Responses to Questions in theTRAI Consultation Paper on Reserve Price for Forthcoming Spectrum Auctions

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Introductory Remarks

TRAI's consultation and recommendations on a new reserve price for future spectrum auctions will be most useful if TRAI does not confine itself narrowly to the questions posed to it by the government. India's telecom sector needs a clear direction for how spectrum will allocated and priced in future. There is an urgent need to remove distortions caused by legacy issues in licensing which are holding the sector to ransom.

It is worth recalling that

- Spectrum is key natural and scarce resource.Therefore, it is important that is allocated and priced fairly and rationally. Unlike other natural resources, it is inexhaustible, keeping it idle
- Wireless communications is impossible without access to spectrum.India's broadband needs, as its telephony needs earlier, force heavy reliance on wireless and therefore spectrum access.
- With significantly higher demand than supply of spectrum, auctions are inescapable for conventional 2G, 3G and 4G services being deployed.
- However, auctions must be seen primarily as means of transparent allocation, not solely revenue generation. This requires greater attention to auction design.
- Too low or too high a price of spectrum hurt efficient use of spectrum.
- Failure of recent auctions, despite demand for spectrum, requires a new approach to spectrum auctions for allocation and pricing of spectrum in future
- It is absolutely critical that conducive conditions are created to develop wireless broadband data markets. This requires special attention to maximizing the economies offered by the 2100 MHz band.
- It is important to ensure that at least some spectrum is available for innovative solutions beyond conventional voice or data services. This can be important for developing new markets.

My responses to TRAI questions start on the following page. They also include a specific proposal to resolve current logjam.

Responses to questions in the TRAI Consultation Paper

Q.1. What method should be adopted for refarming of the 900 MHz band so that the TSPs whose licences are expiring in 2014 onwards get adequate spectrum in 900/1800 MHz band for continuity of services provided by them?

The Supreme Court judgement mandating auction of all spectrum available due to cancellation of the 122 2G licences, makes it impossible to reserve or use that spectrum for refarming 900 MHz spectrum.TRAI's earlier recommendations for refarming 900 MHz cannot therefore be implemented.

The formula proposed above is generic and can ensure that benefits of incumbency enjoyed by holders of 900 MHz spectrum, can only be retained in the renewed licence only on payment of a market determined price. It will ensure that companies with more spectrum will pay more fees and thus constitute a disincentive for hoarding.

Q.2. In case spectrum is to be "reserved" for such TSPs, should it be restricted to licences expiring in 2014 (metros) or include licences expiring afterwards (LSAs other than metros)?

It is critical that TRAI's recommendations help to remove the distortions caused by irrational bidding.

There are no ground for retaining spectrum to assist refarming. Companies can be presumed to share government's goal that all spectrum must be put to the most economically efficient use as long as there are no barriers to such flexibility in use of spectrum.

Q.3. Is any restriction required to be imposed on the eligibility for participation in the proposed auction?

None, beyond those for the previous auctions. With no limit on the number of players in the market, there is every reason to make it possible for as many players as possible to bid in the auction.

Q.4. Should India adopt E-GSM band, in view of the diminishing interest in the CDMA services? If yes,

No. There is insufficient spectrum in the EGSM band and it would be difficult to sustain TRAI's view on the market potential of any technology e.g. CDMA. Regulators must leave these decisions to markets and players.

a) How much spectrum in the 800 MHz band should be retained forCDMA technology?

Retaining significant amounts of spectrum in the 800 MHz is unnecessary.

b) What are the issues that need to be addressed in the process?

Technology neutrality and spectrum trading can mitigate any attendant risks of spectrum allocation using market-based processes

c) What process should be adopted for migration considering the various issues involved?

See answer to previous question.

Q.5. Should roll out obligations for new/existing/renewal/quashed licenses be different? Please give justification in support of your answer.

There is a definite need for rollout conditions if services or players depend on the use of a scarce public resource viz. spectrum. This is no less valid if the spectrum is acquired through auctions. In much the same way that government agencies require that owners of land designated for housing build on it, the government is within rights to demand that spectrum acquired from the government not be kept idle but be used for wireless services. However, this does not justify interference, beyond broad guidelines, in how spectrum is used.

Holders of spectrum must be obliged to rollout services in their service areas. It is unnecessary to impose different obligations based on type of player or technology or the time of entry into the market.

Companies must be obliged to rollout services or negotiate with specialized players who offer to do so.

We must distinguish roll of infrastructure from that of services. All users of scarce resources must be obliged to expand coverage to all geographical regions for which they receive spectrum.

Q.6. Is there a need to prescribe additional roll-out obligations for a TSP who acquires spectrum in the auction even if it has already fulfilled the prescribed roll-out obligations earlier?

See answer to Q5 above.

