

**Q1. How should the market in the access segment be defined?**

**Comment:**

Two approaches are possible. One could define market based on the product which in this case is service or one could define it based on the access media. These are discussed below and suggested approach is given.

The service provided in its simplest form is voice communication but in its advanced and evolving form it is convergent service. The convergence could be triple play with voice, data (internet) and video or more meaningfully quadruple play with voice, data (internet), video and mobility. In the triple play mode fixed wire-line (or wireless) and cellular mobile services could be regarded as substitutable. In the quadruple play mode only wireless services with mobility qualify. In terms of the latter, technologies such as GSM, CDMA, WCDMA, EVDO, IEEE 802.16e, IEEE 802.20, etc. qualify.

Access media based approach distinguishes wire-line from wireless but differs from the quadruple play approach in the sense that wireless media offering all services (fixed or mobile) are covered. The reason for distinguishing the wire-line and wireless markets would be (i) almost all growth is occurring using this media, (ii) spectrum is a major consideration and due to its limited availability, it is one of the major factors which defines the market evaluation of an operator and therefore greatly influences mergers and acquisitions and (iii) in our country liberalization occurred when fixed line growth is saturating due to impact of cellular mobile service. Fixed connections can be provided by using specific fixed wireless technologies such as **IEEE 802.16d as well as cellular mobile technologies**. So far as spectrum is concerned even the 3.3 and 3.4 GHz which is being talked of as the spectrum for the deployment of IEEE 802.16d technology, is permissible for both fixed and mobile services as per Radio Regulations. Therefore, for purposes of mergers and acquisition, this spectrum has to be treated as mobile spectrum and hence falls in the quadruple play capable category. Only the spectrum which is specifically assigned for fixed services can be separated from this category. Keeping these aspects into consideration, categorization wireless and wire-line becomes a special case of the more general quadruple play and non quadruple play categorization.

Thus it is suggested that the markets be defined as 'Quadruple play capable' market and 'Non quadruple play capable' market. Any attempt at this stage to define the wireless market into two segments viz. '< 3G' and '3G and more' is bound to create a complication soon as in-band (800, 900 and 1800 MHz) '3G and more' equipment get deployed. Any attempt not to permit this deployment will be extremely retrograde by not promoting greater efficiency of spectrum utilization.

**Q2. Whether subscriber base as the criteria for computing market share of a service provider in a service area be taken for determining the dominance adversely affecting competition. If yes, then should the subscriber base take into consideration home location register (HLR) or visited location register (VLR) data? Please provide the reasons in support of your answer.**

Disproportionately high number of subscribers with an operator gives him the strength to dictate terms in the market. Therefore, this is an acceptable criterion despite the increasing use of data services.

**Q3. As per the existing guidelines, any merger/acquisition that leads to a market share of 67% or more, of the merged entity, is not permitted. Keeping in mind, our objective and the present and expected market conditions, what should be the permissible level of market share of the merged entity? Please provide justifications for your reply.**

The objectives for merger which the government should be interested in supporting should be those which lead to greater efficiency of operation and induction of modern technologies. The other objective of acquisition or merger for an operator would be to be able to achieve enough muscle to manipulate the market. An operator with a market share of 45% to 50% can expect to do so. The positive aspects of

merger/acquisition listed above can easily be met within this limit since the state of competition in the market today allows considerable distribution of market share between several companies. As mergers and acquisitions proceed, the size of each merged entity is expected to grow and when the total number of operators reaches around 4, additional mergers are expected to cross this limit and therefore get automatically rejected.

Incidentally, it is desirable to introduce the concept of Significant Market Power (SMP) with associated regulatory requirements to be met by operators possessing SMP, as soon as an operator reaches 33% market share.

**Q4. Should the maximum spectrum limit that could be held by a merged entity be specified?**

- a. If yes, what should be the limit? Should this limit be different for mergers amongst GSM/GSM, CDMA/CDMA & GSM/CDMA operators? If yes, please specify the respective limits.**
- b. If no, give reasons in view of effective utilization of scarce spectrum resource?**

Spectrum optimization issue comes up when two companies operating similar services and using spectrum which can be combined, merge. The situation becomes more complex if two merging companies use different technologies such as one uses GSM and the other uses CDMA. Similarly, complication also arises if a company, say, offering 3G services in 2.1 GHz band (future scenario) merges with a company operating say GSM in 900 MHz band. In such a situation, with the availability of 3G equipment in various bands, the spectrum parameters change totally from those when 2G or 2.5G services were being offered.

