

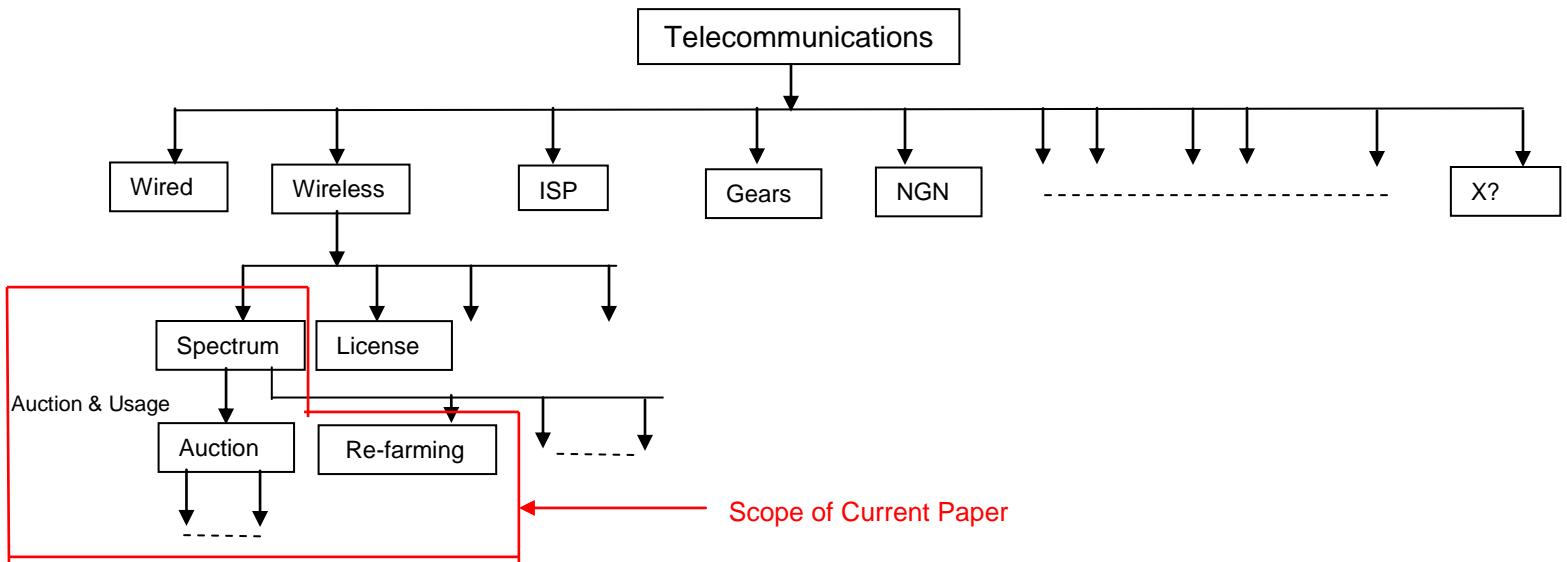
To
The Secretary,
Telecom Regulatory Authority of India,
MTNL Telephone Exchange Building,
Jawahar Lal Nehru Marg,
New Delhi-110002

Subject: Response to TRAI Consultation Paper No. 04/2012 on Auction of Spectrum

Dear Sir,

The TRAI is doing a commendable job in delivering competitive telecom regulations under the guidance of the Honorable Supreme Court of India for the controversial 122 2G Licenses marked in the Spectrum Scam.

Before directly getting to recommend on the issues raised in the consultation paper, I'd like to begin by highlighting the urgent need of a **Telecommunications Roadmap for India**. The following Tree Structure gives a broad picture on how "**Radio Spectrum**" is just one of the entities of the Telecom Industry.



As evident from the above diagram, the **Radio Spectrum** is just a sub-category of the Wireless Industry which is the scope of this paper. I'd like to base my views by first raising series of most important issues surrounding the Telecom Spectrum, prefixed **OL.x** (Outlook), detailed in Annexure -1. Actual Answers to the Questions raised by TRAI consulting paper will be in Annexure – 2 of this document with frequent references to postulates in Annexure – 1



The Indian Telecom Industry is supposed to hit [USD 100 Bn according to estimates from Delloite](#) within the next 2 to 3 years. Thus it is essential that we have a **clear Vision and Mission** statement in taking this sector forward as it is rapidly evolving.

