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Telecom Regulatory Authority of India
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TRAI Consultation paper No. 6/2009 – October 16, 2009
Overall Spectrum Management and review of license terms and conditions

Sir,

It would help to have a logical framework that defines overall objectives, prioritizes issues, and structures and organizes issues and questions. This would facilitate analysis and response, as we have attempted below.

We begin by responding to Question 57 as a preamble to all the questions:
57. What in your opinion is the desired structure for efficient management of spectrum?
[This question addresses only one of two essential criteria, efficiency. The other criterion is effectiveness; both need equal emphasis.]
Please see separate attachment for answers to Questions 1-56.

Status

Currently, communications services in India comprising Internet, voice and SMS have the following attributes:

a) Low broadband usage, with relatively high prices: eg, direct satellite TV subscriptions at Rs. 200/month, compared with 512 kbps Internet at Rs. 1,000/month.

b) Fragmented spectrum allocation for exclusive use by each operator in a service area.

c) Very high intensity of spectrum use by operators compared with international norms because of constrained availability.

d) Too many operators per service area (11-14 or more [15-16 with all potential operators with GSM and CDMA counted separately], versus the global average of 4-5).

[For details on (b), (c) and (d), please see: 'An assessment of spectrum management policy in India', David Lewin, Val Jervis, Chris Davis, Ken Pearson, Plum Consulting, December 2008 http://www.plumconsulting.co.uk/pdfs/GSMA%20spectrum%20management%20policy%20in%20India.pdf]

Needs

Our needs are:
a) good services for Internet, voice and SMS,
b) at reasonable prices, eg, comparable pricing for TV and broadband,
c) accessible from/to most households across the country.

The need is especially great in rural areas, as broadband can be the medium for delivery of essential services like education (from basic to advanced to vocational training and Continuing Education at all levels, including high-level professional CE), health (again, from basic diagnostics and monitoring at home, to advanced care at adequately equipped centres), and security and law-and-order services at significantly higher levels than is possible without excellent communications infrastructure.

In view of the above, we suggest that the Government of India consider adopting the following policy goals in the public interest (and therefore, that where appropriate, the TRAI set these objectives/make appropriate recommendations to the GOI).

Suggested Policy Goals/Objectives [based on needs]

1. Adopt the criteria of long-term net benefits in the public interest for decisions, eschewing short-term cash collections from auctions and fees.

2. An approach to policies for telecommunications services (not for broadcasting) that limits the number of operators per service area in line with international experience, because of the economics of networks. [This implies an explicit reversal of prior policies to maximize competition, and requires allowing for consolidation through mergers and acquisitions.]

3. Access to broadband (to be defined as at least 512 kbps in keeping with international norms) at all feasible locations in the country for all users.

4. Develop incentives and penalties favouring good rural service provision, with the emphasis on broadband: an Administered Incentive Pricing mechanism.

5. Explore ways to structure policies to reduce costs/maximize utility through facilities and resource sharing, so that prices can be reduced while maintaining good scope for investment from growth and profits.

This implies two areas of exploration:

a) Shared use of facilities and equipment/networks;

b) Shared use of spectrum.

i. This is best done by collaborative consultations between experts (from the GOI, private sector and academia), operators, equipment providers, and government. Without the requisite interdisciplinary skills combined with operating expertise and investment capability, the effort is too complex for an iterative, serial consultation process.

ii. Even within the GOI, this requires interdisciplinary and cross-jurisdictional convergence, both to develop solutions as well as to implement them.

iii. This also needs GOI initiatives to invite companies like Ericsson, Nokia, Motorola and Qualcomm as well as Google and Intel, possibly cable companies like Liberty Global, and electricity companies that deliver Internet through their networks.

iv. The GOI also needs to depute experienced representatives from various ministries and departments including the WPC, the Defence Services, and specialist agencies such as the DRDO/NTRO.

[Please see 'Managing Spectrum' in the *Business Standard* November 5, 2009, and related references: http://organizing-india.blogspot.com/2009/11/managing-spectrum.html]

6. Monitor operations online and intervene actively where revenues (the totality of rates/tariffs) are far above total costs, i.e., profits are unreasonable. This is a necessary adjunct to accepting a monopolistic/oligopolistic market structures.

