

NKG on Rural Telecommunications in India

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I Introduction:

India with its 375 Mill. plus subscriber base is second largest in the world and monthly addition of 9-10 Mill. are highest in the world. Even then at present India is observing sharp & clear rise in terms of general development all around the urban society in terms of economy, values, knowledge, accessibility, information etc. People have access to the latest state of art technological products. But, the same is not at all true for rural and remote Indian masses, resulting in wide digital divide.

Emphasis in connecting the unconnected India presents the next big challenge and opportunity for operators and the Government alike. It is expected that over 30% of the next 250 million new subscriber additions are likely to be from rural India. The impact of connectivity on rural areas is much greater than it is on a consumer in the urban markets. Telecom is considered a key sector with a significant impact on promoting economic development. Through connectivity, people in rural India are able to challenge the information asymmetry.

Out of a total of 5, 93,485 inhabited villages, 5, 33,221 villages have been provided with Village Public Telephones (VPTs). The number of rural DELs as at October, 2008 is 1090.48 lacs. The rural teledensity stands at 13.40% as compared to urban teledensity of 74.61% as at October, 2008. That does not depict a good picture.

It is also said that the Growth of a nation is seen by its GDP which is said to be linked by the teledensity of that Nation. So we need to increase the teledensity in India. Telecommunication is marching ahead after the Government decision permitting the entry of Private Operators in Telecom Sector as per NTP-1994 and later by NTP 99. This has played an important role in the development of Urban Society. The Competition has increased to a level where a per minute call to USA has come down from Rs. 96 to nearly Rs. 1 in a span of 10 years. This has been possible due to technological advancement in this sector. The overall Teledensity as on December, 2008 is 33.00 appx. Out of which the Rural Teledensity is only about 10. Thus all the development has been limited to urban areas only. Government is committed to ensure that the benefits earned by such telecommunication developments are benefiting both the urban and rural masses. To make India a developed nation this huge gap between rural and urban India has to be filled in. This is possible by bringing rural India in the main stream which is possible by providing Telecom connectivity to the rural India. The technology used may be any, the end result is to see that India should be a developed nation by 2020 or even before.

United Nation's Goal is to connect the half of the world population by 2015. World over the subscriber mass has already crossed over of the 3 Bn. Mark. Presently India has 375 plus million connections and is targeting for 6500 Million connections by the year 2012. More than 50% of the world's population lives in villages while in India it is 70%. There are almost 600,000 plus villages in the Country with 1000 people per village and per capita income of Rs. 20 to 25 per day. These people need connectivity in order to be fully connected to the progressing world in order to make it a truly symbiotic society. For telecom operators, it is thousands of customers subscribing every day while for equipment vendors it brings a unique challenge to develop new solutions that provide the access to these communities.

While Government has been doing its party by way of promotional policies, yet there is also need for some technological solutions and a Sustainable Business Model that can make a

difference in the lives of individuals of rural & remote areas in terms of Health, Education and Enhancement in their income etc.

II Government Support/Decisions for Expansion of Telecommunications in Rural & Remote areas.

Govt. has always supported rural telecom development activities by taking measures like ADC, USO fund, DIT assisted Broadband Project, SWAN (State Wide Area Network), Increasing Teledensity etc.

➤ Access Deficit Charge (ADC)

Due to opening up of the telecom sector, intense competition has been witnessed in the mobile and long distance sector and steep fall in the tariff for long distance calls, both international long distance calls and national long distance calls. Access Deficit arises when the tariff specified for access does not cover the cost of providing access. The ADC compensates for the below cost rentals especially in rural areas, local call charges, provision for free calls etc. to make the fixed line telecom services affordable to the common man to promote both Universal Service and Universal Access as per NTP'99. Prior to the opening up of the telecom sector, the Access Deficit was being taken care of through a cross-subsidy from domestic and international long distance tariffs. With stiff competition in the National and International Long Distance segments as well as in the Access Network (Fixed line, WLL (M) and Cellular Mobile), there is a sharp decline in the prevailing tariffs. Market forces through Open competition and the implementation of cost based termination and carriage charges has led to a situation that operators are no longer in a position to take advantage of cross subsidy through long distance traffic as was the case earlier. As a result, there was a need, to compensate the access deficit for fixed line Service Providers.

It is noteworthy that even developed countries like the U.S., Australia, Canada, and France, with lesser compulsions of providing low rentals and tariffs for unviable services have also implemented schemes to recover the access deficit. The ADC regime was introduced together with the Interconnection Usage Charge (IUC) regime.

