operator and Private Service Providers.

In order to give a big boost to infrastructure sharing, **it is now essential that the policy framework is created, which encourage the Infrastructure Sharing.** This would help faster rollout at lesser Capex and Opex.

QUIPO TELECOM INFRASTRUCTURE LIMITED

The increasing concern from the citizen & the civil authorities on deteriorating skyline in urban areas and the serious effort to prevent mushrooming of towers are some of the critical environmental factor for promoting passive infrastructure sharing. Further, the huge capital required for creating infrastructure, especially in economically less attractive rural areas, is also an important factor for Telecom Operators to share infrastructures.

Seeing the current market trends, there is no need to mandate such sharing of passive infrastructure. However, the Govt. can provide impetus in terms of Regulatory & Statutory framework promoting sharing infrastructure.

SPICE COMMUNICATON LTD

Infrastructure Sharing should be mandatory for critical sites, defence areas, government buildings, forest areas, rural areas to the extent of around 50%. Sharing is critical from cost effectiveness, optimal utilization of resources towards meeting customers expectations / TRAI's guidelines.

VSNL

- a. Mandatory infrastructure sharing should be applied only for the following:
 - i. Infrastructure created with public funds or with subsidy support, say from the USO Fund
 - ii. Critical Infrastructure (defined as places where acquiring sites and resources are difficult)
- b. In cases where sharing of infrastructure by the operators enables achievement of any important national objective such as increasing rural teledensity and/or broadband density, operators should be encouraged to share infrastructure with other operators. In this regard, project MOST being undertaken by the Government is certainly a step in the right direction.

TATA TELESERVICES LTD

As mentioned earlier:

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 - i. Infrastructure created with public funds or with subsidy support, say from the USO Fund
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- b. In cases where sharing of infrastructure by the operators enables achievement of any important national objective such as increasing rural teledensity, operators should be encouraged to share infrastructure with other operators. In this regard, project MOST being undertaken by the Government is certainly a step in the right direction.

GTL INFRASTRUCTURE LTD

Yes. Though the market forces are promoting passive infrastructure sharing and some momentum on the same is gathered, a policy intervention will create a level playing field for the IPs. The regulation should create a mandatory sharing requirement similar to the zoning regulation in the USA. The regulation should enforce sharing of existing tower and discourage building captive towers

RELIANCE COMMUNICATIONS LTD

The mobile market is already vigorously competitive and there is strong reason to believe that the infrastructure sharing will only serve to further stimulate mobile market competition. The existing licensing conditions permit infrastructure sharing on commercial terms.

We would like to highlight that, although competitive market forces have led to the emergence of passive infrastructure sharing amongst service providers and projects like MOST are a result of that, but large scale infrastructure sharing has still not picked up. Successfully negotiated commercial arrangements for the sharing of passive infrastructure are ideal in the competitive market. However in terms of infrastructure availability, the Indian market is still dominated by single incumbent operator. The unbalanced negotiating power between the incumbent and other private operators is resulting into unreasonable demands for sharing of infrastructure.

The Authority has correctly noted that mutual sharing of infrastructure is not getting popular. Hence we feel that passive infrastructure sharing should be mandated at least for three service providers. However it may not be possible to share existing infrastructure to the extent of three service providers due to various technical reasons. Hence we propose that all infrastructure set up beyond a cut off date specified by the Authority should be mandated for sharing for at least three service providers. However, the commercial arrangements for sharing may be left to mutual agreements between the service providers. In order to promote infrastructure sharing, the Authority may prescribe a CAP on the cost of sharing as well as a time frame. An incentive scheme may also be evolved to encourage sharing of infrastructure by more than three service providers. The incentive can be such that higher the number of service providers sharing the infrastructure, higher would be the incentive to the infrastructure/telecom service provider. This incentive can flow from the USO fund, which should be made available for all areas Urban and Rural. The Authority may like to draw from the learnings of Rural Electrification Scheme of Government of India for infrastructure.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

“Maximum good for maximum number of people” should be the principle on which the TRAI may choose to advice DOT on the Mandatory Sharing of Passive Infrastructure.

The ‘Mandatory Sharing of Passive Infrastructure’ is required for the reason as follows;

- i. 60% of the roll out cost is towards the setting up of the Passive Infrastructure. The higher interest rate (Currently, PLR is 10.75% and LIBOR is 5.36%) increases this cost for the service provider, which is ultimately passed to the end consumer. The cost at which the end consumer shall receive such services is proportionately related to the cost of setting up such Passive Infrastructure;
- ii. The Return on Capital Employed ('ROCE') is a measure, which reflects the efficiency and profitability on a particular company / service provider minimize with heavy front load cost for rolling out the project. This may result in longer gestation period for any service provider to break even and this may naturally result in poor services to end consumer.
- iii. The Mandatory Sharing of Passive Infrastructure would result in the maximum coverage in fewer costs.
- iv. A roll out obligation on every service provider would result in duplication of the efforts and time. These efforts and time could be utilized in other productive activities to maximize the benefits for the end consumer.
- v. As has been referred in the consultation paper, too many towers may be an eyesore and disturb the ethnicity of the urban city. This applies equally to the rural areas, the land howsoever, in abundance should be used sparingly, as the excess land could be used for other productive purposes.
- vi. Scarcity of electricity in rural areas, may pose a challenge to the infrastructure provider. As it seems that a gen-set would be the only probable solution for the scarce electricity, lesser the number of towers, lesser number of requirements for electricity. TRAI may think of providing necessary support through the Ministry of Power for use of non-conventional renewable energy resources to generate electricity.
- vii. The Passive Infrastructure would also require manpower to manage and operate efficiently and consistently; there may be dearth of skilled and appropriately trained human resource to carry out such management and operations of the Passive Infrastructure. Again, lesser the number of Passive Infrastructure, better would be its operations and maintenance.

An appropriate policy is required to be in place to address the aforementioned challenges for Mandatory Sharing of Passive Infrastructure.

Mr. P. K. BASAK

Yes for both Rural & Urban India. To remove the Digital Divide both the faster penetration & wider spread are required in the Uncovered & Rural areas at decreasing costs & shorter timescales. In Metros & Urban India regulatory intervention is as well necessary to arrest the decline in landscape, prevent many ever increasing risks / hazards & improve particularly the QoS.

- 2. a) Is there a need of defining critical infrastructure (CI) for the purpose of passive infrastructure sharing? If so, what shall be the basis to identify Critical Infrastructure? Which agency should identify critical infrastructure?**

COAI

Yes, there is a clear need to identify critical infrastructure for the purpose of passive infrastructure sharing. One of the basis to identify Critical Infrastructure (CI) could be on the **basis of location of infrastructure**.

At present there exist areas where the sites are either not available or are limited such as Lutyens Bungalow Zone (LBZ), Cantonment areas, Central Government and State Government office buildings, Designated Forest, Green Belt areas and Government Residential colonies due to reasons stated above. The non-availability of sites in these areas creates coverage holes or **dark spots which adversely affects the Quality of Service** and also causes inconvenience to the consumers. Therefore we believe that such areas where acquisition of sites is restricted/ non-permissible by competent Authorities **should be declared as CI areas and it should be made mandatory for operators to share infrastructure in these areas.**

The exhaustive list of the CI areas should be drawn up by the Government or the concerned civic authority in consultation with either the service providers in the particular state/ telecom circle or with industry associations. Suitable policies should be framed so as to enable allocation of sites in CI areas in a proper time bound manner, as the present policies of the State and Central Government do not allow any installation of towers in the CI areas. This will also help in avoiding any litigation which might arise because of lack of clear policy guidelines.

AUSPI

There is a definite need to define Critical Infrastructure (CI). This could e.g be defined as those areas where getting permission for putting up towers and backhaul connectivity is very difficult, like Cantonment, Defence Zone, Lutyen's Delhi Area, national park, forest zone as specified by Forest Act, some areas of Mumbai etc.

BSNL

List of infrastructure that can be shared may be projected but it does not serve any useful / fruitful purpose as all the players of the market know it very well. It is only the capital intensive and the time consuming infrastructure which the operators will be tempted to share for saving Capex/ Opex and time of roll out.

BPL MOBILE COMM.LTD

Critical infrastructure may vary from area to area. Licensor/Regulator would be in the best position to identify such areas and the critical infrastructure required in each area.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

As the Telecom market in India is moving to maturity in terms of the industry competitiveness, there may not be a specific need of defining CI on a pan-India basis. However, enabling provisions for defining CI may be made in certain specific cases as below:

- a. Densely populated Metro areas.
- b. Uncovered rural areas.

Such CI may be provided to a set of IPs for building the necessary infrastructure at these areas. However, within a CI (where sharing may be mandated to SPs), the dynamics should be left to the market forces with a certain degree of competition. This is necessary so that the competition makes the IPs constantly make efforts to maintain and improve SLAs and Customer Service. Also, with 3G and Wireless Broadband expected in near future, multiple IPs will be needed in areas with shared infrastructure including CIs.

BHARTI AIRTEL LTD

a) Yes, there is a clear need to identify critical infrastructure for the purpose of passive infrastructure sharing. One of the basis to identify Critical Infrastructure (CI) could be on the **basis of location of infrastructure**.

At present there exist areas where the sites are either not available or are limited such as Lutyens Zone (LBZ), Cantonment areas, Central Government and State Government office buildings, Designated Forest, Green Belt areas and Government Residential colonies due to reasons stated above. The non-availability of sites in these areas creates coverage holes or **dark spots which adversely affects the Quality of Service** and also causes inconvenience to the consumers. Therefore we believe that such areas where acquisition of sites is restricted/ non-permissible by competent Authorities **should be declared as CI areas and it should be made mandatory for operators to share infrastructure in these areas.**

The exhaustive list of the CI areas should be drawn up by the Government or the concerned civic authority in consultation with either the service providers in the particular state/ telecom circle or with COAI.

However, the policy initiatives should help in getting the sites allocated in such CI areas in a proper time bound manner as present policy of the Government / States do not allow any tower installation in such areas. Moreover, it is important that telecom being a public utility should be treated as Critical Infrastructure. Detailed and uniform policy should be issued so that the operators are able to install the cell sites of all the locations irrespective of whether the location is falling under Commercial / Residential area, Government or Private property etc. etc. A policy from the Government / Regulator would boost the infrastructure as well as avoid the litigations, which are pending before various courts.