If spectrum beyond the contracted minimum (this is de-facto 10 MHz for GSM and 5 MHz for CDMA) is auctioned, operators would have acquired the spectrum at market price and therefore when they merge, they would be occupying paid for spectrum. If at this stage, spectrum trading is permitted, optimum utilization of spectrum will occur as the needy that could not get spectrum from the government auction, would also get

their required spectrum. In this scenario, government is really not a loser as it would have got fair price for spectrum when it auctioned it in the first place.

Considering the above, it is felt that no spectrum limit should be prescribed. Based on the available information, it appears that spectrum limit is not practiced in most countries. (This last statement may need verification from the more detailed data, if available with TRAI).

If this approach is found to be too radical and government would still like to consider putting a limit, the limit has to keep in mind the following:

- By 2010 the size of the network is expected to be more than double which means that if the number of operators remain the same, the requirement of spectrum will increase substantially. (It will not be double since economies of scale and the possible use of more efficient equipment such as 3G (with a projected 2 times improvement over 2G equipment for voice services) will make the spectrum vs. number of customers a non-linear function).
- If Mergers and Acquisition guidelines prescribe the minimum number of operators to be 3 or 4, each operator size will be bigger. Already some operators in Delhi and Bombay need well over 10 MHz for good quality service network while meeting additional customer demands.

Thus, clearly the present limit of 15 MHz will not suffice and we may need to set it at 20 or 25 MHz. Considering the present levels of spectrum allocation, such a limit is as good as putting no limit at all as suggested earlier from different logic.

**Q5. Should there be a lower limit on the number of access service providers in a service area in the context of M&A activity? What should it be, and how should it be defined?**

Growth in the telecom sector has largely been due to competition (and the presence of a major public sector operator). It is therefore necessary for future sustained

growth that the number of players should be at least 3 besides a public sector player. If the public sector player is privatized, it will ensure at least 4 players. By maintaining this number, chances are good that unfair cooperation on tariffs, etc. will not occur and the market will continue to operate in a competitive frame.

**Q6. What are the qualitative or quantitative conditions, in terms of review of potential mergers or acquisitions and transfers of licenses, which should be in place to ensure healthy competition in the market?**

While reviewing potential mergers or acquisitions, HHI and its change should be closely watched along with the concentration ratio CR2, besides the subscriber base related market share limit already discussed.

**Q7. As a regulatory philosophy, should the DOT and TRAI focus more on ex post or ex ante competition regulation, or a mix of two? How can such a balance be created?**

The telecom market is not yet a fully mature and stabilized market in our country. There would always be a need for a review of policy and regulatory approaches. The philosophy therefore has to be a mix of ex post and ex ante based on the assessment of the Authority.

## **Substantial Equity**

**Q1. To Q5.**

**Comment:**

Obviously the purpose of looking at the issue of substantial equity arises to ensure that the markets are not distorted in an **indirect manner** besides the checks on possible direct manner of distortion by managing the market share, HHI and concentration discussed in the previous chapter. This requires that any company or group of companies or individuals is not able to exercise indirect powers on the market. The present limit of 10% should therefore be retained and legal experts should work out the conditions needed in the merger/acquisition guidelines to prevent the possibilities of indirect control. These controls should be equally applicable to government or government owned companies.

## **Permitting combination of technology under same license**

**Q1. In view of the fact that in the present licensing regime, the initial spectrum allocation is based on the technology chosen by the licensee (CDMA or TDMA) and subsequently for both these technologies there is a separate growth path based on the subscriber numbers, please indicate whether a licensee using one technology should be assigned additional spectrum meant for the other technology under the same license?**

**Q2. In case licensee is permitted, then how and at what price, the licensee can be allotted additional spectrum suitable for the chosen alternate technology?**

**Comments on Q1 and Q2:**

The UAS License is for providing access services and need have no bearing with the technology used. Two technologies CDMA and TDMA have been quoted in this question whereas there is no reason why a service provider will not use WiMax or a hybrid OFC and WiFi or any other solution. This issue has clearly arisen because of the

perceived shortage of spectrum existing today for CDMA and GSM technologies due to the inability to get more spectrum vacated in time. Thus, there should be no bar for a given licensee of UASL to provide access services using any technology.

When it comes to spectrum allocation, government will be within its rights to decide that only the first contractually obligated spectrum (for one technology only) will be given free of cost (or included in the entry fee) and any further spectrum beyond that contracted value will be sold in the market through the auction process. This may be for the same technology or for any other technology. This approach is based on the thesis that UASL provides a licensee permission to offer access services and the government, with a view to facilitate the services, offers certain amount of spectrum along with the license, to launch the network. Any spectrum beyond that will be based on market prices. A note of caution is necessary here. For ensuring the spectrum rates to be reasonable, government will have to carry out an extensive spectrum re-farming exercise to make it more freely available. Government could also open up spectrum trading market to ensure optimum utilization of spectrum.