The Salient features of the present ADC regulation as effective from 1st April, 2007 are as given below:

- The total amount of ADC for the financial year 2007-08 is reduced to approximately Rs. 2000 Crores from existing level of Rs. 3200 Crores.
- Per minute ADC on Outgoing International Long Distance Calls reduced to zero from existing level of Rs. 0.80 per minute i.e. complete removal of per minute ADC burden on domestic consumers in outgoing international long distance calls.
- Per minute ADC on Incoming International Long Distance Calls reduced to Re.1.00 per minute from existing Rs. 1.60 per minute i.e. reduction of around 38%.
- ADC on percentage revenue share reduced to 0.75% from existing 1.50% of Adjusted Gross Revenue (AGR) of all service providers i.e. Access Providers, National Long Distance Operators and International Long Distance Operators. This amounts to reduction of 50% of ADC on percentage revenue share basis.
- Major relief to domestic telecom sector by reduction of ADC on percentage revenue share and removal of per minute ADC on international outgoing calls.
- No ADC charge on revenue of access providers generated from rural wire line subscribers.

As per latest recommendations, ADC is being phased out with effect from 31st March, 2009.

➤ **Universal Service Obligation Fund (USOF)**

The NTP-99 provided targets to achieve Universal Service Objectives. These were:

- (i) Provision of Voice and Low speed data service to the balance 2.9 lakh uncovered villages by the year 2002,
- (ii) Achieve Internet access to all district headquarters by year 2000, and
- (iii) Achieve telephone on demand in urban and rural areas by year 2002.

The NTP-99 provided that the resources for meeting the Universal Service Obligation (USO) would be raised through a 'Universal Access Levy' (UAL), which would be a percentage of the revenue earned by the operators under various licenses

The details of USO Fund implementation have been described in other article entitled India USO Fund available on www.nkgoyals.com.

➤ **Bharat Nirman Programme**

Under the Bharat Nirman Programme, a target of providing VPTs in 66,822 uncovered villages have also been undertaken and till 30th November 2008, nearly 55,851 villages have been provided with telephones.

➤ **Increasing Teledensity:**

Background : Teledensity is the number of telephones per hundred of the population in the Country and one of the important parameters to assess the level of connectivity in the country. The main factors affecting the Teledensity are socio-economic conditions, per capita income, literacy rate, terrain conditions, availability of infrastructure etc.

In 1948 i.e. just after independence, our overall Teledensity was only 0.02%. The government did make efforts to increase this and by 1998 i.e. after 50 years of independence, Teledensity had increased from 0.02% to 1.94% and its increase during this 50-year period was 1.92%.

Trends: Teledensity increased from 1.94% in 1998 to 5.11% in 2003 i.e. an increment of 3.17% in five years (about 0.63% per annum). The growth substantially picked up after 2003 and during 2003-07 i.e. up to March 2007, it touched to 18.31 % and it has been of the order of 3.30% per year. During each year thus the growth exceeded the 50-year increase after independence. The growth in the period 1998 to 2007 was primarily public-private sector driven and also by the new technology i.e. mobile technology. During this period i.e. March 1998 to March, 2007 number of subscribers increased from 18.68 million to 206.83 million.

Present Status: The Telecom Sector is one of the fastest growing sectors of the Indian economy today; India's more than 375 million plus telephones network as on December, 2008 is second largest in the world. Since introduction of phones in the country i.e. 1881 to 1998, the number of phones provided in the country was only about 18.68 million. Over the last few years, the regulatory framework in India has undergone a radical simplification and rationalization in its policies, procedures and regulatory aspects. A series of ambitious economic reforms have been introduced to bring India at par with global economies. In the recent past, every month more than 9-10 Millions phones were being added.

Target fixed by NTP: As per New Telecom Policy-1999, targets of an overall tele-density of 7% by the year 2005 and 15% by the year 2010 and 3% in rural areas by March 31, 2007 and 4% by 2010 were fixed. These have already been achieved. This has been due to various measures taken

by Government like including cost based IUC (Interconnection Usages Charges) regime, reduction in ADC (Access Deficit Charges) and tariff. There has been a phenomenal growth in tele-density. With the current regulatory policies and the ongoing thrust towards cost based interconnection, the new target is 500 Mill. phones by 2010 i.e. tele-density of about 50.

Now, One phone per three rural households by the year 2007 (about five Crores rural connections) and one phone per two rural households by 2010 (about eight Crores rural connections), has been planned. Mobile access to all villages has been planned.

