

Rural Connectivity – not an Obligation but an Opportunity.

- Pradip Baijal

(Urban teledensity in India today is 32%(2005) but rural teledensity is less than 2%. This is not sustainable, as poor teledensity in rural areas is further marginalising the marginalised. Yet, rural teledensities cannot rise if we consider such areas only as “Universal Service Obligation”. The policies have to be such that we consider poor rural teledensity as a huge “Universal Service Opportunity” and then plan for bridging the gap.

Experience from the urban mobile sector has demonstrated the potential for telecom growth in India, when private operators and competition led the market to explosive growth. Especially with today’s technology, we have the opportunity to leapfrog other nations in reaching our unreached villages, particularly when so much of the required resources and capabilities already exist but are lying unused. The Government, through its e-governance initiatives, should then leverage the infrastructure that is deployed for delivery of e-health, e-education, e-animal health etc. services to rural areas. The model will only succeed, if like in urban mobile telephony, the prices are right and if we quickly create a critical mass of different services on the network. With the acceptance of TRAI’s 2004 recommendations by the Government in 2007, rural teledensity is now growing exponentially.)

The President of India has placed emphasis on connectivity, employment through entrepreneurship, and efficient management of water resources for 10 per cent growth rate in GDP. The Prime Minister has emphasised broadband, internet expansion and rural connectivity for infrastructure development. The Minister of Telecom has identified the need for concessional tariffs for e-governance projects and an aggressive broadband policy.

On June 28, 2003 Mr. Kofi Annan, Secretary General, United Nations stated “Wireless internet technology may help poor nations leap frog into the

future if they can get assistance to harness the new technology. It is precisely in places where no infrastructure exists that wireless can be particularly effective, helping countries to leap frog, generations of telecommunications technology and infrastructure and empower their people.” The rural telecom plan proposed by TRAI in 2004 attempted precisely this. Its acceptance by GOI in 2007 has exploded telecom revolution in rural areas.

With almost 70% of our population living in rural and semi-urban areas, we have to recognise that these numbers are India’s core strength. This fact has been well recognised by consumer goods companies; two-wheelers manufacturers, TV and radio producers, and these companies prosper because they have recognised the strength of this market and sell a major part of their products in rural markets. In the telecom sector, we have treated this market as an “Obligation”. Unless we convert USO into a “Universal Service Opportunity”, we will not harness the full potential of the majority of our population. Our experience in urban mobile telephony has shown that there is a tremendous market in rural India also for telecom services if prices are right. The low mobile prices in India have created a huge rural demand.

All the earlier efforts of USO have given us less than 2 per cent rural teledensity, while this is more than 32 per cent in urban areas (55% in Mumbai, 44% in Delhi – 2005 data). Consequently, the rural areas are not connected to the national mainstream. If they get connected, they would be an asset to and an opportunity for the national economy. In broadband, two out of 10,000 people are connected in India (in rural areas this connectivity is

far less). A few years back, South Korea had broadband connectivity of one per cent. Today it is 30% and almost all households are connected by broadband, leading to more than 30% of the country's GDP being transacted on broadband. In South Korea this has been obtained by the National Government spending billions of dollars for creating a national connectivity network.

We do not have sufficient road and public transport connectivity to villages. But an opportunity exists today for all the six lac villages to be connected to the national mainstream in two to three years by broadband and internet telephony. We are starting late in comparison to other countries but this has to be seen as a great opportunity as today we have cutting edge technologies to implement this connectivity quickly. What we require today are rural networks on IP with unlimited bandwidth on demand which have been enabled by the availability of very high quality wireless from a range of manufacturers and the emergence of 'pioneer' service providers. The challenge is to create a network requiring near zero installation at the subscriber end, while providing end to end voice, data and video connectivity from anywhere in the world to the remotest corners of the rural hinterland and yet providing the same quality of connectivity as would be available in the most advanced cities at prices that are right.

What are our advantages today? The Indian corporate sector has already set up the national network and the Government/Regulator only needs appropriate policy frameworks to fully exploit this network. We have 16

terabits (implemented or being implemented) of international connectivity – but only 0.35 terabits has been lit and less than 0.02 terabits being is used. Domestically, 30,000 of BSNL's exchanges are connected by fibre – almost 5 exchanges in each block – an average of one exchange for 20 villages. Other corporates have also laid large amounts of fibre. Thus almost unlimited bandwidth is available down to a group of 20 villages. But most of this fibre is again dark. Wireless technologies exist today that can deliver broadband from these fibre ends to the 6 lac villages. And the pioneers have already identified this opportunity. Around five thousand villages have been connected by them already on internet/broadband. These pioneers are ITC e-Chaupal, N-Logue, MS SWAMINATHAN centre in Pondicherry, Akshaya in Kerala, Gyaandoot in MP with focus on e-Governance, Bhoomi in Karnataka, E-seva in Godavari District of AP and Warana in Maharashtra by NIC, TARAHaat, and could be some more. However, the pioneer model is not replicable in 6 lac villages. This model provides for large subsidies by the corporates, charitable bodies, NGOs or State Governments. Also the 5,000 villages have been carefully chosen by the corporates. We have to see how this model can be replicated in the entire country and what is the help these pioneers or other similar companies require.