QUIPO TELECOM INFRASTRUCTURE LIMITED

Yes, there is a need to clearly define the telecom infrastructure as critical infrastructure. Further, the regulator while appraising the quality of service through agencies assigned such tasks can identify the CIs. The areas which are notified like the cantonment board, Govt buildings etc. which are as of now out of bounds of putting up telecom sites should come under such proviso.

SPICE COMMUNICATON LTD

Agency like ACT should identify critical sites, towers, GEN sets, Shelters etc from security / SACFA / space / environmental point of view for Must Sharing Type Category.

VSNL

Yes, there is a need for defining critical infrastructure (CI) for the purpose of passive infrastructure sharing. The Government should, in coordination with relevant ministries and civic authorities, identify the places where acquiring sites and resources are difficult, and notify such places as Critical Infrastructure.

TATA TELESERVICES LTD

Yes, there is a need for defining critical infrastructure (CI) for the purpose of passive infrastructure sharing. The Government should, in coordination with relevant ministries and civic authorities, identify the places where acquiring sites and resources are difficult, and notify such places as Critical Infrastructure.

GTL INFRASTRUCTURE LTD

Yes. CI can be identified based on

- i. difficulties in site acquisition & construction.
- ii. Poor coverage or high rate of call dropping

Both, cellular operator and infrastructure provider (IPs) together will have to identify CIs. A joint working group (JWG) has to be formed to identify CIs.

RELIANCE COMMUNICATIONS LTD

As stated above, sharing of all types of passive infrastructure should be mandated for at least three service providers in all areas i.e. urban as well as rural areas. The need for defining critical infrastructure in that case will be no longer relevant.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

Yes, even though we advocate mandatory sharing of infrastructure, it would be pertinent to define the term Critical Infrastructure for the reasons as follows:

- i. 33% of the villages have 74% of the population, 17% of the villages have 50% of the population, these figures makes it imperative that for effective movement of signals, towers are spread appropriately across the areas which may not be densely populated. The service provider may deter from investing into setting up infrastructure in such areas and therefore, an obligation upon the service provider to set up, operate and maintain the Critical Infrastructure for appropriate coverage of this area.
- ii. Smooth flow of information mitigates lots of situation, which may result in human and other loss. This flow of information may also be relevant from the perspective of the administration of this country. The Critical Infrastructure would also be defined to include such infrastructure as well. The service provider shall insure set up, safety, operation and maintenance of such infrastructure.
- iii. The local office of the Licensor (DoT) may, in consultation with TRAI, be entrusted with the task of identifying critical infrastructure.

Mr. P. K. BASAK

Yes. Various criteria could be the basis like i) location with high pop density ii) sensitive locations & buildings prone to security risks iii) limited availability of spectrum to fast rising demand iv) limitations to number of parties sharing v) only telcos to be preferred to build & operate the infrastructure for special reasons, if any (telcos are licensed but IP-I parties with 100% FDI only registered & thereby under lesser obligations &

accountability) etc. DOT (preferably a sub committee) will be the proper agency having info on Spectrum, congestion, BTS locations, list of disturbed areas, security perception, etc.

3. a) *Is tower structure in identified critical Infrastructure areas be set up by third party infrastructure providers like IP- I and shared between various service providers or left to the market forces?*

COAI

The issue of setting up of critical infrastructure or infrastructure in Critical Areas should be left to the market forces. The same should not be restricted to only IP I service providers. Therefore, either the IP I service provider or an Access service provider (CMTS/UASL) should be allowed to set up Critical Infrastructure and offer the same to others for sharing.

AUSPI

Tower structure in identified critical infrastructure areas can be set up by the service providers as well as infrastructure providers. There is no need to mandate 'who should set up tower infrastructure. Sharing of the tower should be left to the service providers to mutually arrive at a solution even if the tower infrastructure is put up by IP-I.

BSNL

The tower (along with the source of power namely Solar energy / wind energy in rural area) is a critical infrastructure and that is why most sharing has begun in this. Also the phenomena of creation of such infrastructure by third party providers like IP-1 is moving ahead at a fairly good speed and it should be left to grow naturally in the market place as it is desired by one and all.

BPL MOBILE COMM.LTD

Although an independent infrastructure provider would have a better confidence of all the parties who want to share the infrastructure, however it should be better left to the market forces.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

As we have argued above, we firmly believe that third party IPs should be the nodal players in the Infrastructure Sharing industry – both Passive and Active forms of sharing in all areas including CI areas. The necessary incentives may be provided to the IPs towards this end. The entire Indian Telecom industry will benefit with IPs as the nodal players for the reasons

of neutrality (that minimizes disputes between SPs) and the scale efficiencies that the specialized IPs will bring in. the sharing industry dynamics may be left to market forces.

BHARTI AIRTEL LTD

We feel that creation of infrastructure in CI areas should be left to market forces and any operator, who could be either an IP-I or CMTS/UASL, able to offer value proposition to other operators should be allowed to set up the tower structure. Therefore, the creation of tower structure in identified CI areas should be allowed to all the operators and open to market forces.

QUIPO TELECOM INFRASTRUCTURE LIMITED

It should be setup by third party IP I in case of new sites.

SPICE COMMUNICATON LTD

Setting up of towers / infrastructure sharing should be left to the market forces. Further towers / infrastructure of BSNL, DoT, Railways & other Government / PSUs should also be open to sharing by Telecom Operators, on broad guidelines by DoT / TRAI.

VSNL

Service providers as well as Infrastructure Providers should be allowed to set up tower structures in identified critical infrastructure areas. However, the terms and conditions under which infrastructure is shared amongst different service providers should be reasonable and non-discriminatory, and regulated on lines of the interconnect regulation.

TATA TELESERVICES LTD

Service providers as well as Infrastructure Providers should be allowed to set up tower structures in identified critical infrastructure areas. However, the terms and conditions under which infrastructure is shared amongst different service providers should be reasonable and non-discriminatory, and regulated on lines of the interconnect regulation.

GTL INFRASTRUCTURE LTD

As all such sites are shared by all operators, identified by the JWG and should be acquired, built and operated by third party IP1s.

RELIANCE COMMUNICATIONS LTD

Yes, In addition to licensed access providers, IP1 licensees may also be encouraged to set up infrastructure in all areas

The service providers did not face problem of setting up infrastructure in Delhi Metro as Delhi Metro acquired the IP II license and is giving access to its infrastructure to all operators. The same model can be followed for similar other projects. Since infrastructure is a kind of bottleneck facility, TRAI should consider mandating the sharing of infrastructure in all areas. However the commercial arrangements for sharing the infrastructure should be left to mutual agreements between the licensed infrastructure providers and between licensed service providers.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

Ideally, all the tower structure should be set up by the third party infrastructure providers. This may be relevant from two perspectives:

- a. same entity controls, directly or indirectly, towers and network would amount to loss of government exchequer, the entity may not give appropriate valuation for the use of the tower to bye pass appropriate tax impact; and
- b. controlling towers and network specially in critical area may create issues like where even though tower is set up, but neither the operator is providing appropriate coverage nor is the operator letting any other operator use such network.

Mr. P. K. BASAK

Possibly by 3rd party IP-I parties (except where required to be built by the licensees for special reasons, if any or suitable infrastructure already available or under construction by the licensees but not shared as yet). Sharing of CI should *not* be *wholly* under market forces.

4. ***Presently back haul sharing is not permitted as per licensing conditions. Since sharing of back haul optical fiber and radio link from BTS to BSC will be very useful for deeper penetration and coverage, would you suggest suitable modification in licensing conditions?***

COAI

Sharing of back haul is one of the important elements of Infrastructure Sharing. There is no doubt that without allowing the sharing of back haul, the initiative of infrastructure sharing would not achieve its desired goals

and objectives. There is a pressing need to ensure the spread of service to rural and far-flung areas of the country and sharing of back haul will play an important role in spread of affordable service to rural areas.

It is therefore essential that back haul sharing should be permitted and aggressively encouraged among the service providers through suitable amendment to the existing License conditions with mutually agreed commercial terms and conditions within a stipulated charging frame work, as it will reduce cost and result in faster spread of service.

AUSPI

Any modifications in the licensing conditions permitting service providers to share backhaul optical fibre and radio transmission links from BTS to BSC should be carried out in the License agreement by the Licenser in the Critical areas.

BSNL

The policy paper while enlisting the items can include this item also so that it is clear beyond doubt that it can be shared. However, imposing any coercive measures may be counter productive.

BPL MOBILE COMM.LTD

Yes, the licensing conditions should be modified and sharing of back haul permitted amongst service providers, especially fibre whether dark or lit.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

We strongly recommend that backhaul sharing be permitted. We also recommend that the IP-I license conditions may be suitably modified so that IPs can offer backhaul as a shared service to Service Providers (may be for the limited purpose of infrastructure sharing offered only to Service Providers sharing on the IP's infrastructure). For the IPs, backhaul will mean a natural extension of their infrastructure sharing expertise.

BHARTI AIRTEL LTD

Back haul is one of the important aspects of Infrastructure Sharing. There is no doubt that without allowing the sharing of back haul, the initiative of infrastructure sharing would not achieve its desired goals. In order to boost the infrastructure sharing in rural and semi-urban areas wherefrom the next growth of mobile services will emerge, it is recommended that back haul sharing should be permitted and aggressively encourage among the service providers through suitable amendment to the existing

Licence conditions with mutually agreed commercial terms and conditions within a stipulated charging frame work (define ceiling limits) as it will reduce cost and maintenance efforts. Back haul sharing can be of great use in Indian scenario while provisioning telecom services in rural and remote areas.

In light of the above, we strongly recommend that the back haul sharing should be permitted through suitable modification in licensing conditions.

QUIPO TELECOM INFRASTRUCTURE LIMITED

Since the current license conditions do not allow to share the active infrastructure, a modification in license is required to permit sharing of backhaul. The backhaul network elements both fiber and radio links should be allowed to be resold for the specific purpose of sharing in the backhaul with other MNOs. Since India has now a very well spread optical fiber network a fiber backhaul should be the first priority as it will result in lower tower loading and hence significant reduction in infrastructure costs in a sharing model.

