Indian Telecom: What's up with the Spectrum?

Lack of comprehensive plan, open discussions and piecemeal approach hurting ISPs, cellular operators and the broadband market in general

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The department of telecommunications (DoT) has released a set of new guidelines that increases the limit of spectrum each GSM and CDMA operator can claim based on their subscriber base.

While the total spectrum was capped at 10 Mhz for GSM and 5 Mhz for CDMA players, it has now been raised to 15 Mhz for GSM and 7.5 Mhz for CDMA for 2.1 million subscribers each. According to the new criteria, a GSM operator will get spectrum beyond 10 Mhz in two tranches — from 10 Mhz to 12.4 Mhz (when it crosses 1 million subscribers) and 12.4 Mhz to 15 Mhz (when it crosses 1.6 million). The CDMA operator will get beyond 5 Mhz to 6.25 Mhz and then to 7.25 Mhz.

The new criterion comes into effect immediately. It has, however, not taken into account the demand of the CDMA Developer Group (CDG) that equal spectrum be allotted to GSM and CDMA operators for the same number of subscribers.

For Delhi and Mumbai, while a GSM operator could get only 10 Mhz for 1 million subscribers, now it can claim a total of 15 Mhz for 2.1 million subscribers.

In-building networks may get more spectrum:

In a move that could alleviate the tremendous crunch for spectrum, the department of telecom is considering the possibility of allocating 3 MHz in the GSM 1800 band and 1.25 MHz in the CDMA 800 band exclusively for "in-building" use nationwide. There is also the possibility of de-licensing 5 GHz to 5.35 GHz spectrum for similar use by mobile service providers.

Despite the high costs, the allocation of 3 MHz will enable operators to use this chunk of spectrum for mobile calls within large buildings.

In a bid to ensure that the frequencies are not misused and also to prevent future cartelisation, the DoT may also incorporate clauses to prevent operators and internet service providers from using these frequencies.

Mobile companies are also quite keen for delicensing of the 5 GHz to the 5.35 GHz frequency, as this will enable them to incorporate fusion technology in their networks. This permits calls to and from mobile subscribers within a building to be routed through the fixed network. This technology permits an outgoing call from a mobile handset in a building to be carried on a Wi-Fi spectrum to the nearest fixed line network.

Similarly, an incoming call is carried through the fixed line network and transferred to the 5-5.35 GHz spectrum, to be received on the mobile handset. It is believed that over 60 per cent of mobile calls originate and terminate within buildings.

Tonse Comments:

- While these approaches are welcome, it is difficult to believe why the Government is making a piece-meal approach to such a fundamental issue as spectrum. It is not that the issue has come up over-night. The impending spectral shortage has been a ticking explosive in the Indian telecom infrastructure for a longtime now. The lack of an overall comprehensive plan to accommodate the ever increasing mobile subscriber base is appalling.

- The UMTS / 3G spectrum also has not been released although it appears that broad allocations have been made.

- There is absolutely no clarity in the status or possible release of 3.5G Hz for the WiMAX profile. This is hurting ISPs, cellular operators and others alike. There are various explanations made at different times – (Ministry of Education / Department of Space / Ministry of Defence owned but likely to be available by December 2006 and so on) but no conclusive note or an official communication has been made to clarify matters.

- There is also a feeling that the Indian Frequency and Spectrum Regulators are perhaps out-of-step with the global / international trends. For example, in case of WiMAX, the frequency profile that has been widely approved internationally currently is 3.5G Hz. Yet we are absolutely silent about the availability of 3.5G in India. On the other hand there is some availability of spectrum in 3.3G.

- A detailed and comprehensive study of the spectral requirements of ISP / 3G operators in the upcoming scenarios of FMC / Broadband and WBA and hybrid networks including public Wi-Fi hotspots will perhaps be critical. In fact, it might even turn out that India is potentially the largest broadband wireless access market in the world. If that is likely and our 3.5G is locked up for some reason (?), why shouldn't we push the WiMAX Forum to create a new International profile on 3.3G? After all, what is the utility of a standard if it does not address the large segments of the global market?

- And how will the WiMAX Forum members even know about the unmet needs of a large underserved market unless the market is appropriately represented by its top carriers, regulators and policy makers? There is hardly any serious

representation of the Indian market by its vendors, carriers or policy makers – as is obvious by Indian membership at the Forum or in the recent WiMAX Forum summit at Paris in February 06.

- While provisions are being made via in-building spectrum, which essentially allows the voice call to travel over a Wi-Fi network and hand off through a 5G Hz (or other) link back to the macro network, a couple of fundamental questions come up:

    - It is unclear what the business model would be in this case. Is the cellular service provider required to pay the fixed-line operator for carriage? And if so what would be the rates? Will this impact cellular tariff or would it be treated as an internal cost of carriage?
    - Indian VoIP regulations do not allow the IP network carrying voice to interface with the switched PSTN at any point. Secondly, only ISPs that own a Telephony service license (ITSP) are allowed to provide VoIP as a service. Does this mean IP may be used as transport and there are no violations as long as the two end-points are PSTN or PLMN or a combination?
    - If a cellular call is jumping off a hybrid WiFi – Fixed line network and then back into cellular network, these points of handoff and related SLAs / Interconnects will be managed and owned by which operator? Or would this bring forth the much discussed 'shared resource' operators?

These and other related issues need to be addressed before considering the spectrum issue as resolved.

This article is from the April 15 edition of India Telecom Analysis, a monthly newsletter covering the Indian telecom space. For more information and to download a free copy: http://www.tonsetelecom.com/news.html

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