Broadband Dialtone – The New PSTN Avatar

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Taking broadband to the masses into the hintherland still remains a challenge as it has been for quite a few years. All the stakeholders from top to bottom have been talking about it, but there is clear lack of *Walking the Talk*. Regarding this the outlook for 2014 is likely to be the emergence of the *Broadband Dialtone* – the new telecom avatar replacing PSTN. Though the networks, equipment, and spectrum are the same the world over, while we are talking of broadband with a speed of 256–512 kbps, other countries are debating of slow and fast broadband between 10–100 Mbps. Our broadband networks urgently need rethinking and upgradation of existing systems and technologies.

Earlier, PSTN exchanges provided the basic telecom service, i.e., connectivity to the subscribers and any other value-added services riding over it like mobile, Internet, voice mail, sms and so on. As the importance and popularity of mobile increased, mobile also became a basic telecom service. Data services/TV/video and the like were then value-added services riding on fixed PSTN and wireless PLMN. Now in this age of convergence, the broadband access which has been value-added services, promises to replace PSTN and PLMN exchanges for all type of traffic including voice, data, and video. That is why there is a move to make broadband access a part of universal service strategies world over as recommended by ITU and there is a move toward making *Broadband For All* a fundamental right.

The above trends led Government of India to set ambitious targets for broadband – 175 million by 2017 and 600 million by 2020. The outlook appears to be that once broadband becomes available on demand, it may very well play the basic role of the present telephony exchanges through *Broadband Dialtone* and carry voice, data, video, TV and many other services to the end-user. For this to happen, the decision makers need to nurture the broadband, which is still in its infancy, as a game changing, essential infrastructure and not to treat this as a *milking cow* to impose excessive regulatory levies as is done in the case of mobile which of course is already established.

As per NTP-2012, the government has planned a massive investment (USD 4 billion) for the backbone network but the way forward to provide the access to the subscribers to reach the targeted number is not evident, and is likely to lead to inevitable failures as had happened initially with NTP-1994, 1999, and 2004 policies. Initially, the Internet used to be an application running on the PSTN. From its origin as a government-funded research network in the 1960s to its emergence as the first mass-market platform for data communications in the 1980s, powered by www in 1990s to the upgradation to broadband access after 2000, the Internet has evolved into the preferred infrastructure platform for all electronic communications worldwide and enabling Web 2.0. Today, telephony is becoming just another of the many services that are supported on the Internet. The government policy needs to facilitate this change by driving the Convergence Bill, which was approved by the government in 2001 and by the parliamentary subcommittee in 2004, before its lapsing. Of course, more amendments will be required in the outdated original draft in line with the changed technological scenario. The changeover separating the network operators and the service providers will give enormous flexibility and thus ability to innovate, resulting into unlocking the inherent potential of all existing resources in the network through shared infrastructures.

The present modus-operandi of execution of backbone network through public sector alone will only lead to very slow and inefficient growth. Private sector participation through PPP mode in implementing backbone network will make the entire process professionally executed, efficient, and speedy. Actually, the best brains of the country from all spheres of society should be involved in implementation of such mission mode project of national importance.

In addition, there is a great need to capitalize on the existing and new infrastructures as well as the innovative solutions based on emerging next-generation technologies to achieve the NTP-2012 targets. Some suggested numbers could be existing fixed lines (30 million), Cable-TV Homes (100 million), Fiber-to-Home (20 million), and balance 450 million have to come through wireless means like 3G, LTE, modified Wi-Fi with less restrictions and higher power, and other developing wireless technologies using the existing and under the construction backbone. It is necessary that these networks should use a mix of free, shared, pooled, and dedicated spectrum, moving more toward free and shared spectrum – the only means for expanding usage of broadband in rural areas for affordable broadband delivery.

In fact, there is a case that at each village *panchayat* one can install low-cost Wi-Fi mast to provide broadband connectivity for around 100 subscribers. It can be implemented for 0.25–0.6 million *panchayats* by 2014-17, and can also be deployed on existing 0.1 million rural towers. Developing business models for these rural networks by local entrepreneurs through sustainable business cases needs innovative out-of-box thinking, involvement of local bodies like *gram panchayats* in PPPP mode to make it happen. Only then NTP-2012 targets will look achievable. The broadband targets can not be automatically met just by providing backbone network. The ever-elusive last-mile link is also required to be plugged in to ring the *Broadband Dialtone* in rural areas of *Bharat*.