SPICE COMMUNICATON LTD

Back haul including MW links & fiber etc should be fully allowed, even if license is to be modified.

VSNL

We are in complete agreement with views expressed by TRAI in the consultation paper, "Common back-haul sharing will be very useful in rural environment where traffic from BTS to BSC is very low. A common RF or Optical fiber medium can be utilized. This will reduce cost and maintenance efforts. Exit from such sharing arrangement can easily be provided if it is warranted at a later date due to increase of traffic or other administrative reasons. Back haul sharing can be of great use in Indian scenario while provisioning telecom services in rural and remote areas."¹

The incumbents should be mandated to share their nationwide optical fiber backhaul network, created largely with public funds, with other operators on reasonable and non-discriminatory terms. The terms of such sharing should be regulated by TRAI, and set to allow the incumbents earn a reasonable rate of return on its investments.

TATA TELESERVICES LTD

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GTL INFRASTRUCTURE LTD

Yes.

IPs are capable of planning the network and also provide shared backhaul. Licensing conditions should be modified to allow IPs to provide backhaul optical fiber and also radio link from BTS to BSC on sharing basis. This will help in optimizing resources.

RELIANCE COMMUNICATIONS LTD

At the moment passive infrastructure sharing is allowed as per the license conditions. Sharing of active infrastructure is limited to the extent that the service provider can use the active infrastructure for its various licenses in the service area and to the extent that it can provide point-to-point leased lines for the exclusive use of the other service provider.

Currently sharing of backhaul - optical fibre / radio link and other active infrastructure is not permitted. The TRAI may suggest suitable changes in legislation/ license conditions to permit sharing of all types of active infrastructure including backhaul. This however the terms and conditions for sharing of active infrastructure should be left to mutual agreements between the service providers.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

As already discussed in the consultation paper, common back-haul sharing would be useful in rural environment, therefore, we are of the view that the existing licensing conditions should be modified to permit resale of point to point bandwidth, may be for the limited purposes of back haul sharing.

Mr. P. K. BASAK

ISPs & OSPs (Other Service Providers) are required to use telecom infrastructure where available. Often Transmission is also shared for own use and/or lease/resale. At least relaxation should be extended to backhaul sharing up to BSC.

5. In your opinion, is there a need of regulatory intervention to encourage active infrastructure sharing?

COAI

Active infrastructure sharing is not permitted in India today. We believe that the same should be made permissible for the existing licensees by modifying the licensing conditions. All the existing service providers who are providing service in the existing telecom circles should be permitted to share active infrastructure.

It is however submitted that Regulatory intervention is not required to encourage active infrastructure sharing. Sharing of active infrastructure should be left to the market forces and should be based on mutual agreement and requirements of the existing service providers.

AUSPI

We consider that license conditions should not be an impediment for sharing. In the critical areas where passive infrastructure sharing is permitted, mandating of active infrastructure sharing & necessary regulatory intervention would be required. Regulation to promote infrastructure sharing will help in faster roll out, deeper penetration in unconnected areas and escalation of teledensity.

BSNL

Regulatory intervention is not at all required as it is premature at this stage. Any regulatory intervention at this stage may hamper the growth of active infrastructure creation and shall become counter productive and in

that sense shall go against the national interest of building infrastructure across the country.

BPL MOBILE COMM.LTD

Yes, there is a need for regulatory intervention to encourage active infrastructure sharing as the present licensing conditions do not permit the same, especially intra circle roaming and back haul infrastructure.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

We strongly recommend enabling regulation to permit Active infrastructure sharing. We recommend that IPs may be permitted to offer Active infrastructure sharing by suitably modifying the IP-I license conditions.

We also recommend that the enabling regulation permit all the possible forms of Active infrastructure sharing. The actual level of Active infrastructure sharing may be left to mutual agreements between IPs and SPs. The honorable Authority may put certain restrictions (such as minimum percentage of owned network by SPs) in the interest of promoting competition.

BHARTI AIRTEL LTD

We recommend that Active Infrastructure Sharing should be made permissible for the existing licensees by modifying the licensing conditions. All the existing facility based service providers who are providing service in the existing telecom circles should be permitted to share active infrastructure.

However, Regulatory intervention is not required to encourage active infrastructure sharing. Sharing of active infrastructure should be left to the market forces and should be based on mutual agreement and requirements of the existing facility based service providers.

QUIPO TELECOM INFRASTRUCTURE LIMITED

Since active sharing is far more complex than passive sharing it will need that much more understanding between the sharing operators. Thus it is best based on a mutual understanding amongst them and no mandate will work successfully.

SPICE COMMUNICATON LTD

Sharing of active Infrastructure should be based on mutual agreements & requirements of existing / new service providers. General guidelines by TRAI / DoT should be welcomed.

VSNL

The recommended guidelines listed above for encouraging and/or mandating of infrastructure sharing should be applied to passive as well as active infrastructure sharing. Specifically:

- a. Operators should be encouraged to share active network elements, including the switch, irrespective of the geographic location of such active elements, and the type of licence held by the sharing operators by suitably amending the licence terms for all services to bring in greater clarity in respect of provisions of infrastructure sharing. They should also be allowed to share bandwidth taken on lease from other operators.
- b. The incumbent should be mandated to share active infrastructure such as backhaul network and last mile copper network with other operators.
- c. As pointed out by TRAI, "As of today, lack of point of interconnect is a critical bottleneck hampering the expansion of telecom service. It is also adversely impacting the quality of service parameters of all the service providers."³ In this context, till the time that point of interconnect capacity is enhanced to meet the requirements, sharing of existing interconnect capacity amongst different operators should be mandated by the regulator.

TATA TELESERVICES LTD

The recommended guidelines listed above for allowing, encouraging and mandating of infrastructure sharing should be applied to passive as well as active infrastructure sharing. Specifically:

- a. Operators should be allowed to share active network elements including the switch and IN, irrespective of the geographic location of such active elements, and the type of licence held by the sharing operators. They should also be allowed to share bandwidth taken on lease from other operators.
- b. The incumbent should be mandated to share active infrastructure such as backhaul network and last mile copper network with other operators.
- c. As pointed out by TRAI, "As of today, lack of point of interconnect is a critical bottleneck hampering the expansion of telecom service. It is also adversely impacting the quality of service parameters of all the

service providers.”⁴ In this context, till the time that point of interconnect capacity is enhanced to meet the requirements, sharing of existing interconnect capacity amongst different operators should be mandated by the regulator.

GTL INFRASTRUCTURE LTD

No Comments

RELIANCE COMMUNICATIONS LTD

At present active infrastructure sharing is not permitted between the two service providers. The regulator may facilitate the amendment in the license conditions thereby permitting active infrastructure sharing also. However, the terms and conditions for sharing such infrastructure should be left to the service providers.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

In our experience “self-regulation” has not worked well in Indian scenario and not many players have participated actively on the issues relating to sharing of infrastructure. Therefore, it is advised that the regulator should actively participate in the process to encourage active infrastructure sharing. The regulator and the licensor may provide incentives to the telecom operators/ infrastructure providers involved in the process infrastructure sharing.

Mr. P. K. BASAK

Telecom is the connectivity business - locally & globally. In services & technologies it has to be at the leading edge while addressing the needs of the country adequately. Telecom business also works on the twin principles of Competition & Co-operation. The latter, in the strategic context, is the in-thing! Then, why not? MVNO, NGN, 3G, MNP etc - all are sure to come (though at different times) to the liberalized market. The Authority has to promote & encourage both Competition & Co-operation to the maximum extent but obviously in a balanced manner. The due process for a regulatory intervention is certainly desirable.

6. In your view whether you consider active infrastructure sharing as pre-requisite to MVNO? If so, suggest future course of action to encourage MVNO in Indian market?

COAI

Sharing of active infrastructure is not a pre-requisite to MVNOs. **The issue of MVNOs is not germane to the present consultation on infrastructure sharing and the same may be dealt with separately.**

In this regard it is also very pertinent to keep in mind that **the competition in mobile segment in India is already very intense** with at least five to six mobile service providers in each service area. Moreover, the existing operators are also enhancing their footprint, which will further intensify the competition. In view of constantly reducing tariffs, falling ARPUS and low margins, we feel that the concept of MVNO will not be suitable for Indian Telecom Market. The concept of MVNO has been successful only in those telecom markets wherein the service providers are limited and are not able to cater to the needs of different segments.

The above has also been reiterated in a recent report, released during India Telecom 2006 by reputed Consultants M/s Ernst and Young entitled “From Emerging to Surging, India Telecom:2010”, which clearly states that:-

“...given that the market is highly crowded, the possibility of spare capacity allowing for MVNOs is unlikely. Further, in an 8 player market, all segments are likely to be adequately targeted...”

AUSPI

As a concept, MVNO is ok, but to begin with, it should be left as franchisee model to access service providers as permitted under the license agreement of Unified Access Service Providers. Going forward, a suitable framework for regulating operations of MVNO should be prepared.

BSNL

The Indian Telecom Industry, as it is, is in a formative stage. Accordingly, it is too early for introduction of MVNO. A market, which is abundant in infrastructure, is alone ready for MVNO. If MVNO is introduced at this stage, it is likely to hamper the growth of the industry / infrastructure. At present, Indian Telecom Industry is at a stage when infrastructure creation should be encouraged and promoted. MVNO is a

concept, which comes in to being effectively only when the operators have surplus capacities and they are finding it difficult to market and sell it. In the present condition, operators are not even able to meet the growing demand and hence MVNO concept is not relevant at this stage.

BPL MOBILE COMM.LTD

Both active infrastructure sharing and resale of services are pre-requisite to the MVNO concept. The MVNOs were not permitted so far with a view to establish adequate telecom infrastructure in the country. With 6-7 networks having already been established in most of the service areas, this is the time that MVNOs and resale of services are permitted so as to further enhance the competition as well as the utilisation of the existing resources. This MVNO concept, inter intra circle roaming and sharing of both active and passive infrastructure would be extremely helpful in achieving the targets of 250 million subscribers by 2007 and 500 million subscribers by 2010.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

Active infrastructure sharing will definitely enable a far more efficient MVNO operation, especially the Active infrastructure sharing offered by IPs. Being neutral, the IPs would offer such infrastructure without any hassles to the MVNOs, thus promoting the ease of MVNO operation.