Suggested Approach

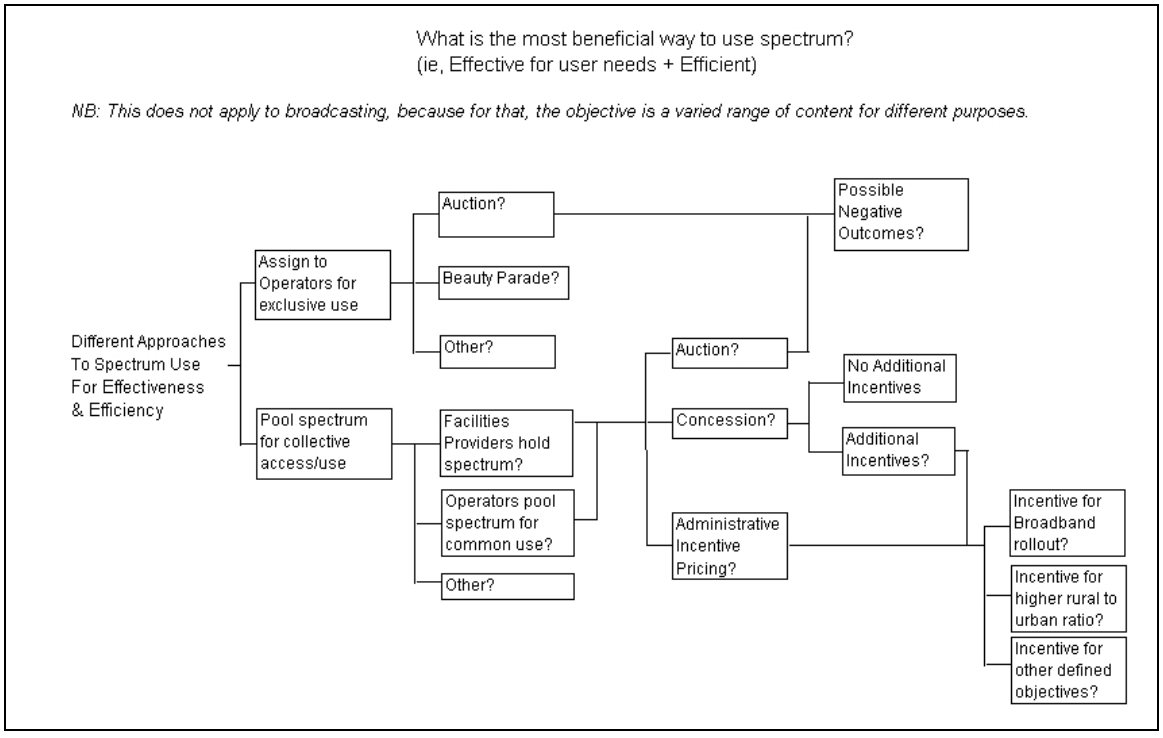
The use of a decision tree as in the 'Issue Map for Spectrum & Broadband' below (please see Exhibit) facilitates a logical sequence and prioritization in

exploring alternatives. (Please note that this is for broadband, voice and SMS, and not for broadcasting.) A similar exploration process for networks and facilities (sharing versus exclusive use for delivery) could follow. However, stakeholders should be free to use any analytical process to improve on this in the common interest.

Once decisions are taken on these two issues (spectrum and network/ facilities sharing), other issues like pricing and consolidation can be logically addressed based on these decisions, probably within the scope of existing laws and regulations.

New regulations or laws should be considered only after comprehensive analysis on the lines of Project LARGE (Legal Adjustments and Reforms for Globalising the Economy by Sh. Bibek Debroy).

Exhibit: Issue Map on Spectrum & Broadband



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Attached: Questions 1-57

Attachment – Question 1-57

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Chapter 1

Spectrum requirement and availability

1. Do you agree with the subscriber base projections? If not, please provide the reasons for disagreement and your projection estimates along with their basis?

Do not disagree.

2. Do you agree with the spectrum requirement projected in ¶ 1.7 to ¶1.12? Please give your assessment (service-area wise).

Agree if exclusive bands of spectrum are used by different operators, and the spectrum requirement is linked to subscribers. Disagree if common use of spectrum is adopted. Please see preamble (reply to Question 57) for details of shared/pooled spectrum approach.

3. How can the spectrum required for Telecommunication purposes and currently available with the Government agencies be re-farmed?

a) By rationalizing usage, as advocated in the preamble for commercial operators, by pooling spectrum for common use where possible.

b) By inducting equipment that allows more efficient usage and usage of other bands.