The Government under the direct supervision of Honorable Prime Minister of India Dr. Manmohan Singh should take this as an opportunity to plug various holes in the system and clean the sector for good.

Thank You.

Sincerely,

Chetan S Patil



Annexure – 1 [Most Important Issues on Telecom Spectrum in India]

OL.1 It is essential that various entities of the government TRAI, DoT, Telecom Commission, Defense, Telecom Engineering Centers, etc get together and chart a **Roadmap for the Telecommunication** [Wired and Wireless] industry in India along with a **Comprehensive Business Strategy**. In my opinion, the National Telecom Policy is inadequate and has failed to address the complete bouquet of services that I have on my mind[there could be more], highlighted in OL.2.

OL.2 The Radio Spectrum cannot be earmarked only for use in services provided by the Indian Telecom / Broadcasting / VSAT / companies but also has applications in diverse areas such as Aeronautics, Maritime, Meteorology, Space Research, etc [Experts from institutes like [IISC, Bangalore](#), [IISERs](#), etc should be able to shed more light] As the nation progresses, there could be demand for various bands of Spectrum from any field. Thus the Government must **mark and make provision for Spectrum to accommodate Research and Development** in other fields of Science and Technology.

OL.3 W.R.T OL.1, it is essential that Telecom Companies be given a broader picture at least about the **Availability and Auction time-line of the Spectrum** in various Bands as Telcos risk investing a huge fortune. Imagine the quantum of systemic risk it could pose if it is entirely financed by Banks and if the borrower fails or defaults.

OL.4 It may not be practically feasible to Auction the smallest unit of spectrum by the Government every time. Thus the Government must come out with a formula for **pricing the spectrum without auction [For Small Chunks]** which could be linked to the price in previous Auction and further indexed with rate of Inflation or any other meaningful Index you may deem fit.

OL.5 Spectrum Cloud / Grid - On the basis of recommendations of Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission of India, Government must take an initiative now to setup [a platform for sharing Spectrum in Real Time](#).

OL.6 Comprehensive Rules and Regulations for the Big Game. Layout complete details on Spectrum Trading, Sub-leasing, Spectrum Takeover in case of War or National Emergency Operations, etc. What is wrong with the Government? Why is it making a [mockery of itself like in the Vodafone Tax](#) case by applying laws in retrospective effect or trying to change the rules of the game mid-way? Both are not advisable. **Hire Non-Corrupt individual professionals with high integrity to frame comprehensive rules and regulations at any cost.**

OL.7 Spectrum Auction – Can this be an [ISO](#) kind of Process? By doing so we can eliminate most of the bottlenecks, plug many holes in the system and all the officials will have well defined processes and procedures to adhere to.

OL.8 Level Playing Field – Ensure the field is leveled from 2012 onwards. BSNL & MTNL the spoilt kids of government have got enough family silver for FREE. It is time they are made accountable and both the organizations should be treated at par with other stakeholders

OL.9 SMEs & Entrepreneurs – Government must protect the SME and Entrepreneurial spirit of its citizens. Thus suitable provisions to protect this eco-system must be made now even at the cost of sacrificing revenues to encourage innovation.



To elaborate on this, a company by name [Vavasi Telegence applied for a license in 2007 to provide services on TD-SCDMA](#) technology. Depending on their Net-worthiness, they could have been permitted to operate in few circles. But it didn't happen.

OL.10 Maintain Current Structure of Telecom Circles – India is diverse in nature. Demographics vary from Circle to Circle. Also giving away small chunks of licenses to test potential innovations in some circle is easily feasible. Thus maintain the current structure of Circles.

OL.11 Spectrum Liberalization Fee for Old Operators – It may happen that operators will have few chunks of spectrum bought in auction and other originally allotted to them with the license. Now for effective use, they may require to club both of the spectrum bands. So in that case, should old spectrum be liberalized? Yes. With some additional nominal fee on AGR be levied and let them make best use in the interest of the eco-system.