BHARTI AIRTEL LTD

Sharing of active infrastructure is not a pre-requisite to MVNOs. **The issue of MVNOs is not germane to the present consultation on infrastructure sharing and the same may be dealt with separately.**

The concept of MVNO has been successful only in those telecom markets wherein the service providers are limited and are not able to cater to the needs of different segments. In this regard it is also very pertinent to keep in mind that **the competition in mobile segment in India is already very intense** with at least five to six mobile service providers in each service area. Moreover, the existing operators are also enhancing their footprint; which will only further intensify the competition.

Moreover, the above facts have also been reiterated in a recent report, released during India Telecom 2006 by reputed Consultants M/s Ernst and Young entitled "From Emerging to Surging, India Telecom:2010", which clearly states that:-

.....given that the market is highly crowded, the possibility of spare capacity allowing for MVNOs is unlikely. Further, in an 8 player market, all segments are likely to be adequately targeted...

In view of constantly reducing tariffs, falling ARPUS and low margins, we feel that the concept of MVNO will not be suitable for Indian Telecom Market.

QUIPO TELECOM INFRASTRUCTURE LIMITED

It is not a prerequisite for MVNO. The MVNO business will develop due to competition and tariff pressures and will be encouraged by market forces as such.

SPICE COMMUNICATION LTD

Active Infrastructure sharing may be useful in future, especially in the case of costly 3G spectrum, from Mobile Virtual Network Operator (MVNO) point of view. Spice Communication is in favor of further discussions on MVNO now or in future.

VSNL

Active infrastructure sharing is not a pre-requisite to introduction of MVNOs; there are MVNO in a number of countries where active infrastructure sharing is not permitted.

DoT has recently pointed out that the present licensing regime does not support the concept of MVNO, although the existing telecom licences already provide great flexibility by way of franchisee arrangements allowing licencees to offer many things, which MVNO currently offer globally.⁵

Going forward, it is suggested that:

- a. Network operators be permitted to enter into wholesale supply agreements with MVNO at mutually acceptable terms
- b. An appropriate framework be developed to regulate the functioning of MVNO

TATA TELESERVICES LTD

Active infrastructure sharing is not a pre-requisite to introduction of MVNOs; there are MVNO in a number of countries where active infrastructure sharing is not permitted.

DoT has recently pointed out that the present licensing regime does not support the concept of MVNO, although the existing telecom licences already provide great flexibility by way of franchisee arrangements allowing licencees to offer many things, which MVNO currently offer globally.

Going forward, it is suggested that:

- a. Network operators be permitted to enter into wholesale supply agreements with MVNO at mutually acceptable terms
- b. An appropriate framework be developed to regulate the functioning of MVNO

GTL INFRASTRUCTURE LTD

No Comments.

RELIANCE COMMUNICATIONS LTD

No, active infrastructure sharing should not be construed as pre-requisite to MVNO. MVNOs are hybrid service providers. There are various models of MVNOs prevalent world over. They generally don't own base stations or core transmission or switching capacity, so they are not a traditional Facility Based Operator. MVNOs appear to end users to be an independent mobile network operator. Unlike mobile network operators, however, MVNOs do not have a license to use radio spectrum, but have access to one or more of the radio elements of a mobile operator and are able to offer services to subscribers using such elements. An MVNO also differs from a reseller as they have the ability to interconnect their own Value Added Platforms, to re-brand, re-pack and re-price offerings to customers.

We believe that due to limitation of radio spectrum there can only be limited number of facility based operators in the market. Since radio spectrum in a way is a bottleneck facility, further competition can only be introduced through MVNOs. We therefore believe that CMTS should be required to allow MVNOs to access capacity on the cellular operator's core networks.

The basic idea of this paper is to share the infrastructure resulting in huge saving of CAPEX and OPEX and optimum utilization of the available resources and at the same time encourage competition in the market so that services are available at affordable rates to the consumers. We believe that MVNOs stimulate competition and innovation in the mobile industry. The elements of the regulatory regime that are required to

facilitate MVNOs are things such as the ability of cellular operator to sell access to their network and airtime to an MVNO. The MVNO must then be permitted to re-package, re-brand and re-price those core network elements to create new product offerings for its customers.

There are persuasive reasons why modern networks need to partner an MVNO. The benefits are:

- to share in new revenues and the creation of sizeable capital value.
- MVNOs are customer focused, while network operators can be absorbed by technology and managing their infrastructure.
- MVNOs offer risk diversification to existing cellular operators. An MVNO with a different strategy on the same network increases the likelihood of success, while stimulating traffic and revenues.
- Different brands attract different people. Two good brands together invariably attract more customers than one good brand on its own.
- Regional mobile operators can expand service area and have pan-Indian presence

MVNOs have been encouraged world over. MVNOs have been commercially negotiating with the cellular company holding an equity stake. Virgin Mobile has established an Asia-wide MVNO with SingTel, a UK MVNO with DT/One2One and an Australian MVNO with SingTel/Optus. Hong Kong has mandated MVNOs in its 3G auctions. The successful bidders for 3G spectrum are required to make up to 30 per cent of their network capacity available for MVNOs, and OFTA will retain a reserve power to arbitrate in the event that the network operator and the MVNO cannot agree on terms.

It is seen world over that equity holding by a cellular operator in its MVNO is most common commercial arrangement. The existing limitations from holding 10% or more equity by a company in another licensed company in the same service area would hinder commercial negotiations and entry of MVNOs. Given the current situation of having 6 to 7 telecom operators in most of the service areas and introduction of MVNOs would further aggravate the competition, there is no relevance to continue with such license conditions. It is therefore imperative that this clause is deleted from the existing licenses.

In order to have friendly regulatory regime for introduction of MVNOs, number of changes are needed in the Licensing conditions. These include:

- The current conditions specified in Clause 1.4 (ii) of the Unified access service license restrict a Company/legal person from holding 10% or more equity in another licensed company in the same service area.

- Amend license conditions to permit sharing all active telecom network elements including radio infrastructure.
- Amendment of license to permit resale of various products offered by a UASL.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

In our view infrastructure sharing is not a pre-requisite for infrastructure sharing. It may be noted from the fact that MVNO are effectively providing services in several countries without the regulator mandating infrastructure sharing. However, infrastructure sharing may help the MVNO to roll-out services in a much cheaper and effective manner.

Mr. P. K. BASAK

All key telecom assets like infrastructure, spectrum etc need to be leveraged optimally & to the fullest extent for rapid progress of the nation. It would help to gain experience & insight in Active Infrastructure Sharing (if allowed) perhaps before introducing the MVNO - *though not a pre-requisite*. Either way one option is to ask for Expression of Interests (EoI) in MVNO (say for Metros, Type A / B / C circles, Regional & All-India operations).

7. What other modes of active infrastructure sharing will be useful in Indian scenario and suggest actions which you feel necessary to encourage such sharing?

COAI

In our view, some of the modes of active infrastructure sharing which could be useful in the Indian Scenario are:

- Back haul sharing
- Antenna sharing
- Sharing of feeder cables & transmission equipment and
- Partitioning of Switches.

Besides the above, it should be made mandatory for all service providers to offer Inter-circle and Intra-circle roaming facilities to subscribers of all other networks. It must also be ensured that sharing of active infrastructure is on a fair and equitable basis.

AUSPI

In addition to answer above, all elements of network infrastructure be permitted to be shared between operators with mutual consent.

BSNL

In our view, some of the modes of active infrastructure sharing which could be useful in the Indian scenario are Back Haul Sharing, Antenna Sharing, Sharing of the Feeder Cables and Transmission Equipment and Partitioning of the Switches. Only guidelines to facilitate it are recommended.

BPL MOBILE COMM.LTD

Roaming and resale of services tantamount to complete sharing of both active and passive infrastructure. Like interconnection, it should be made mandatory for all service providers to offer inter circle and intra circle roaming services to subscribers of all other networks. The UASL licensing guidelines should be modified so as to permit resale of services and MVNOs in the Indian market.

Briefly, whatever is shareable, must be shared. If shared, in a fair, reasonable, transparent and equitable manner it makes economic sense. All steps should be taken by the regulator and licensor to encourage such actions.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

As we have pointed out above, enabling regulation is recommended for all possible forms of Active infrastructure sharing. The IPs and SPs can determine the extent of such sharing depending on their mutual agreements and business comfort.

BHARTI AIRTEL LTD

a) As stated in the Consultation Paper, one of the objectives of the Infrastructure Sharing is to optimize the available resources to great extent.

Presently, as per the existing guidelines / Interconnect Agreements, the Point of Interconnect as well as the infrastructure for connectivity i.e. Co-Location, Rack etc. is being treated separately for each service. The said approach was earlier relevant from this perspective that the Incumbent Operator was not having the CDR based billing system and separate Licence were being used for each service.

However, after introduction of Unified Licence Regime, the service provider can provide the Access Services (cellular, Fixed and Internet Telephony) from one Licence. On January 13, 2005, the Regulator had also made its recommendations for “Unified Licensing”, which will cover all the services. Moreover, the Incumbent Operator is also equipped with CDR based billing system.

Thus, it is desirable that all efforts should be made to ensure that the POI / other infrastructure can be used for all the services, as much as possible, which will result into improved QoS, optimization of existing infrastructure and reduced Capex /Opex. **We earnestly request the Regulator to issue a regulation the same with the consent of all the operators.**

b) As mentioned earlier we strongly recommend backhaul sharing which is also an active sharing. Also, the economics of all forms of sharing has to be on a very fair, reasonable and equitable basis.

QUIPO TELECOM INFRASTRUCTURE LIMITED

Sharing of antennae and associated elements amongst active infrastructure should be permitted amongst MNOs

SPICE COMMUNICATON LTD

Other modes of Sharing can be MW, Antenna, Cable, Gen Sets, Switches, over capacity call centers / ROs, Government should give subsidiaries, discounts, license fees benefits for Infrastructure Sharing. USO funds can be used more effectively.