**Q3. What should be the priority in allocation of spectrum among the three categories of licensees given in (Para) 4.16 of the chapter?**

**Comment:**

Using the process of spectrum allocation beyond the contracted minimum only complicates the problem both with regard to fixing of price and fixing priorities between different categories of operators. Instead, if the processes of spectrum auction and spectrum trading are followed, the problem becomes lot simpler. In addition, an incidental benefit would be that the process of genuine mergers and acquisitions will get a fillip.

**Q4. Whether there should be any additional roll out obligations specifically linked to the alternate technology, which the service provider has also decided to use?**

**Comment:**

Roll out obligations are included for two purposes namely

- a. To ensure that network does not remain limited to the more profitable areas and other areas also get the benefit of services offered by a UAS licensee.
- b. Spectrum hoarding does not occur.

The problem with this approach is that unless the penalty conditions associated with spectrum allocation and authorization are very stringent (for example summary withdrawal of spectrum if not utilized within say 9 months), chances are that operators will prefer to pay up the fines rather than invest capital in the network unless it is quite remunerative.

However, the government can continue to apply the same roll out conditions for the new technology despite the operator having paid market price for spectrum.

**Q5. Lastly, as such service providers would be using two different technologies for providing the mobile service, therefore what should be the methodology for allocation of future spectrum to him?**

**Comment:**

Future allocation of spectrum irrespective of the technology, beyond the contracted value should be based on auction determined prices. For this no subscriber based criterion should be used. In stead, as and when a spectrum becomes available, it should be auctioned. Spectrum-trading should be introduced to ensure fullest utilization of all available spectrum.<sup>2</sup>

## **Roll out Obligations**

**Q1. Should present roll out obligations be continued in the present form and scale for the Access service providers or should roll out obligations be removed completely and market forces be allowed to decide the extent of coverage? If yes, then in case it is not met, existing provision of license specifies LD charges up to certain period and then cancellation of license. Should it continue or after a period of LD is over, enhancement of LD charges till roll out obligation is met. Please specify, in case you may have any other suggestion.**

Past experience clearly shows that roll out obligations attempted to be implemented through the existing penalty schemes have failed miserably unless a clear business case becomes available through some means such as USF support. There are obviously two approaches possible. The first one would consist of a combination of penalty and incentive on the lines discussed in the consultation paper with rising penal rates beyond a certain point. (The increasing rate concept should be carefully examined from legal and ethical angle when modifying the license conditions of the existing licensees). The other approach would be to create environment for investment through schemes such as easy credit, shared infrastructure, etc. The possible arrangements could include surplus funds in USF to be given on no interest or negligible interest loans to entrepreneurs on the lines of IMF/World Bank Loans. In other words, besides continuing with the ongoing infrastructure sharing schemes, USF acts as a Rural Telecom Finance Bank. It may be recalled that in France, during the seventies when push was given to telecom sector on the direct intervention of the then President, a Telecom Finance Bank was created which helped provide funds for investments.

**Q2. Is there a case for doing away with performance bank guarantees as the telecom licensees are covered through the penalty provisions, which would be invoked in case of non-compliance of roll out obligations?**

No comment.

**Q3. Should roll out obligations be again imposed on the existing NLD licensees? If yes, then what should be the roll out obligations and the penalty provisions in case of failure to meet the same?**

The considerations discussed in the reply to Q1. above apply here also. It is undeniable that backhaul infrastructure in rural areas is badly needed. However, due to current lack of business case in less commercially developed areas and with a view to conserving resources, it is advisable that a single or at the most two shared networks be created with active financial support of the government or preferably the Telecom Finance Bank suggested above. It will be necessary to mandate the sharing of backhaul infrastructure at rates fixed by TRAI. In fact, the existing operators with such infrastructure should have seen the business case earlier and offered bandwidth commercially at rates without regulatory intervention. However, since this has not happened, regulatory intervention has become necessary where existing resources and investments are fully protected and no legal complications arise out of regulatory intervention.

**Q4. What additional roll out obligations be levied on ILD operators?**

As long as the landing station facilities are shared and the rates are regulated by TRAI, there is no need for any new or additional roll out obligations.

**Q5. What should be the method of verification of compliance to roll out obligations?**

No comments.