Annexure – 2 [Response to TRAI Consulting Paper No 04/2012]

I have organized your questions on Spectrum based on the sub-categories they fall into and here are my responses for the same.

Allocation of Natural Resources (Spectrum) as raised by Honorable Supreme Court of India

1. How can the various principles outlined by the Hon'ble Supreme Court in various observations brought out in para above be sufficiently incorporated in the design of spectrum auction?

The Government must ensure Transparency and encourage **widest participation** from all corners in the auction thus helping discover the true price of the Natural Resource – Spectrum.

It maybe slightly out of context to say this but logically speaking had the high ranking officials and bureaucrats stood firm against then Telecom Minister, A. Raja, the scam could have been averted. **How about temporarily keeping all the scarred bureaucrats and officials out of this loop?**

Spectrum to be Auctioned

2. What are the key objectives to be kept in mind in the auction of the spectrum?

TRAI must ensure the following –

- Discover Fair Market Price of Spectrum
- Consumer Viewpoint – Affordable and Wider coverage of service
- Bidder should have Networth of atleast twice the reserve price to participate in the auction to avoid proxy bidding as it happened in the case of BWA Auctions
- The SBI [pre-consultation paper](#) raises some very good issues on Financing of the Spectrum and in the light of the same; TRAI must get views from the Reserve Bank of India.

3. What should be the amount of spectrum which should be auctioned?

It is essential that the Government take **OL.1, OL.2 and OL.3** points discussed above into consideration and then announce how the entire vision is structured along with the rules of the game. If the Government cannot come up with a roadmap raised in **OL.1** and **OL.2** above, it should just **do the needful to satiate the Honorable Supreme Court Order** of 122 cancelled licenses for now and defer the rest for later date.

Spectrum Liberalization

4. Should the spectrum be liberalized before it is put to auction?

[Yes. I have been advocating for this](#) and very happy to see it is now being under active consideration. Government must not insist on using specific band for specific purpose as the winner of the spectrum would have paid the market determined price in the auction and should be FREE to utilize for business productivity without any restriction whatsoever. Say in 2016, we may have a scenario where some companies in Maritime



require specific band of Spectrum. They could lease it from any of the companies which have won the same in auction, ofcourse with the approval of Government.

Further, any spectrum won in an auction or on existing spectrum for which the Telco pays fees linked to an Auction Price should be treated at par with liberalized spectrum.

Also refer to **OL.11** of Annexure -1 for clubbing new spectrum with old spectrum the operator already has, for use in liberalized way.

Spectrum re-farming

5. For the refarming of 800 and 900 MHz bands from the existing licensees, which of the three options given above should be adopted? Please elaborate with full justification.

Practically none of them are feasible as operators will challenge it in the court of law and in all likelihood the Government is likely to lose the prolonged battle. Stop changing the rules of the game mid-way or with retrospective effect. **The only way for re-farming is when the old licenses are due for renewal.**

The Government must feel lucky if Operators agree for the somewhat acceptable Option 3 of TRAI consulting paper.

6. What are the issues that may arise in the above mentioned refarming process?

Not a feasible solution.

7. For new technologies e.g. UMTS/LTE, 5 MHz is the minimum amount of spectrum required. Certain licensees have only 4.4 MHz spectrum in 900 MHz band and 2.5 MHz spectrum in 800 MHz band. What are the possible options in case of such licensees?

Let them BUY the remaining spectrum that they are short of in an auction or price indexed to the auction.

8. Some GSM spectrum allocations may be interleaved between operators; to avoid fragmentation, reconfiguration between operators may be required. Whether frequency reconfiguration is required and what are the challenges and possible solutions?

I'll leave it to the RF Expert to answer.

9. Should the refarming of spectrum in 800/900 MHz bands be dealt independently or should a comprehensive approach be adopted linking it with the availability and auctioning of 700 MHz band?

A comprehensive plan is necessary. Please see response below to Q.10 to Q.13.