VSNL

Besides what has been mentioned in response to question 4, active infrastructure sharing can also enable rapid proliferation of wireline services in India. While India is rapidly catching up with China as far as mobile services penetration is concerned, it significantly lags behind in the area of wireline, and hence broadband services penetration. By allowing active infrastructure sharing and by utilizing the USO funds, an extensive last mile wireline infrastructure, which can be used by all the service providers for providing their voice and data services, can be rolled out.

TATA TELESERVICES LTD

Besides what has been mentioned in response to question 4, active infrastructure sharing can also enable rapid proliferation of wireline services in India. While India is rapidly catching up with China as far as mobile services penetration is concerned, it significantly lags behind in the area of wireline, and hence broadband services penetration. By allowing

active infrastructure sharing and by utilizing the USO funds, an extensive last mile wireline infrastructure, which can be used by all the service providers for providing their voice and data services, can be rolled out.

GTL INFRASTRUCTURE LTD

No Comments.

RELIANCE COMMUNICATIONS LTD

There are various ways of active infrastructure sharing which include:

- (i) Common Shared Network solution where service providers jointly build one common shared radio/core network and each operator's subscribers roam into the Common Shared Network.
- (ii) Geographical Split Network solution where each service provider builds its own network within a defined geographical area and the operators allow national roaming into each other's network.
- (iii) Shared UTRAN solution where operators build coverage jointly by sharing the sites and radio infrastructure while each operator has its individual carrier.

As indicated earlier also, the regulatory intervention is required to the extent of facilitating the amendments in license conditions to permit sharing of all types of active infrastructure.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

At this point in time, we do not advocate active infrastructure sharing.

Mr. P. K. BASAK

Another step could be to liberalize a limited sharing of spectrum initially between the parties sharing the passive infrastructure at locations where one party applies for additional spectrum. This will *not* be resale but only sharing for own use. If feasible, it will help in better utilization of spectrum & lesser hoarding of extra spectrum. Such environments based on sharing further facilitate the smooth entry of MVNOs at the appropriate time in 2G, 3G, 4G or whatever.

8. Do you feel the need to bring appropriate legislation/ amendment in licensing conditions to encourage passive infrastructure sharing?

COAI

It is first submitted that Passive infrastructure sharing is already permitted under the existing licensing conditions. Therefore, no new legislation/amendment to the licensing conditions may be necessary for passive infrastructure sharing. However, as already stated in our response to the first question, passive infrastructure sharing among the service providers should be encouraged.

This may be done by ensuring that infrastructure sharing among service providers is implemented on fair and equitable grounds. In the case of Critical Infrastructure areas, the Regulator may lay down the broad rules/guidelines to be followed by the service providers to ensure that sharing happens among the service providers in a fair and equitable manner.

It is important that telecom being a public utility should be treated as Critical Infrastructure. Detailed and uniform policy guidelines should be issued so that the operators are able to install the cell sites in all the locations, irrespective of whether the location is falling in Commercial or Residential Area, public or private property. **The Government and the concerned civic agencies should also have a definite plan to make available sites for shared roll out in these areas in a time bound manner so as to improve the coverage** and also manage the higher capacity required in some of these areas.

AUSPI

There is no need to bring in legislation or amendment in the licensing conditions to encourage passive infrastructure sharing. This should be left to the mutual agreements among service providers. However, in critical areas sharing of passive infrastructure needs to be mandated.

BSNL

No, not at all.

BPL MOBILE COMM.LTD

Passive infrastructure sharing is already permitted under the existing licensing conditions. No new legislation/amendment to the licensing conditions may be necessary for passive infrastructure sharing, except one in the cases of critical areas and two a benchmarking price for the infrastructure to be shared.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

We believe that there is no need for any legislation for encouraging passive infrastructure sharing. A better mechanism is to provide financial incentives to IPs/ SPs to encourage such sharing.

BHARTI AIRTEL LTD

It is first submitted that Passive infrastructure sharing is already permitted under the existing licensing conditions. Therefore, no new legislation/amendment to the licensing conditions may be necessary for passive infrastructure sharing. However, as already stated in our response to the first question, passive infrastructure sharing among the service providers should be encouraged.

This may be done by ensuring that infrastructure sharing among service providers is implemented on fair and equitable grounds. In the case of Critical Infrastructure areas, the Regulator may lay down the broad rules/guidelines to be followed by the service providers to ensure that sharing happens among the service providers in a fair and equitable manner.

As stated above, treating as telecom infrastructure as Critical Infrastructure, a detailed and uniform policy should be issued to enable the operators to operators the cell sites in all the locations.

QUIPO TELECOM INFRASTRUCTURE LIMITED

There do not seem to be a need except with reference to CIs

SPICE COMMUNICATON LTD

Infrastructure Sharing of around 50% should be encouraged even if amendments / appropriate legislations / guidelines are required to issued.

VSNL

Yes, there is a need to bring appropriate legislation/amendment in the licensing conditions to encourage and mandate passive infrastructure sharing as outlined in the previous sections.

TATA TELESERVICES LTD

Yes, there is a need to bring appropriate legislation/amendment in the licensing conditions to allow, encourage and mandate passive infrastructure sharing as outlined in the previous sections.

GTL INFRASTRUCTURE LTD

Yes.

RELIANCE COMMUNICATIONS LTD

Yes, the passive infrastructure sharing should be mandated for at least up to three service providers. Suitable incentive schemes may also be devised to encourage the infrastructure providers/telecom service providers to share their infrastructure with more than three service providers. This will not only reduce the number of towers in the cities/towns and associated CAPEX investment but also make the services relatively better and cheaper. The savings shall automatically be passed on to the consumer, in this age of competition. Such measures will also help in achieving higher teledensity, in line with the targets/ objectives set forth by the government.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

There is a need to bring appropriate amendments in the legislation/licensing conditions to encourage passive infrastructure sharing. As a matter of fact, it is pertinent to mention that the Indian Telegraph Act, 1885 has been amended for the purposes of disbursement of Universal Service Obligation Fund (USF) for the purposes of commissioning and sharing of passive infrastructure in rural and remote areas.

Mr. P. K. BASAK

Yes. It will safeguard all the business aspects properly. Also it will legalize what has already happened (i.e. 25% towers being shared & many more being in the pipeline). BSNL, being a 100% Govt PSU, may then have no hurdles to explore commercial arrangements with private parties based on mutual needs. It will also show to the world progressive reforms in Indian Telecom - usually a key pointer to FDI investment!

- 9. Do you feel that active infrastructure sharing be permitted by modifying the existing licensing conditions?***

COAI

As stated in our response to Question 7 above, Active Infrastructure Sharing should be encouraged and the existing licensing conditions should be modified, wherever necessary, to enable the same. We agree with the observation of the Authority that the licence should be suitably modified so as to allow for sharing of back haul.

AUSPI

All necessary changes as discussed above be carried out for sharing of active infrastructure. License should not become an impediment.

BSNL

As stated in our response to Item No. 7 active infrastructure sharing should be encouraged and the guidelines for the same may be issued wherever necessary rather than modifying the License conditions.

BPL MOBILE COMM.LTD

Yes, we strongly recommend that active infrastructure sharing should be permitted and the existing licensing conditions should be modified to permit this. For example, today the intra circle roaming is prohibited by licensing conditions.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

Active infrastructure sharing should be permitted. Also, IP-I license holders should be permitted to offer Active infrastructure sharing.

BHARTI AIRTEL LTD

As answered to Question No.4

QUIPO TELECOM INFRASTRUCTURE LIMITED

No such concerns are anticipated

SPICE COMMUNICATON LTD

Replied above in affirmative

VSNL

Yes, the existing licensing conditions should be modified to bring in greater clarity regarding active infrastructure sharing with a view to encouraging and mandating active infrastructure sharing as outlined in the previous sections.

TATA TELESERVICES LTD

Yes, the existing licensing conditions should be modified to allow, encourage and mandate active infrastructure sharing as outlined in the previous sections.

GTL INFRASTRUCTURE LTD

No Comments.

RELIANCE COMMUNICATIONS LTD

As indicated earlier also, the regulatory intervention is required to the extent of facilitating the amendments in license conditions to enable sharing of active infrastructure as per mutual agreements between the service providers.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

In the Indian context, it may be early to introduce active infrastructure sharing. Also, as discussed in the consultation paper, active infrastructure sharing may bring-out interference and other technical issues, which may have an effect of QoS.

Mr. P. K. BASAK

Yes. However DOT / TRAI need to issue as well guidelines on the matter after duly completing the regulatory process.

10. Would any potential competition concerns arise with infrastructure sharing? If so, how would such competition concerns be addressed to ensure that there is no adverse impact on consumers' benefits in terms of choice of service providers, access, availability of services, range, quality of services and pricing?

COAI

Infrastructure sharing will lead to faster spread of affordable service in the country. Private mobile service providers are already sharing infrastructure and there is healthy competition among these service providers. We therefore do not foresee any adverse impact on the consumers. On the contrary, the consumers would be benefited by better service due to increased competition.

AUSPI

Competition between network operators is achieved through:

- 1) Quality of Service: providing a technically high quality network, increasing market position by elimination of technical flaws such as poor speech quality, service availability.
- 2) Good coverage: extending the network to cover a larger area and more public areas than the competitor and ensuring seamless mobility.
- 3) Subscriber Services: offering an extensive services package that is more adapted to market requirements and offers more content / choice than the competition.
- 4) Price : the operator that can offer the best affordable price will have the largest market share.

We feel that Infrastructure sharing has been associated with increasing concerns over competition. However, it is felt that this will not impact adversely on competition levels nor will it adversely affect the quality of service provided to the consumer.

Infrastructure sharing will increase the level of competition. This will translate into overall benefit to the subscribers if sharing of both passive and active infrastructure is allowed.

BSNL

The Infrastructure Sharing is gradually and naturally taking off because of its competitive edge that it creates by way of reducing the capital cost. Accordingly, it is likely to benefit the consumers in a big way i.e. if the capital cost is reduced; the operators would be better equipped to provide wider choice of services with a better quality, range and pricing.