As against the estimated growth rate of 16.5% in the perspective plan (2002-2007) the actual growth rate has been much higher i.e. at 40% p.a. during this period. The wireless phones would play an important role in achieving the plan objectives of telephone on demand.

III **Reasons for not developing of Telecommunications in rural areas:**

Some of the reasons due to which the Telecommunications in rural areas in our Country have not developed in the past include:

- Inadequate Business Models due to various reasons.
- Low Population Density
- Low Income Levels
- Lower Literacy Levels
- Preference of operators for high earning areas initially.
- Technology Limitations and High Costs of Delivery and
- Some other factors related to policies and priorities

IV **What a Rural Connectivity Model should be?**

Success of any business model depends upon its acceptability by the users. The users are not concerned what technology is deployed for meeting its requirements. As long as its requirements are met by any technology at the affordable cost the users are satisfied. The GSM and CDMA both technologies are working together in the same locality for the same purpose. Earlier the success of cable TV is also an example.

The demand: The experience so far has shown that there is no dearth of demand in rural areas. There is need for some rural specific packages suitable for rural areas. Concept of smallest sachets of shampoo, pan masala valued at Rs 1 and less has resulted into volumes of demands. Likewise mobile charging modules of Rs 10 and less, lifetime connections for less than Rs 100 has created big demands.

A considerable latent demand for person-to-person communication already exists, and phones are easy to use, have low maintenance and support costs, and can support a wide range of voice based and data services. Significant advantages can also be gained by using VOIP (Voice over Internet Protocol).

Wire line Connectivity is not available in Rural areas : As is well known that affordable high-speed wire line connectivity is not always available in rural areas as it would require running long distance cables through forests, mountains and other rough terrain and involves high Capex and Opex.

So any business model prepared for rural area should be:

- Affordable (Cheaper)

- Reliable
- Rich in Contents
- Available in Local Language
- Self Sustainable
- Replicable and
- Scalable
- Easier and faster to Deploy
- Deploy alternate sources of Energy
- Low maintenance and Support Cost

V What is the Alternative?

Wireless networks have become the technology of choice for increasing access to phone and Internet services in developing countries. They are not only cheaper, easier and faster to deploy than traditional landline alternatives, but also make possible business and service delivery models better adapted to rural, low income communities. Several options exist to get connectivity into rural areas.

- Mobile wireless (cellular) networks are expanding rapidly and provide some rural coverage, but are expensive and only advanced networks have significant capacity to transmit data;
- Since the demand for voice services is so high that data network services may not be deployed initially.
- Fixed wireless technology (WiFi, Wi-Max) is cheaper to deploy and has a much higher data capacity, but the end user device (usually a computer) is more expensive than a cell phone.

Once connectivity is brought into a rural locale, it can be spread over a larger area by setting up a fixed wireless network (WiFi hotspot or WiFi mesh network). Creating a local community wireless network can be done quickly.

VI Assumptions while preparing the model:

- In India almost all district headquarters are connected by the fiber to the PSTN backbone, eliminating the need to use legacy copper wire infrastructure.
- The model to be prepared should keep in mind the economics and ground realities of providing connectivity to the sparsely populated areas of the Rural India.
- What services are to be provided such as Voice, Data (Internet) and Video or a combination of these?
- Low cost of equipment yet reliable.
- It should use efficiently the available existing infrastructure.
- Ease of deployment and minimal maintenance requirements.
- Use of alternate source of energy to avoid power problems.

VII Harnessing the Technology for Rural Connectivity:

In the present network environment, mobile communications has proven to be one of the most effective ways to provide rural coverage. The high volumes has lowered the cost of technology down significantly and brought the technology available for an increasing number of users.

Of course, the mobile business themselves also spur economic activity, with local franchisees or entrepreneurs taking the opportunity to run their own mobile access businesses. In some regions,

airtime is already being traded as a new form of currency. Involvement of local entrepreneurs of rural areas can play important role. They can/may be asked to associate in initial investments in villages. A villager may not have seen computer but he can easily communicate in local language. They at least become key marketing person and thus general awareness on telecom merits can be introduced. Innovative training programmes enable rural communities to develop the local capabilities they need in order to thrive.

Thus companies suggesting the solution to such requirement should keep in mind that technology should be harnessed to change the face of rural community by providing urban amenities to the under-privileged, living in the rural areas and that is possible by offering them connectivity in a cost effective way.

The emerging technology, tools and benefits of the knowledge economy can actually help transform the dream that we have for our villages into reality.