4. In view of the policy of technology and service neutrality licences, should any restriction be placed on these bands (800,900 and 1800 MHz) for providing a specific service and secondly, after the expiry of present licences, how will the spectrum in the 800/900 MHz band be assigned to the operators?

a) Please see suggestions on shared/pooled spectrum as above.

b) In the event that common use of spectrum is infeasible/not accepted by the Government of India, and exclusive bands of spectrum are assigned to operators as is the practice now, work out ways to consolidate fragmented bands (other than through M&A) for operators, to enable operators to hold contiguous bands for greater efficiency, and explore shared use of pooled spectrum.

5. How and when should spectrum in 700 MHz band be allocated between competitive services?

Preferred method: for common use (can be pooled or shared even if assigned for exclusive use, immediately).

6. What is the impact of digital dividend on 3G and BWA?

Should extend its reach and access because of lower costs.

Chapter 2
Licensing issues

7. Should the spectrum be delinked from the UAS Licence? Please provide the reasons for your response.

If spectrum is treated as a common resource, the logical requirement is for a linkage that is not dependent on ownership, but to access for service delivery, i.e., common access.

8. In case it is decided not to delink spectrum from UAS license, then should there be a limit on minimum and maximum number of access service providers in a service area? If yes, what should be the number of operators?

Follow global practice: do not exceed five operators in any service area unless there are compelling reasons to do so.

9. What should be the considerations to determine maximum spectrum per entity?

Minimum contiguous band for effective rollout and efficient delivery, i.e., inexpensive capital outlay for equipment and towers/network while maintaining Quality of Service.

10. Is there a need to put a limit on the maximum spectrum one licensee can hold? If yes, then what should be the limit? Should operators having more than the maximum limit, if determined, be assigned any more spectrum?

This depends on the overall approach to spectrum management, i.e., common use, or exclusive use. The logic for a limit is effective delivery capability at 'normal' cost. There is no logic for assigning more than this. However, if spectrum is for common/shared use, the only criterion is throughput/capacity.

11. If an existing licensee has more spectrum than the specified limit, then how should this spectrum be treated? Should such spectrum be taken back or should it be subjected to higher charging regime?

As in No. 10. If common/shared spectrum use is adopted, there needs to be a transition worked out, as in the transition to revenue sharing.

12. In the event fresh licences are to be granted, what should be the Entry fee for the license?

The principles followed should be:

a) Low license fees to minimize access costs.
b) Provided licenses are delinked from spectrum and few in number, there need to be strict rollout requirements.
c) Incentives for broadband and rural coverage in the form of a structured Administrative Incentive Pricing mechanism.
d) Penalties for failure.

13. In case it is decided that the spectrum is to be delinked from the license then what should be the entry fee for such a Licence and should there be any roll out condition?

As in No. 12.

14. Is there a need to do spectrum audit? If it is found in the audit that an operator is not using the spectrum efficiently what is the suggested course of action? Can penalties be imposed?

a) Operating attributes should be monitored online on a continuous basis.
b) Spectrum use probably needs to be monitored as an operating attribute.
c) Penalties and incentives are needed, including forfeiture for continued transgression.

15. Can spectrum be assigned based on metro, urban and rural areas separately? If yes, what issues do you foresee in this method?

This needs to be considered only if common/pooled usage is decided against. With common use or sufficiently large blocks/bands of spectrum, no problems are likely to arise.

16. Since the amount of spectrum and the investment required for its utilisation in metro and large cities is higher than in rural areas, can asymmetric pricing of telecom services be a feasible proposition?

Yes.

M&A issues

If the common/shared use approach is adopted, M&A can be under existing laws and regulations.

17. Whether the existing licence conditions and guidelines related to M&A restrict consolidation in the telecom sector? If yes, what should be the alternative framework for M&A in the telecom sector?

18. Whether lock-in clause in UASL agreement is a barrier to consolidation in telecom sector? If yes, what modifications may be considered in the clause to facilitate consolidation?

19. Whether market share in terms of subscriber base/AGR should continue to regulate M&A activity in addition to the restriction on spectrum holding?

20. Whether there should be a transfer charge on spectrum upon merger and acquisition? If yes, whether such charges should be same in case of M&A/transfer/sharing of spectrum?
21. Whether the transfer charges should be one-time only for first such M&A or should they be levied each time an M&A takes place?
22. Whether transfer charges should be levied on the lesser or higher of the 2G spectrum holdings of the merging entities?
23. Whether the spectrum held consequent upon M&A be subjected to a maximum limit?

