

**T**ELXESS  
Consulting Services Pvt. Ltd.

The Chairperson

Dated: 15<sup>th</sup> October,2007

Telecom Regulatory Authority of India

New Delhi.

Respected Sir,

SUB: Consultation paper No 9/2007 on Issues related to Mobile TV – Response thereof

With reference to the above, we at Telxess Consulting Services are pleased to respond in detail to the consultation paper referred to above.

We hope that our response will be found suitable and appropriate and in line with the view that, more number of service providers will find sufficient encouragement to enter the services, provide for ample competitiveness in the market when it takes off and allow consumers to choose freely.

We will be glad to provide further inputs/clarifications if and when required.

Thanking you,

Yours truly,

Amitabh Singhal

Director

Telxess Consulting Services Pvt Ltd.

**Questions for Consultation and Replies thereof:**

1. Whether the technology for mobile television service should be regulated or whether it should be left to the service provider.

A. As already enumerated in the consultation paper, various technologies are being experimented with in many countries the world over. Most are still on trial basis; some have been launched commercially, but still extremely limited in reach and usage. The business case and success thereof is still elusive, because of multiple reasons, including spectrum availability, technology adoption and reach, low penetration and small number of user base. Besides in India, the matter is more complex because broadcasting and telecom sectors are highly regulated, as also the fact that various types of eligible/prospective mobile TV operators have different applicable licensing and operating conditions in their current services. Admittedly, only one public television broadcaster has started a trial using DVB-H technology. Other technologies are far from being tested to determine suitability or otherwise. Case in point is that some ISPs already in possession of certain bands in 2.5 GHz to 2.69 GHz could possibly be able to use a particular technology in the future thus providing a competitive edge in the new industry. Technology is still evolving and it'll be self defeating to restrict choice of technology at this stage.

In such a situation, it is impossible to comprehend which particular technology will be appropriate for India. Hence, it is strongly recommended that TRAI adopts a technology neutral approach, and let prospective service providers decide a particular technology, or a mix of it, based on their own business approach.

2. If the technology is to be regulated, then please indicate which technology should be chosen and why. Please give reasons in support of your answer.

A. Technology should not be restricted and TRAI should maintain a 'technology neutrality' approach, for reasons given at Ans. 1.

3. What will be the frequency requirement for different broadcast technological standards for terrestrial and satellite mobile television transmission in India?

A. TRAI should suggest/recommend to the government to make available sufficient number of channels in all suitable bands, irrespective of whether it is UHF, VHF, L Band, and S Band, based on the technology mix that may be decided upon by the prospective service providers.

Two types of transmission are envisaged. One is Terrestrial systems for mobile TV operating in the VHF/UHF bands. Second is a Hybrid system with direct satellite reception on the Customer handset as well as terrestrial re-distribution to customer handsets in L and S-band. There should be a minimum number of 8 to 10 TV channels available to handsets in a given location.

4. Which route would be preferable for mobile TV transmission – dedicated terrestrial transmission route or the satellite route? Should the mobile TV operator be free to decide the appropriate route for transmission?