BPL MOBILE COMM.LTD

Adequate regulatory measures may be necessary to overcome any potential competition concerns. The present proposal to provide subsidy to three operators for rolling out services in rural and remote areas would make it impossible for the other service providers, who are not successful in the bidding process, to roll out their services in these areas on equal terms.

It would virtually tantamount to the service area for such unsuccessful service providers getting restricted to urban areas only. Since intra circle roaming is not permitted at present, the subscribers of these net works will have no access to mobile service in rural areas. Therefore, they may churn to other networks making it difficult for their original operator to survive. So long as all the service providers are able to roll out their services in all areas of a circle whether by establishing their own independent infrastructure or by sharing it with others on equal and non discriminatory terms, there should be no competition concerns, but the present dispensation of restricting the subsidy to three is anti-competitive.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

We do not foresee any major competition issues arising out of infrastructure sharing, whether passive or active. We believe that the Indian Telecom market has now attained a certain level of maturity on competitiveness thanks to the efforts of the Govt of India and the honorable Authority. In fact, the end customers would undoubtedly benefit as the QoS, Access and range would improve as a result of infrastructure sharing.

BHARTI AIRTEL LTD

We feel that the objectives of faster roll out, expanding tele-density and reducing tariffs can all be targeted by adopting site sharing among mobile operators. In case, infrastructure sharing is encouraged, the end customer will immensivly benefit, as at any given location, he would have the choice of best services, QoS and pricing. We therefore do not foresee any adverse impact on the consumers. On the contrary, the consumers would be benefited by better service due to increased competition.

QUIPO TELECOM INFRASTRUCTURE LIMITED

No such concerns are anticipated

SPICE COMMUNICATON LTD

There will not be any adverse impact on the consumers. Subscribers will be benefited only, by way of better services in even remote areas at affordable rates.

VSNL

We believe that the model being proposed in the previous sections for encouraging and mandating infrastructure sharing suitably addresses the potential competition concerns.

TATA TELESERVICES LTD

We believe that the model being proposed in the previous sections for allowing, encouraging and mandating infrastructure sharing suitably addresses the potential competition concerns.

GTL INFRASTRUCTURE LTD

Passive infrastructure sharing at the sites built by a third party IP1 will not bring any competition concerns over long term. Moreover this shall further increase the competition.

- Choice of Service Providers: Impact shall be positive . the choice of service providers shall increase as the site built by an IP1 normally can cater to 3- 4 no. of mobile operators. Hence the choice of service provider in a given territory shall increase.
- Access: No impact
- Availability of services: Positive impact for the mobile users if the site is built by an IP1 as the site built by an IP1 can cater to 3-4 mobile operators.
- Range: No impact
- Quality of service: Will improve with infrastructure sharing as infrastructure build and maintenance will be a core function of IPs
- Pricing: With passive infrastructure sharing, costs will be shared and hence price charged to the subscriber can be reduced benefiting subscriber, operators and IP...all three of them.

RELIANCE COMMUNICATIONS LTD

There is no such possibility of adverse impact on consumer in case of Passive or active infrastructure sharing. The cost savings on account of infrastructure rollout would help operators to develop more innovative products and services. The competition with respect to services provision would be expected to be significantly more intense as operators would substitute competition at the infrastructure level with competition at service level. Further competition will be more intense as more operators will have access to the infrastructure. The competition will also have bearing on the pricing which will attract the customer. This will commence further competition among the players which will be finally beneficial to the consumer.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

It is important that all the telecom operators may be given equal opportunity to take benefit of infrastructure sharing. Regulator must ensure that infrastructure sharing may not get confined between two or three

operators alone. Even small or operators providing services in a single circle may be allowed to share infrastructure. All the Infrastructure Provider (IP-1) registration holders must not be allowed to discriminate between small and big operators.

Further, it must be ensured that the monetary benefits of such sharing may be effectively and transparently passed on to the consumer. QoS is another important factor which should be kept in mind and no compromise on QoS should be allowed.

It is assumed that infrastructure sharing would increase the covered area of any operator in its licensed circle, thereby making its services available to much more number of consumers.

Mr. P. K. BASAK

Sharing should *not* generally have any adverse impact on Consumers. Rather it may lower pricing of some service providers depending on cost savings, improvement in efficiency of operations, etc. QoS at the shared sites has to be closely monitored - at least initially. Also a Dispute Resolution Cell should at least be in place to expedite the issues of conflict on fast track - otherwise consumers may be affected. Sharing will have its quota of problems like Interconnection! TRAI should also prepare a model format for agreement that every party entering into such an agreement should file with DOT. Another competition issue should be to limit any party in sharing not to exceed, say 70%, of such infrastructure.

11. What benefits are expected to the subscribers by infrastructure sharing and how these can be monitored?

COAI

Infrastructure sharing will result in faster spread of affordable service in the country. Infrastructure sharing, especially in the Critical Infrastructure areas, will help in removal of 'dark spots'. The subscribers will thus benefit from faster roll out of service, improved seamless coverage and increased competition.

Further, it must be noted, that 60% of geographic area is yet to be covered by the mobile service and the service is yet to reach 40 % of population. The Capital requirement to reach the remaining areas and provide coverage to the uncovered population would be very high. Infrastructure sharing will ensure that the affordable service reaches to the uncovered areas in a speedy and cost effective manner.

AUSPI

Subscribers will benefit from infrastructure sharing in a number of ways. These can be:

- 1) The expected cost savings from infrastructure sharing would result in a more enhanced and cost effective services to consumers. Operators would be able to use cost savings to develop more innovative products and services for consumers apart from reduction in tariffs. Competition with respect to service provision would be expected to be significantly more intense as operators substitute competition at the infrastructure level with competition at the service level. If the Government is concerned about the development and growth of mobile data rich services, then this is clearly a more appropriate framework to achieve such objective.
- 2) Competition in the mobile service market will be more intense as more operators will have access to the necessary infrastructure from the outset. Therefore, the first operator to have access to infrastructure will not be able to maintain a monopoly position in the market. Nor will operators be able to use coverage quality as a differentiating factor. It is clear therefore that operators will seek to differentiate themselves in the market through the rapid roll-out of innovative products and services rather than geographical coverage.
- 3) Alongside service competition, increased price competition is expected. Average service and product prices for consumers would be expected to be lower in sharing than in non-sharing environments.
- 4) Infrastructure sharing would benefit new entrants, which in turn would further increase competitive pressures. Building a new network would represent a significant additional expenditure for any new entrant and would significantly reduce its financial viability, especially as it has to be assumed that such a new entrant would only be able to command a relatively small market share. The possibility of infrastructure sharing, therefore would aid the launch of a possible new entrant and further enhance the competitive environment.

In summary, infrastructure sharing would neither impact adversely on competition levels nor would it adversely impact the quality of service provided to the consumer. However, it is to be ensured that benefit of infrastructure sharing due to reduced capex / opex and competition pressure results in low tariffs to the end user.

As a part of ongoing compliances, all the operators are required to submit accounting separation reports which include a portion on network related aspects. Apart from this, operators are also required to submit AGR, License Fee and Spectrum payment details i.e, the entire data on operator's performance, network, tariffs etc. are periodically filed with TRAI. This collectively will adequately arm DOT/TRAIS to monitor the tariffs, QoS parameters, etc. The same can be employed to ensure that the above benefits accrue to the subscribers in the right manner.

BSNL

As indicated above, the infrastructure sharing leads to reduction in the capital cost and the roll out time delays.

BPL MOBILE COMM.LTD

Infrastructure sharing would result in optimal utilisation of infrastructure and thus reduce the cost of providing the telecom service. Even though 100% benefit may not be passed on to the consumers, in the intense competition scenario as it exists in India for mobile services, the market forces will compel the operators to pass on most of the benefits to the consumers by way of reduction in tariffs. Overall, whether mandated or encouraged, sharing of infrastructure would bring down Capex as well as Opex. This is a win-win for service provider as well as consumer. Infrastructure sharing will be a virtuous circle.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

Benefits to subscribers:

- Improved Quality of Service (in the black spots or remote areas)
- As different Service Providers have access to the common infrastructure, subscribers are the ultimate winner enjoying seamless coverage.
- The shared infrastructure will also be handy for the proposed 3G and Wireless Broadband rollout in India. We firmly believe that Data penetration is the next challenge after mobile penetration and shared infrastructure would enable faster rollout of such services.

BHARTI AIRTEL LTD

Infrastructure sharing will result in faster spread of affordable service in the country, especially in the Critical Infrastructure areas; will help in

removal of ‘dark spots’. The subscribers will thus benefit from faster roll out of service, improved seamless coverage and increased competition

QUIPO TELECOM INFRASTRUCTURE LIMITED

The cost of setting up passive infrastructure amounts to 70 percent of total cost of a telecom site today. Sharing of such infrastructure shall result in reduction of Capex & Opex cost to the operators, which will be passed on to the subscribers in the competitive environment. It will do immense benefit to the ecology if the numbers of BTS are restricted by sharing and the society will derive benefit thereof

SPICE COMMUNICATON LTD

Customers will be benefited by way of better coverage, better services, better QoS, flexible / more reach to various service providers. Since Capex, Opex will be reduced & operators can reach to more places.

VSNL

The potential benefits expected for the subscribers by infrastructure sharing have been listed in the previous sections.

As a part of ongoing compliances, all the operators are required to submit accounting separation reports which include a section on network related aspects. Apart from this, operators are also required to submit tariff details, AGR, LF and Spectrum payment details. All this information collectively will adequately arm DOT/TRAI to monitor that the benefits accruing to operators due to infrastructure sharing are indeed passed to subscribers in the right manner.

TATA TELESERVICES LTD

The potential benefits expected for the subscribers by infrastructure sharing have been listed in the previous sections.

As a part of ongoing compliances, all the operators are required to submit accounting separation reports which include a section on network related aspects. Apart from this, operators are also required to submit tariff details, AGR, LF and Spectrum payment details. All this information collectively will adequately arm DOT/TRAI to monitor that the benefits accruing to operators due to infrastructure sharing are indeed passed to subscribers in the right manner.