Spectrum Trading
24. Is spectrum trading required to encourage spectrum consolidation and improve spectrum utilization efficiency?

At present, trading is required to allow consolidation. However, if a comprehensive approach is taken to spectrum use, and especially if common use through common access is established, this set of problems will no longer exist after a transition period. Nor will there be any shortage of spectrum.

25. Who all should be permitted to trade the spectrum ?

As in No. 24.

26. Should the original allottee who has failed to fulfill "Roll out obligations" be allowed to do spectrum trading?

There should be penalties and forfeiture for failure to meet rollout obligations, and clawbacks as an interim measure during the transition.

27. Should transfer charges be levied in case of spectrum trading?
28. What should be the parameters and methodology to determine first time spectrum transfer charges payable to Government for trading of the spectrum? How should these charges be determined year after year?

29. Should such capping be limited to 2G spectrum only or consider other bands of spectrum also? Give your suggestions with justification.

This question assumes there is a difference in "2G spectrum" and other spectrum, which is incorrect. The difference is in equipment that has evolved in different phases along different bands. Spectrum should be treated as technology-neutral for the purposes of service delivery. Any service should be deliverable on any band, subject to interference limitations.

30. Should size of minimum tradable block of spectrum be defined or left to the market forces?
31. Should the cost of spectrum trading be more than the spectrum assignment cost?

Spectrum sharing

These questions are addressed in the preamble in the cover note.

32. Should Spectrum sharing be allowed? If yes, what should be the regulatory framework for allowing spectrum sharing among the service providers?
33. What should be criteria to permit spectrum sharing?
34. should spectrum sharing charges be regulated? If yes then what parameters should be considered to derive spectrum sharing charges? Should such charges be prescribed per MHz or for total allocated spectrum to the entity in LSA?
35. Should there be any preconditions that rollout obligation be fulfilled by one or both service provider before allowing the sharing of spectrum?
36. In case of spectrum sharing, who will have the rollout obligations? Giver or receiver?

Perpetuity of licences
37. Should there be a time limit on licence or should it be perpetual?
38. What should be the validity period of assigned spectrum in case it is delinked from the licence? 20 years, as it exists, or any other period
39. What should be the validity period of spectrum if spectrum is allocated for a different technology under the same license midway during the life of the license?
40. If the spectrum assignment is for a defined period, then for what period and at what price should the extension of assigned spectrum be done?
41. If the spectrum assignment is for a defined period, then after the expiry of the period should the same holder/licensee be given the first priority?

Uniform License Fee
42. What are the advantages and disadvantages of a uniform license fee?
43. Whether there should be a uniform License Fee across all telecom licenses and service areas including services covered under registrations?
44. If introduced, what should be the rate of uniform License Fee?

License fees should be treated as part of the overall scheme of Administered Incentive Pricing.

Chapter 3
Spectrum assignment
45. If the initial spectrum is de-linked from the licence, then what should be the method for subsequent assignment?

Please see comments on common/shared use in the preamble in the cover note.

46. If the initial spectrum continues to be linked with licence then is there any need to change from SLC based assignment?

The SLC basis for spectrum assignment gives rise to many distortions and is not in line with international practices.

47. In case a two-tier mechanism is adopted, then what should be the alternate method and the threshold beyond which it will be implemented?
48. Should the spectrum be assigned in tranches of 1 MHz for GSM technology? What is the optimum tranche for assignment?

49. In case a market based mechanism (i.e. auction) is decided to be adopted, would there be the issue of level playing field amongst licensees who have different amount of spectrum holding? How should this be addressed?
50. In case continuation of SLC criteria is considered appropriate then, what should be the subscriber numbers for assignment of additional spectrum?
51. In your opinion, what should be the method of assigning spectrum in bands other than 800, 900 and 1800 MHz for use other than commercial?

Spectrum pricing
52. Should the service providers having spectrum above the committed threshold be charged a one time charge for the additional spectrum?
53. In case it is decided to levy one time charge beyond a certain amount then what in your opinion should be the date from which the charge should be calculated and why?
54. On what basis, this upfront charge be decided? Should it be benchmarked to the auction price of 3G spectrum or some other benchmark?
55. Should the annual spectrum charges be uniform irrespective of quantum of spectrum and technology?
56. Should there be regular review of spectrum charges? If so, at what interval and what should be the methodology?

Structure for spectrum management
57. What in your opinion is the desired structure for efficient management of spectrum?

Please see the preamble in the cover note.

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