Q.7. What should be the framework for conversion of existing spectrum holdings into liberalised spectrum?

A framework is unnecessary. This can and should be done by declaring that with immediate effect, holder of any spectrum may deploy any approved technology subject to it not interfering with services of existing users of spectrum.

Q.8. Is it right time to permit spectrum trading in India? If yes, what should be the legal, regulatory and technical framework required for trading?

Yes. Indeed, it will help unlock all efficiencies in the use of spectrum without increasing any risk of abuse of spectrum holdings.Only licensed players should be permitted to share spectrum and appropriate competition norms must be laid down and enforced to prevent monopolies or market abuse.

Q.9. Would it be appropriate to use prices obtained in the auction of 3G spectrum as the basis for the valuation in 2013? In case the prices obtained in the auction of 3G spectrum are to be used as the basis, what qualifications would be necessary?

No. This should be avoided at all costs. Continuing with this approach rejects the self-evident truth that the value of spectrum, as land, can increase or decrease with time. It also ignores the fact that auction design can seriously impact bids.

Q.10. should the value of spectrum for individual LSA be derived in a top- down manner starting with pan-India valuation or should valuation of spectrum for each LSA be done individually?

Almost all methods of valuation of spectrum are imperfect. Recent failed auctions have demonstrated this conclusively. The goal should be to have a sufficiently low reserve priceand ensure an auction with sufficient participation.

Q.11. Is indexation of 2001 prices of 1800 MHz spectrum an appropriate method for valuing spectrum in 2013? If yes, what is the indexation factor that should be used?

See answer to Q10. Indexation factors are unnecessary.

Q.12. Should the value of spectrum in the areas where spectrum was not sold in the latest auctions of November 2012 and March 2013 be estimated by correlating the sale prices achieved in similar LSAs with known relevant variables? Can multiple regression analysis be used for this purpose?

See auction to Q10

Q.13. Should the value of spectrum be assessed on the basis of producer surplus on account of additional spectrum? Please support your response with justification. If you are in favour of this method, please furnish the calculation and relevant data along with results.

See answer to Q10

Q.14. Should the value of spectrum in the 1800 MHz band be derived by estimating a production function on the assumption that spectrum and BTS are substitutable resources? Please support your response with justification. If you are in favour of this method, please furnish the calculation and relevant data along with results.

See answer to Q10

Q.15. Apart from the approaches discussed in the foregoing section, is there any alternate approach for valuation of spectrum that you would suggest? Please support your answer with detailed data and methodology.

Yes. I offer the following proposal to address the current challenges in spectrum allocation and pricing:

- Reduce recent reserve prices drastically to say, 25% of current levels.
- Choose magnitude of reserve price not to reflect underlying value of the spectrum but to deter frivolous bidders
- Remove any link between results of previous auctions and the reserve price of forthcoming auctions.
- Merge licence and spectrum usage charges into a single licence fee
- Use the following formula to charge the annual licence fee (F):

$$F = R \times S \times P$$

Where

F is the annual licence fee paid by a player using spectrum,
R is the total revenues of the sector
S is the operator's share (percentage) of total spectrum allotted
P is the government's share (percentage) of sector revenues announced in the budget (currently about 30%)

This will ensure that government's share of total revenues from the sector would be set a priori each year in Finance Minister's budget and thus reduce any risk to government exchequer through a collusive undervaluing of spectrum. The amount set would be paid by users of wireless technologies i.e. UASL licensees, in proportion to the amount of spectrum held by each. This will protect government revenues and bring India's spectrum regime in line with international norms.

This is not very different in practical terms from the current rules where operators pay DoT-prescribed fees based on as a share – DoT has recently proposed 8% - of their revenues (which presumably depend, in some complex way, on the spectrum they hold.)

Requiring only UASL players to pay licence fees, will change little since they already pay roughly 75% of the fees collected by the government. This number rises to over 95% when one includes long distance services, where the players are the same and which will cease to be licensed separately after unified licences come into force.

The above approach, of dividing licence fees among spectrum users, will in a simple manner will therefore help move towards a more coherent unified licensing regime. Further justification of this approach is included in my article in the Financial Express on 25th April 2013. The article is available online here. However, for ready reference it is being reproduced at the end of this document.

Q.16. Should the premium to be paid for the 900 MHz and liberalised 800MHZ spectrum be based on the additional CAPEX and OPEX that would be incurred on a shift from these bands to the 1800 MHz band?

See answer to Q15.

Q.17. Should the valuation of spectrum and fixing of reserve price in the current exercise be restricted to the unsold LSAs in the 1800 MHz band, or should it apply to all LSAs?

No.

Q.18.

Q.18.a) Should annual spectrum usage charges be a percentage of AGR or is there a need to adopt some other method for levying spectrum usage charges? If another method is suggested, all details may be furnished.