As discussed above, we have the resources lying in the ground or under water – fibre not lit. We have aggressive wireless technologies, which can connect fibre ends to all the villages. Telecom Minister has announced 90% discount on domestic leased lines for e-governance. Such concessions can be given for the entire rural connectivity network.

Bandwidth prices can be reduced by reducing IPLC half-circuit prices (international connectivity) and domestic lease lines prices. TRAI has recently reduced, after consultations, domestic lease line ceiling tariff by 70%. as IPLC tariff by 70% for higher capacities. Bandwidth prices are now coming down. However, it has to be recognised that this bandwidth is currently available in almost unlimited supply but is not being used and will continue to be not used unless we launch this and similar massive connectivity projects. Hence, the pricing of bandwidth and other concessions for rural areas are carefully determined. The rural projects will not be viable even with these concessional bandwidth prices and for such projects, the bandwidth prices may have to be further subsidised from the USO Fund, at least for a period of 5 years. Thereafter, these projects would become commercially viable and a proper pricing can be charged for bandwidth. For the wireless connectivity from fibre ends to the villages, the pricing of spectrum would be considered in TRAI's recommendations on spectrum related issues. To promote the growth of wireless services in rural areas Authority would be considering spectrum allocation either free or at low prices. After all, there is plenty of spectrum in rural areas and an almost 'nil' demand. There would be issues of differential pricing for such projects and for the operator who has been given spectrum for the entire state. TRAI had therefore given its recommendation on Unified Licensing, which create 'Niche' operators for areas having less than one per cent rural teledensity. This difference can be justified as reasonable classification for spectrum pricing in the backward rural areas. For other

areas, the spectrum can be priced at the usual two per cent of revenue for mobile operators.

Once such networks are designed for these areas, they can also carry IP telephony and video, cable TV. Today the license condition does not allow unrestricted IP telephony on broadband connection. We can leap frog to another generation by linking such areas on telephones without disturbing the business case of the existing operators. These IP telephones could also be the franchisee of the telephone operators in those areas or be connected networks through 'Niche' operator network. But unless these networks also give telephony and video/cable TV, they would not be viable.

Entertainment has huge prospects in India. We have 71 million Cable TV connections and 45 million fixed line telephones. Our percentage of cable TVs to TV homes is much higher than the rest of the world. We have to recognise this advantage and give entertainment to the villages through this network. This would make the networks even more viable.

Wireless technologies allow a number of telephones and broadband connections in rural areas. Our past USO Fund policy only financed a limited number of fixed high cost telephones. This initiative was Government driven. We have experienced the huge success in mobile telephony, with focus on private initiative, which have far exceeded fixed telephones in the country within a growth period of a few years. Therefore, we also have to look at more aggressive models for rural connectivity and broadband. The initiative

has to be competitive and private sector driven. In areas where the pioneers have connected rural areas, the existing bandwidth is proving to be inadequate and the operators are upgrading their networks. The policy must encourage higher bandwidth connections and the bandwidth price fixation formula also should recognise this necessity. In Korea the broadband prices are low, 1/60th of Indian prices as the bandwidths being delivered on these networks are very high. Besides, it is expected that broadband prices in India will come down drastically once Finance Minister approves the fiscal package recommended by the Department of Telecom.

The experience of the pioneer networks show that once the networks are established many enterprising usages are discovered. Presently these networks are being used for enquiries on mandi prices, e-education, e-health, e-animal health and e-crop disease initiatives. They are also used for international IP calls, video conferences, downloading different forms and data from State Authorities, photographs etc.

In every state, many organizations are working in isolation from each other and spending crores in trying to set up new voice and data networks. The result is that most of these network projects either do not take off or they remain non-viable. With one common data network in place, such organizations can automatically hire this network as and when required at far lower costs, thereby directly or indirectly funding such networks. These organizations could include police stations, state electricity boards, revenue bodies, income tax, sales tax, excise duty, schools and colleges, banks and

financial institutions and corporates selling or purchasing commodities in villages. Due to these isolated attempts, there are situations like in A.P., where the State Government is planning an independent network despite huge surplus dark capacity in the BSNL network. Most importantly, such networks permit access to every village of the country from block, district, state or national government level. Only such networks can lead to efficient e-governance. Isolated networks can never bring government networks to the common man in villages. Such networks also automatically get connected to the world and these could give great advantages by extending the possibility of setting up of BPO, software, data processing, etc. centres for rural areas. After all it is only 10 years back that such networks were set up in metros in India and have shown the possibility of large income generation and employment in these areas. Once such opportunities are replicated in rural areas, there would inevitably be a lot of income generation and employment opportunity in rural areas.

The next question can be that of technologies. One could use leased lines, cable fibre or wireless technologies such as VSAT and wireless bandwidth point-to-point, point to multi point, MMDS and 802.11b/g products. However, the state or the regulators should never choose technologies. Spectrum and bandwidth should be made freely available for rural connectivity and the operators left to choose the best technologies. Once these networks are established in rural areas they could also be used by fixed lines or by mobile service providers as infrastructure for further connectivity.

The Government has recently accepted TRAI's recommendations on 'rural connectivity and this is driving the current growth. All experts now agree that we will reach 50% teledensity in 2010 from the present 25%.