**Q6. What indicators should be used to ensure Quality of Service?**

There is no reason to change or modify the existing indicators.

**Q7. As the licensees are contributing 5% of AGR towards the USOF, is it advisable to fix a minimum roll out obligation? If yes, what should be that? If no, whether the Universality objectives may be met through on USOF or any other suggestions?**

See reply to Q1 above.

**Q8. In case of rural roll out obligation, whether the number of BTS in a certain area (is) a viable criterion for verification of roll out obligation?**

In case roll out obligation (in whatever form) is retained, number of BTS's in a rural area could be one of the monitoring parameters but it is bound to be misused. It is for the USF Administration to see how they can check mis-information without getting totally bogged down in the paper work generated.

**Q9. What should be the incentives and penalties w.r.t. rural roll out obligation?**

Already discussed in the reply to Q1 above.

## **Determining a cap on number of Access Providers in each service area.**

**Q1. Should there be a limit on number of access service providers in a service area? If yes, what should be the basis for deciding the number of operators and how many operators should be permitted to operate in a service area?**

It has been stated in the consultation paper that based on the HHI in various circles, it is evident that a high level of competition already exists in the market implying perhaps that limiting the number of operators will not hurt the sector. It has also been stated that while deciding on the number of access service providers it is imperative to examine the availability of spectrum to existing and future licensees. The key issues to be examined by the licensor are mentioned to be i) competitive scenario, ii) financial sustainability and iii) availability of spectrum. An argument has also been made out that increasing the number of operators will harm the quality of service. It is also stated that because number portability is not there, gains from introduction of a new service provider may not materialize.

No matter how many other arguments and reasons are put across to justify limiting the number of access service providers, the real reason is only one namely spectrum availability. Let us therefore concentrate only on this and accept what most economists say that is that regulators and licensing regime should not decide the business case and decision of any operator. If a new operator finds it viable to operate in a market then licensing regime should not come in the way. We may add here that the licensing

policy should not also add any incentives, however unintentional, for those service providers who may see an opportunity in license trading for making a quick buck.

The issue to be tackled therefore is spectrum and its availability and it is being suggested that by limiting the number of service providers through regulatory or licensing regimes, this problem can be sorted out or at least minimized. All sorts of arguments as have been put across in the consultation paper to support this thesis.

Do these arguments hold water? Let us for a moment assume that the number is limited to the number of existing service providers. (It is presumed that the government does not propose to reduce the validity period of the existing licenses with a view to prematurely retiring some of the existing operators). Let us assume this number is 7 in city A. At this stage a new service provider appears on the scene with a new technology say WiMax 802.16e and offers the same voice service besides a few other services. Can we really say that this is not a new (8<sup>th</sup>) service provider in the voice domain in that city. This service provider, besides providing broad band access will also provide mobile voice communication services and therefore compete with the existing service providers. It has been mentioned that HHI is already such that intense competition exists and no advantage is gained by having a new operator. On the basis of this logic will the licensor reject the induction of this new technology? Some may argue that WiMax is a new service (broadband access) and uses a different spectrum band where there is no limitation and therefore it should be permitted. However, one can not lose sight of the fact that the license is really for access services. Again, this is not the only case. The proposed auction of 2.1 GHz band for 3G services may bring in new service providers who will attract a large number of current subscribers of cellular operators, particularly the high ARPU customers. In addition, it may be noted that in this response to the consultation paper, it has been mentioned elsewhere that more efficient voice communication technologies are now available in the same bands where 2G services are offered e.g. 3G technology in 800, 900 and 1800 MHz bands. Surely existing operators can not be denied the possibility of using more efficient technology for the services being offered.

Thus, putting a limit on the number of service providers will unnecessarily introduce anomalies and complications in the licensing process and will also not offer any relief on the spectrum front since already there are more service providers than what can be accommodated in the available spectrum in the light of rapidly growing demand.. The natural course taken by the markets through mergers and acquisition is a hassle free approach to market consolidation. As for the problem of shortage of spectrum different approaches have to be followed including quick induction of 3G services in 2.1GHz and 450 MHz ranges to temporarily relieve pressure on the 800.900 and 1800 MHz ranges, WiMax services in the 3.3 and 3.5 GHz ranges, incentivizing the use of fixed-mobile convergence for picking up in-building traffic on optic fibre cables, greater deployment of in-building low power BTSs, etc. These are not discussed in detail here since methodology of spectrum management is not the subject matter of this question.

**Q2. Should the issue of deciding the number of operators in each service area be left to the market forces?**

Yes, subject to a minimum number of 4 as discussed earlier.