700 MHz Spectrum Auction

10. Which of the two approaches outlined (1 - do not allow operators with 800/900 MHz spectrum in 700 MHz auctions, 2 - allow all but impose hard sub-1 GHz spectrum holding cap) be adopted?
11. When should 700 MHz spectrum be auctioned?
12. Should the auction in 700 MHz band be linked with the granting permission for the liberalised use of 800/900 MHz band?



13. How much spectrum in 700 MHz band should be put to auction initially and what should be the amount of spectrum which a licensee should be allowed to win in that auction?

Response for Q.10 to Q.13 - Kindly **defer the same** until you have **OL.1** to **OL.8** of Annexure -1 resolved. [700MHz is the 4G Migration Path for CDMA-2000 / 3G.](#)

However, Indian CDMA Operators are il-legally operating their EVDO Services thus the Government must first address issues raised in response to Q.16 below and then think of 700 MHz auction.

Indian Operators are overstretched on their Balance Sheets. Bharti Airtel and Idea have FY13 DEBT/EBITDA of 2.2x and 2.1x respectively. Bharti may have to shell out Rs 5,000 Crore if it wants Qualcomm's 2300MHz BWA spectrum. Vodafone has 4.2x DEBT/EBITDA. Reliance Communications' is still higher. Aircel and Tata DoCoMo are struggling to achieve EBITDA break-even. Additionally, they have a hanging sword on their head of 900 MHz re-farming and incremental fees on spectrum over 6.2 MHz.

It is unviable for any new operator to just get [700 MHz spectrum and start data](#) only services in India. Also we are still waiting for the eco-system to emerge in 4G TD-LTE Just because our Honorable Finance Minister has made budgetary provisions for 700 MHz auction money to plug fiscal deficit doesn't mean the Government auction it right away.

The Auction Structure

14. What should be the structure of the auction process?
15. Should auction be held in single stage or multi stage?

Response to Q.14 and Q.15 - Structure of [3G and BWA Auction can be followed.](#) Government must make an effort to make **this Auction Process at par with the ISO Standards.** Refer **OL.7**

16. Should there be a simultaneous auction for spectrum in 800 and 1800 MHz bands?

800 MHz is a valuable chunk of Spectrum. Operators [CDMA] have misused the same for providing EVDO Services which is equivalent to 3G. Logically, **they are already using the Spectrum in a liberalized way** even before the law is in place. **Government must first address this il-legal usage of Spectrum.**

On the 10th of Jan, 2012 I wrote to adveco@trai.gov.in to collect information from Telcos on EVDO Dongle Subscribers separately. Depending on the Number of Subscribers, we can ask for additional fees from the operators on a pro-rata basis with the price of spectrum tied to 3G Auction prices.

Alternatively, the Government must BAN all CDMA operators' EVDO services with immediate effect. Doesn't this leave the subscribers in limbo? Yes, it does and thus to avoid disruption of services, let the operators furnish an undertaking that they will pay incremental fees as determined during the auction of 800 MHz spectrum which can be conducted separately.

Can the TRAI please question the DoT on the Validity of EVDO services by CDMA operators?



Spectrum Block Size

17. What should be the block size of the spectrum?
18. Should the block size be dependent on the frequency? If so, what should be the block size in each band?

Existing Spectrum Allocation of 4.4 MHz or 5 MHz in 1800 MHz band is sufficient for Telcos to begin operations. Incremental allocation of Spectrum can be made on the basis of **OL.4** or they should be able to borrow from the Spectrum Grid / Cloud as specified in **OL.5**.

Defer Auction for all other Bands until we have Clarity on **OL.1** to **OL.8**

19. Should there be a cap on amount of spectrum one can bid? If so, what should it be?

Any operator must be capped at 30% to 35% of the Total Spectrum allocated in that particular circle. Thus we will maintain Telecom Circles as highlighted in **OL.10**. By capping at 35%, we will ensure there is enough spectrum for competition - atleast 3 functional operators a must for any circle.

20. Should there be a separate cap on the total amount of spectrum one can hold; if so, what amount should it be?
21. Should there be a cap on the amount of spectrum one can hold in respect of sub-GHz spectrum? If so, what should it be?