Spectrum usage charges should be based on total revenues of the sector in an amount proportionate to the holding of individual players.

Q.18.b) In case annual spectrum usage charges are levied as a percentage of AGR, should annual spectrum charges escalate with the amount of spectrum holding, as at present, or should a fixed percentage of AGR be applicable?

See answer to 18 (a)

Q.18.c) If your response favours a flat percentage of AGR, what should that percentage be?

See answer to 18(a)

Q.19. what should be the ratio adopted between the reserve price for the auction and the valuation of the spectrum?

See answer to Q 15 and introductory remarks.

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THE FINANCIAL EXPRESS
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Apr 25 2013

Breaking the Telecom logjam

Mahesh Uppal: Apr 25 2013, 00:33 IST

A practical solution is to move towards a single licence fee and link it to services revenues and spectrum

The telecom sector today faces crippling impasse about spectrum and licensing. The two recent auctions for spectrum failed to attract sufficient bidders. Telecom companies are resisting high reserve prices and one-time fees for spectrum. The government cannot give in since it has a deficit to plug and cannot afford fresh allegations of collusion. Is there a practical solution?

Fortunately, there is and it could allow the government to lower reserve prices without allowing the companies to run away with largesse. A simple way is to reduce upfront payments by companies, but keep variable the proportion of revenues they currently pay to the government in the form of licence fees and spectrum charges. A practical way to achieve this is to move towards a single licence fee and link it to two variables, viz. the total telecom services revenues and the spectrum held by each company. The idea is that the government specify its target licence fee as a unique proportion of sector revenues each year, akin to a tax in the budget. Individual companies would then pay licence fees, according to the following formula:

Annual licence fee for any telecom company = PxSxR, where R represents total yearly revenues from telecom services, P the fraction of these revenues that the government would retain every year, and S the fraction of total spectrum allocated that is held by the company.

The licence fee implies that companies without spectrum will pay no annual fees. This reflects the practice in most mature regulatory regimes where players pay for the use of spectrum and other scarce resources but are largely free to provide any or all services. Indeed, this will usher a unified licence that is more coherent than the one recommended by the Telecom Regulatory Authority of India (Trai), and still in line with the National Telecom Policy announced last year.

Allowing government to fix P above gives it a handle to protect its revenues. Passing the entire burden of licence fees on spectrum users will not shock the system either. Mobile services already

contribute roughly 75% of total revenues and this rises to 97% if you include their revenues from long distance. (Each mobile player provides national and international services that are predominantly consumed on mobile devices.) Also, the unified licence, when implemented, will remove service distinctions.

Limiting fees to spectrum users justifies merging the old licence fees and spectrum charges, making the system simpler and easier to implement. Basing all licence fees on aggregated and not individual revenues of companies promotes efficiencies since more productive players will pay less. This also reduces incentive to under-report revenues to escape liabilities.

It would make sense to implement these changes for all players in 2014, when the first set of telecom licences are due to expire. Tenures of all existing licences too could then be brought at par. The Trai Act allows the government to issue directives on policy matters and these changes should certainly qualify.

Linking fees with yearly revenues will reduce dependence on high reserve prices. This will help design better spectrum auctions. This is critical in today's climate of mistrust. Today, maximising government revenues upfront seems the only defensible objective even if it scares away investors and delays rollout of networks. The new approach will reduce the risk of companies using low reserve prices to grab spectrum cheaply, since the government can fix, each year, the share of revenues to be paid as licence fees and prevent unintended windfalls.

This approach will similarly allow a more transparent allocation of spectrum for special needs or less developed markets. This seems difficult to accommodate in today's environment with high upfront payments. We could seed new markets, aid innovation and efficiency by designing special auctions—or have no auctions at all—to allocate spectrum to promote specific technologies or solutions. For example, European countries like the UK and the Netherlands have auctioned separate spectrum for communications within buildings, since wireless traffic increasingly originates and terminates there.

These proposals need fine-tuning. For example, Trai would need to compute fees for companies that use different types of spectrum, for example 2G, 3G, 4G spectrum or even VSAT, and propose an equivalence. The proposals could benefit standalone international long-distance players substantially. They hold no spectrum and the roughly R200 crore they will save in annual fees might be seen as "unearned profits" to be prevented. Similarly, the differential impact on mobile players too might need to be reconciled, at least once, to facilitate moving to the new system. Trai is competent to review options and possibly recommend a one-off adjustment in fees. The government too might want to fix a token fee to administrative costs of licensing, as some countries do.

Disputes are endemic to the sector, but courts can resolve them, as they have done till now. The new proposals are a defensible policy shift in line with overall government objectives. If Trai can

respond to a government reference as efficient as it does, the government can lower reserve prices without needless controversy. This will end the current logjam in the telecom sector and offer a workable framework for the future.

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