- A. As said previously and also noted by the Authority, there are different technologies and they use different transmission routes. Also, it is still an evolving technology and therefore, TRAI should desist from specifying specific transmission routes. It should recommend that operators will be free to determine the transmission route, with the caveat that the operator shall alone be responsible for obtaining the requisite spectrum and bandwidth. (This is also in line with TRAI recommendations on Review of Licenses for Telecom, where number and technology restrictions are not imposed). It may be further noted that the delivery of tv service could be made to not just cellular mobile handsets, but also to mobile wireless (WiFi & Wimax) enabled PCs and other such devices as PDA's and other handhelds. Hence, any recommendations from TRAI should include the possibility of using any end user CPE.
5. How should the spectrum requirements for analogue/ Digital/ Mobile TV terrestrial broadcasting be accommodated in the frequency bands of operation? Should mobile TV be earmarked some limited assignment in these broadcasting bands, leaving the rest for analog and digital terrestrial transmission?
- A. TRAI should suggest to WPC to call for meeting of prospective Terrestrial Mobile TV operators/analogue/digital TV operators and determine the prospective requirements in various bands, based on which availability and methodology of distribution of the spectrum can be determined. A complete review of spectrum usage needs in the UHF/VHF Band be therefore undertaken, in a time bound manner, before deciding on earmarking, based on legacy usage.
6. In the case of terrestrial transmission route, how many channels of 8 MHz should be blocked for mobile TV services for initial and future demand of the services as there are nearly 270 TV channels permitted under down linking guidelines by Ministry of Information and broadcasting?
- A. In the case of UHF and VHF initially 5 channels into 8 MHz in different frequency bands to accommodate 20-25 tv channels each, to cover for major region specific programs in different languages should be recommended. Appropriate future review to assess utilization and requirements on a yearly basis can be done additionally. This would, understandably cover the need for MFN (Multi Frequency Networks) where the need so arises.
7. Whether Digital Terrestrial Transmission should be given priority for the spectrum assignment over mobile TV, particularly in view of the fact that the Mobile TV all over the world is essentially at a trial stage.
- A. Since the Government has not yet taken a decisive view on privatization of DTT, other than Doordarshan only being allowed, it will be appropriate for TRAI to recommend that spectrum assignment for Mobile TV be taken up immediately, so as not to delay the launch of Mobile TV, which in any case the Government is understood to have agreed to privatize already.
8. Whether the frequency allocation for the mobile TV should be made based on the Single Frequency network (SFN) topology for the entire service area or it should follow Multi Frequency Network (MFN) approach.
- A. Considering that ideally we must have a choice of both a national and state level licensing and service provisioning, simultaneously having to cater to different geographic and linguistic requirements it'll be appropriate to provision for both SFN and MFN based allocations. SFN may not be sufficient to over country wide transmitters, hence MFN approach will be needed.
9. Whether frequency spectrum should be assigned through a market led approach – auctions and roll out obligation or should there be a utilization fee?
- A. Since new technologies are involved, very strict roll out obligations may be detrimental to adoption of technologies and building business cases. Therefore, Utilization Fee, based on a one time fee and a percentage of AGR would be

more appropriate as it'll be a motivation for service provider to use the allocated and paid for spectrum more efficiently and judiciously.

10. What should be the eligibility conditions for grant of license for mobile television services?
  - A. Apart from UASL, CMTS, ISPs holding and having access to mobile TV frequency bands and capable of meeting the IPTV eligibility should definitely be eligible. All others should be eligible who fulfill requirements as per the ISP license norms.
11. Whether net worth requirements should be laid down for participation in licensing process for mobile television services? If yes, what should be the net worth requirements for participation in licensing process for mobile television services?
  - A. Same as UASL, and ISPs with IPTV.
12. What should be the limit for FDI and portfolio investment for mobile television service providers?
  - A. Same as in Telecom and Internet services i.e. 74%.
13. What should be the tenure of license for the mobile television service providers?
  - A. 20 Years (10 initial with extension for 10 more years).
14. What should be the license fee to be imposed on the mobile television service providers?
  - A. ISP, UASL, CMTS are already covered under the entry fee and revenue share regime. Mobile TV service by them will automatically be covered. No additional burden should be imposed on these three categories.
15. Whether in view of the high capital investment and risk associated with the establishment of mobile television service, a revenue share system would be more appropriate?
  - A. As suggested already, ISP's who are eligible for IPTV should be covered and along with UASL, CMTS, they would be paying a nominal entry fee as well license revenue share of AGR as license fee. The same should be applicable on other eligible service providers.
16. Whether any Bank Guarantee should be specified for licensing of the mobile television service providers. If yes, then what should be the amount of such bank guarantee? The basis for arriving at the amount should also be indicated.
  - A. The BG should be at the minimum level, ie at the ISP service level and not higher.
17. Type of Licenses
  - A. Licenses should be A category National and B category Regional (state wise)

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