Response to Q.20 and Q.21 - Since we are moving to a **regime of Auction based pricing** where Operators will BUY spectrum at market determined prices, let them hold as much as they want as long as they satiate the condition of not going beyond 30% to 35% of total the spectrum allocated in any circle under consideration.

Eligibility Criteria

22. Who all should be eligible to participate in the auction?
 - a. Only licensees whose licences have been cancelled;
 - b. Only eligible applicants as on 10.01.2008;
 - c. Only licensees whose licences have been cancelled and all new eligible entrants at the time of auction; or
 - d. Open to all including the existing Licensees.

I have done a thorough analysis in the interest of the eco-system and thus my recommendation is the same as earlier,

"TRAI allow companies whose licenses were canceled by the Supreme Court along with existing UASL / CMTS service providers, companies who have been wait listed by the DoT, companies which have 3G / BWA / ISP / or other Telecom related licenses in India and finally the Global Telecommunication Service Providers"



Reserve Price

23. What should be reserve price per MHz of spectrum in the year 2012 for 1800 MHz band?

Ratio of growth in AGR/MHz is a meaningful base price in my opinion.

24. What should be the reserve price per MHz of spectrum in the 700/800/900 MHz bands?

Defer auctions for spectrum in 700, 800 and 900 MHz bands. Let us re-visit when the auction stage is set with level playing field.

25. Whether the reserve price should be uniform across the country or service area wise?

They may vary from circle to circle as we are going to preserve the Model of telecom circles.

Roll Out Obligations

26. What should be the roll out obligations linked to the auctioned spectrum?

Existing Rollout Rules and Obligations are good.

Spectrum Usage Charges

27. What should be the annual spectrum usage charge for the spectrum being auctioned?

28. Should the spectrum usage charge be in line with present criteria of escalating charge with the amount of spectrum holding or a fix percentage as was done for 3G and BWA spectrum?

Response to Q.27 and Q.28 – Let us stick to whatever the Government has imposed in 3G and BWA auctions.

Spectrum Validity

29. What should be the period of validity of spectrum?

30. What should be the period of price of spectrum?

31. Should the government allow deferred payment schedule of the spectrum auction fee, or should the payment be upfront in nature?

Response to Q29 through Q.31 – Let us stick to whatever the Government has committed during 3G and BWA Auctions

Spectrum Trading

32. Should Spectrum trading be allowed in India?

33. (a) Among the various models discussed above, in your opinion which model of spectrum trading is best suited for India?

(b) In your opinion is there any other model which can be implemented in India? If yes, please describe.

Yes. Kindly facilitate Active and Real Time Trading of Spectrum between Operators as well as SMEs who may require the same for legitimate businesses with approval from the Government. Kindly frame comprehensive guidelines for the same taking **OL.2, OL.5** and **OL.9** into consideration. Kindly seek inputs from Shri Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission of India especially in this regard.



34. What should be the eligibility criteria to trade the spectrum?

Any Indian Telecom Operator with UAS / CMTS / ISP or licenses issued by the DoT or any SME who wants it for the purpose of R&D or legit services should be allowed to participate. Venture Capitalists, Private Equity Funds and Investors with the sole intent of speculation should be kept out.

35. Whether the spectrum assigned for 3G and BWA services be allowed to trade? If yes, give reasons

The spectrum was sold in a transparent auction at market determined price. Thus operators who have excess or scarce can lend or borrow through the spectrum trading platform to be established by the Government of India.

Spectrum for Raising Capital

36. Can spectrum be allowed to be mortgaged for raising capital for telecom purposes?

The views of the Reserve Bank of India must be separately sought by TRAI on an urgent basis in this regard.



Annexure – 3

About the Author: He holds a BE and MS in Computer Science from Karnataka University and California State University respectively. He has worked with Cypress Semiconductors and at Microsoft in the United States. Currently he is an entrepreneur developing Internet Applications with focus on Analytics and Business Intelligence.

He has been tracking the Indian Telecom Sector since 2000 and publishes part of his research on the blog – convergence.in. He spends good amount of time researching Indian Businesses / Companies and the Macro Economy with the determination to make India one of the best platforms for progressive reforms and innovation.