GTL INFRASTRUCTURE LTD

Benefits to the subscribers:

- Lower tariffs (as costs of infrastructure build and maintenance will be shared and hence reduced)
- Better quality of service

RELIANCE COMMUNICATIONS LTD

Consumers will benefit from network sharing in a number of ways. The possibility of infrastructure sharing would aid simultaneous launch of services by more than one operator and enhance the competition level. The expected cost savings would help service providers to develop more innovative products and services for consumers. With increase in competition increased price competition is also expected. Average services and product prices for consumers would be expected to be lower in sharing than in non-sharing environment. The biggest benefit to the subscriber would be better, cheaper and uninterrupted mobile services. The availability of services at all places will ensure continuity, the low CAPEX will result in less operating cost and more operators shall ensure availability of choice service provider. The operators will have to pass on the additional benefits derived from infrastructure sharing to the consumers to remain competitive in the industry.

The infrastructure sharing can be assessed by monitoring the coverage in far-flung areas at a faster pace and through increase in subscriber base in monthly subscriber base additions;

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

The first and the fore-most benefit that can be directly attributed to infrastructure sharing are the reduced CAPEX and OPEX for the telecom operators. The same has been discussed in the consultation paper and our comments above. Therefore, it is important that the telecom companies must pass on such reduction in cost to the consumer, in the form of lower tariffs. The Licenser or the Regulator may ask all such operators to file data/ figures relating to their monetary benefits from such shared sites including location/ number of shared suites. They may further be asked to disburse such monetary benefits, in form of special discounts, to all their consumers. The Licenser and the Regulator may then compare such data/ figures with actual benefit passed on to the consumer. The telecom operator who is found to be making defaults in such disbursements may be prosecuted/ penalized.

Mr. P. K. BASAK

QoS will be the single most attribute that will be better but also be subject to degradation if sharing disputes lead to operational difficulties. Consumers should further expect wider coverage / in-network roaming, more competitive pricing, newer services, etc. The competitors will possibly have less differentiation in service & therefore need to focus more on quality to retain the existing subscribers & acquire more. TRAI will be required to monitor the QoS more intensively at the shared sites, price offers, newer services (if any), backhaul sharing terms & conditions, etc.

- 12. *Please comment on measures and incentive schemes discussed and suggest steps to popularize infrastructure sharing in telecom sector both urban and rural?***

COAI

With a view to encourage infrastructure sharing in the economy, various incentive schemes could be looked at. As stated by the Authority in its consultation paper, a fixed amount per tower could be considered as an incentive and the same could be adjusted against the license fee. This will act as an incentive for service providers to offer passive infrastructure for sharing. This fixed amount should be provided even when a tower / Cell Site is shared between two operators. The fixed incentive can be arrived at through mutual consultation/ draft guidelines after consultation with all telecom operators as well as IP-I Service Providers.

Also, COAI has held the view that income earned from sharing of infrastructure should not be included in AGR. At present, **the income earned by the Cellular Mobile Service providers (CMSPs) from sharing of infrastructure is included in the Adjusted Gross Revenue (AGR) and hence licence fee is levied on the same.**

However, in the case of IP-1 Service providers, who set up and offer passive infrastructure for sharing, no license fee is paid on the income earned by these companies from sharing of infrastructure. This acts as an incentive and enables faster growth of telecom infrastructure in the country.

In order to give a boost to infrastructure sharing in the telecom industry, the income earned by Cellular Mobile Service Providers (CMSPs) from sharing of infrastructure also should not be included in Adjusted Gross Revenue AGR. **This policy initiative will act as an incentive for service providers to share infrastructure and will thus enable faster spread of affordable service to far-flung areas of the country.**

Further, various Civic authorities across India do not have a uniform policy/ guidelines in place for installation of cell sites. The Government should **ensure that detailed uniform policy guidelines are in place for installation of cell sites across India and that these policy guidelines encourage infrastructure sharing.**

The Government and TRAI may also advise / direct all Civic Authorities across the country to promote Infrastructure sharing by providing incentives to telecom operators and IP I service providers by way of reduced Permission fee and NIL levies in cases of multiple operators sharing a site.

AUSPI

In case, the said infrastructure is deployed in rural areas, over and above USO subsidy, the concerned service provider should get deduction of the revenue earned from wireless subscribers in such rural areas from the gross revenue for the purpose of calculating ADC as a percentage of AGR. Presently only wire line rural revenue is allowed as a deduction.

Further the revenue derived by the concerned service providers if providing services in rural areas by riding the infrastructure created by 3rd party, should be excluded from the AGR.

USO Fund has already embarked upon an infrastructure sharing tender which interalia seeks to ensure providing subsidy to IP-I and UAS providers for installation of sites and required infrastructure, which will enable mobile operators to provide services in rural areas. In order to Incentivise the operators further, some concessions in form of reduced tax, free spectrum for a limited period, availability of land at concessional rates, subsidized electricity, etc should also be provided.

BSNL

The financial incentive schemes for the rural areas are extremely critical for the growth of rural telecom. A suitable incentive scheme which creates sufficient financial incentive, alone will see the telecom growing in the rural areas and will popularize the infrastructure sharing in the rural areas. Also a similar financial incentive in the urban area will prove to be a catalyst for infrastructure sharing in the urban areas as well.

BPL MOBILE COMM.LTD

We are not in favour of any additional monetary incentive to be provided for infrastructure sharing. The very fact that the infrastructure sharing would result in reduction of Capex and Opex for all the parties; therefore

sharing the infrastructure will in itself be a big incentive. However, restricting the number to three for subsidy is anti-competitive and discriminatory.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

We recommend financial incentives for encouraging passive as well as active infrastructure sharing and our recommendations are covered in the responses above.

BHARTI AIRTEL LTD

a) A recent outlook paper by Fitch India, on Indian Telecom sector ("Sustainable Growth Ahead: Nov 2006") states that **majority of operators would remain negative free cash flow companies. In fact positive FCF companies may also become negative FCF due to heavy infrastructure expansions planned. Hence financial incentives indeed would help.**

The Mobile Sector requires huge investment of approx. 10 billion USD per annum. Based on above it is amply clear that financial incentives are required to increase the mobile penetration and push the telecom growth in higher trajectory. It will also reduce the overall financial burden on telecom operators.

b) With a view to encourage infrastructure sharing, the Regulator itself in its Consultation Paper has discussed about 2 possible ways of incentivising. One, sharing of license fee and the other as fixed amount for all the operators. Since, the Regulator itself has said that the license fee sharing might undermine the level playing field among the operators, hence it leaves us with the 2nd alternative i.e. a fixed incentive to UASL/CMTS operators as well as IP- I service providers.

The fixed incentive can be arrived at by mutual consultation /draft guidelines after consultation with all UASL/CMTS operators as well as IP-I Service Providers.

c) Another alternative can be a cash subsidy by way of service tax reduction in that circle where the infrastructure is shared.

d) In addition to the above, various Civic authorities across India do not have uniform policy/ guidelines in place for installation of cell sites. The Government should ensure that uniform policy/ guidelines are in place for installation of cell sites across India and that these policy guidelines encourage infrastructure sharing. The Local bodies and Authorities should

levy charges, if any, to recover cost of administration and not with the objective to finance the budget deficits.

e) The Government and TRAI should also advise / direct all Civic Authorities across the country to promote Infrastructure sharing by providing incentives to telecom operators and IP I service providers by way of reduced Permission fee and lower or NIL levies in cases of multiple operators sharing a site.

QUIPO TELECOM INFRASTRUCTURE LIMITED

The incentives suggested are adequate and welcome. It is felt that compulsions of cost in rural networks and environmental concerns in urban areas will enable to realign market forces towards an increasing interest in infrastructure sharing both active and passive

SPICE COMMUNICATON LTD

Government subsidiaries, reduction in WPC/ License charges, speedy SACFA clearances, more spectrum are few of the incentives should be considered.

VSNL

In case the infrastructure being shared is deployed in rural areas, over and above USO subsidy, the service providers sharing the infrastructure should also get deduction of the revenue earned from subscribers in such rural areas (or any suitable proxy thereof) from the gross revenue, for the purpose of calculating AGR. Further, such revenue should also be exempt from payment of licence fees.

USF has already embarked upon an infrastructure sharing tender which interalia seeks to providing subsidy to IP-I and UAS providers for installation of sites and required infrastructure to enable mobile operators provide services in rural areas. In order to further incentivise the operators, some concessions in form of tax, free spectrum for a limited period, availability of land at concessional rate, subsidized electricity, etc should also be provided.

TATA TELESERVICES LTD

In case the infrastructure being shared is deployed in rural areas, over and above USO subsidy, the service providers sharing the infrastructure should also get deduction of the revenue earned from subscribers in such rural areas (or any suitable proxy thereof) from the gross revenue, for the

purpose of calculating AGR. Further, such revenue should also be exempt from payment of licence fees.

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GTL INFRASTRUCTURE LTD

The measures suggested to popularize the concept of infrastructure sharing, viz some form of mandate, voluntary sharing or monetary incentives are ok, but we would recommend a suitable mix of all three modes. In congested city areas where the availability of infrastructure itself is severely limited, and where aesthetic or ergonomic considerations are equally important, we recommend mandated sharing. In rural areas, we agree with the idea of provision of subsidies, for the simple reason that it will not be economically viable for operators to go it alone.

RELIANCE COMMUNICATIONS LTD

The biggest dis-incentive to passive infrastructure sharing is that income from sale/lease of passive infrastructure is considered as part of AGR for the purpose to levying license fee. Sale/Lease of passive infrastructure is a non-licensed activity and should not be part of the AGR Just as the IP I registered companies do not pay license fee on revenue from sale/lease of passive infrastructure, the same should be extended to telecom service providers. . As stated above, the sharing of passive infrastructure should be mandated for at least three service providers. All passive infrastructure set up after a cut off date should be mandatorily shared with at least three service providers. Further the incentives should be built in to encourage sharing of infrastructure by more than three service providers. Necessary funds for this incentive may flow from the USO fund for sharing in all the areas. The TRAI may suggest ceiling on cost of sharing and stipulate a time frame to promote increased infrastructure sharing among the service providers.

The TRAI may also suggest suitable changes/ amendment in the legislation/ license condition to permit sharing of all types of active infrastructure also. The terms and conditions for sharing the infrastructure should be left to mutual agreements between the service providers.

Another measure to popularize infrastructure sharing would be to have a uniform policy by various civic authorities for installation of cell sites. Telecom service providers/ Infrastructure providers should be incentivized through reduced levies while sharing infrastructure.

Infrastructure sharing would result in substantial improvement in the quality of service, as operators would have additional capital in form of incentives and through cost reduction on account of infrastructure sharing. The faster rollout of services would help to tap unexploited markets and connect the hitherto unconnected areas at affordable rates for consumers while also resulting in additional inflow of revenue and higher collections for the government. Further the cost of shared infrastructure should be allowed as deduction in AGR calculation while paying revenue share.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

The Licensor may give special benefits to the telecom operators willing or sharing infrastructure in remote and rural areas in the following ways:

1. lower rate of AGR;
2. lower fees for renewal of existing licenses; and
3. refunds from USF;

The Licensor may also devise a “point based policy”, where in each telecom operator sharing the infrastructure, depending upon the sites, may be given points (on monthly/ quarterly/ yearly basis). Each point may be allocated a Rupee value. The operator may then be allowed to use/ redeem such points to procure/ bid for new licenses, renew existing licenses, take rebate in AGR payments, benefits from USF or any other manner that may deem fit.

Other than the aforementioned incentives, the TRAI may in consultation with the Ministry of Finance provide following incentives;

1. The companies engaged in infrastructure sharing should be provided an exemption from Dividend Distribution Tax and Minimum Alternate Tax;
2. It should be clarified that the sharing agreements will not amount to rendering of services and should not be subject to any service tax or stamp duties;
3. Any profits and gains arising out of such sharing agreements should be exempt from tax;
4. Installation of telecom towers should be exempt from the levy of central excise duty; and
5. The maintenance and operation of the tower should be free from the levy of services tax.

Mr. P. K. BASAK

Few suggestions: a) The MOST scheme could be developed further with the setting up of the fast track Dispute Resolution Cell from its own members (through election) to be headed by a retired Judge (appointed on consensus). Relevant disputes, if unresolved, will thereafter be dealt with the TDSAT b) The MOST initiative may further set up a Quality Cell to be chaired by a TRAI senior official c) The industry should further allocate under the MOST initiative funds to launch awareness campaign for the Consumers (using SMS, Ads, TUGs etc).

Given low Teledensity etc in Rural India it is desirable to mandate sharing of passive infrastructure. On balance it will be a step forward for India. Those who are successful in USO bidding will however be exempted. Others need to discharge the rural obligation - especially with new schemes & incentives in place. Such a mandate will have to be now seen in the context of large cost savings. USO may further review the eligibility terms by limiting participation to those who have shared.

Unless there are overriding technical reasons the number may not be limited to max 3 particularly in rural areas. This relaxation may further encourage the operators.

USO may consider offering incentives to the first two operators that reach out to uncovered rural areas. If the two share the level of subsidy may increase. This offer is to be open to all licensees.

In case of Critical Infrastructures, the sharing should ideally be a Voluntary Participation but failing that DOT should issue the mandate.

Participation & performance of operators will always vary. Rewarding operators with general incentives & specific benefits based on performance do not necessarily alter the characteristics of level-playing field!

13. Suggest innovative schemes to provide incentives for use of non-conventional sources of energy especially in rural areas?

COAI

The Government as well as the Regulator **should aggressively encourage the use of non-conventional energy sources**, especially in rural areas where stable and reliable power supply may not be available. The Department of Non Conventional Energy sources has already initiated a number of schemes under which incentives are available for use of non conventional sources of energy like **solar cells** etc. The use of **bio fuels**

also should be examined in an active manner. Application of these alternative sources of energy should be actively encouraged in telecom.

The above is very important in light of the fact that, the telecom network in India is spreading out at a rapid pace and the country already faces scarcity of power supply.

The Capital expenditure involved in setting up of non-conventional energy infrastructure should be fully subsidised by the appropriate authorities. Even after that the operations and maintenance expenses will be borne by the service providers.

AUSPI

Some of the ways of providing incentives for use of non-conventional sources of energy especially in rural areas are:-

- Providing financial incentives by way of reduced levies/ duties on the equipment bought.
- Provide tax incentives to the operators.
- Provide land at concessional rates.
- Wherever there is no electricity, the Government should provide free solar cells from USO fund to run the mobile services.

Incentive for backhaul services including usage.

BSNL

Non-conventional source of energy in the rural and semi-urban area is the crux of development in these areas. Non-conventional sources of energy in these areas should be promoted by USO fund as it is doing for the towers in the rural areas. It shall be better that the tower project also incorporates the respective non-conventional energy source provision.

BPL MOBILE COMM.LTD

Use of non conventional energy sources especially in rural areas where stable and reliable power supply may not be available, should be encouraged. The department of Non Conventional Energy sources has already initiated a number of schemes under which incentives are available for use of non conventional sources of energy. Higher Capex if any, for setting up non conventional energy infrastructure as compared to

the normal power supply arrangement should be offset against the licence fee payable.

Finally, we hope that the Authority would keep the above inputs in view while making their final recommendations to the Govt. on infrastructure sharing, both passive and active.

ESSAR TELECOM TOWER & INFRASTRUCTURE PVT. LTD.

According to our analysis, solar energy is still high cost in terms of the Capex required. We would recommend very strong incentives for the use of Solar energy as a clean energy alternative for Telecom sites in remote areas.

BHARTI AIRTEL LTD

The environmental concern itself calls for the need of Infrastructure sharing. In the light of 3G-technology rollout, more base stations may be required since the area covered by these base stations is smaller. Also, radio frequency generation from these stations is higher. Hence importance of network sharing is not only useful but critical for ecological dimension.

Lesser RF and GHG emissions (due to less sites and renewable energy technologies) would add to the overall benefits and enhance the corporate reputation as a social responsible organization. It will also maintain the aesthetic outlook of the area as already said by the Authority. In some cases if the aesthetic sites can be designed (a best practice internationally e.g. for conservation sites or national heritage places) it will only enhance the overall aesthetics of the area.

The authority has talked about the carbon-credit scheme, but it may not be as popular in Indian scenario since India does not have emissions trading scheme or platform (unlike Europe's Emissions Trading Scheme). Also it requires tracking of environmental performance data based on certain standards which companies may or may not be tracking.

Renewable energy can be very helpful in rural areas (e.g. villages) and where there is erratic power supply and can be a viable alternative to diesel generators. Because, by renewable energy consumption we are not only becoming environment-friendly, but also engaging and providing business opportunities for clean energy companies (i.e. these energy providers).

Thus, the capital expenditure involved in setting up of non-conventional energy infrastructure should be fully subsidized by the appropriate authorities.

To summarize, we would like to respectfully submit the following:-

- a) In order to encourage the Passive Infrastructure Sharing, a policy framework should be created by the Government / Regulator.
- b) The sharing of Back Haul should be encouraged / allowed among the service providers through appropriate Licence conditions. The sharing should be based on mutual agreed commercial terms and conditions, with a stipulated charging frame work including the ceiling limit, as defined by the Regulator
- c) The active infrastructure should be encouraged among the facility based service providers based on mutual agreement / requirements.
- d) Presently, the concept of MVNO is suitable for Indian Telecom market as the existing operators are able to meet the demands of all segments.
- e) The proposal of treating the "Point of Interconnect as well as infrastructure related to connectivity like Co-location charges, Rack, Space etc. " for all the services should actively be considered.
- f) The financial incentives should be given to UASL / CMTS as well as to IP-I Service Providers as it will improve the business model of all operators and will encourage the infrastructure sharing. The fixed amount may be arrived in a fair and transparent manner.
- g) The Regulator / Government should offer the financial incentives / subsidy, as much as possible, to boost the usage of renewable energy.

QUIPO TELECOM INFRASTRUCTURE LIMITED

The Department of Non conventional sources of energy and all state Govts. have schemes for encouraging ecologically beneficial alternatives. These can be availed of by IP I. Hybrid power supply models, Solar Energy and Solar powered equipment like the BTS should be encouraged and given such benefits in both project implementation and running costs.

SPICE COMMUNICATON LTD

Solar Power, Bio Gas, Wind energy, bio fuels etc. should be encouraged to be used through incentives.

VSNL

Following are some proposed ways of providing incentives for use of non-conventional sources of energy, especially in rural areas:

- a. Financial incentives by way of reduced levies/duties on the equipment bought
- b. Tax incentives to the operator
- c. Land at concessional rates
- d. Subsidy from USO fund

TATA TELESERVICES LTD

Following are some proposed ways of providing incentives for use of non-conventional sources of energy, especially in rural areas:

- a. Financial incentives by way of reduced levies/duties on the equipment bought
- b. Tax incentives to the operator
- c. Land at concessional rates
- d. Subsidy from USO fund

GTL INFRASTRUCTURE LTD

Some possible schemes could be:-

- Provide solar panels and installation at free/subsidized rates
- In areas where this is suited, windmills may be installed free of cost
- Expert help/consultancy be made available online, or on call
- Waiver of all duties/taxes in case non-conventional sources of energy are used.

RELIANCE COMMUNICATION LTD

There are numerous incentives which are provided by the central and state governments for use of non-conventional sources of energy for generation. These incentives include:

- (i) Exemption from excise and other levies on the equipments.
- (ii) Availability of land at subsidized rates.
- (iii) Access to funds earmarked for non conventional sources of energy for use of energy saving devices by the telecom service providers/infrastructure providers such as use of solar cells, use of green shelters and wind energy

Carbon credits: For use of non-conventional sources of energy, award of Carbon credits should be provided to the operators by the government.

RAHUL GOEL & ADITYA TIWARI, ADVOCATES

Same as discussed in # 11.

Mr.P. K. BASAK

Possible schemes: a) on completion of infrastructure build discount / duty relief to capex per rural site b) weightage score per shared site that will discount Gross Adjusted Revenue c) greater no of such sites will contribute to better rating to the licensee (such operators may also be categorized as the *preferred* ones like preferred customers in banking).
