

Telecom and Rural India: The Story So Far

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Despite the apparent explosion in the use of mobile phone technology, only a small percentage of the rural people have gained from its use; the challenge lies in reaching out to this vast untapped section of society, through ways that take into consideration their ground realities—their needs, strengths and limitations

Access to technology in rural areas has always been problematic, especially telecommunication. Despite the tall claims of Indian telecom operators of India being one of the most lucrative markets of the world, the rural Indian market is in a sad state of affairs when it comes to mobile phone connectivity. By the end of March 2010, India had 584 million mobile subscribers. This accounts for 53 per cent of the total Indian population. However, if we look at the distribution of the mobile subscribers across India we find that 81 per cent of the total number of mobile subscriptions are in the cities, including the metros and the tier 2 and tier 3 cities. The contribution of mobile subscribers from the rural areas is a dismal 19 per cent of the total subscribers whereas the rural population forms 72 per cent of the total Indian population. This means that 28 per cent of the total population contributes to 81 per cent of the total number of mobile subscriptions. And despite almost three-fourths of the population being oblivious about mobile communications, we claim to be the telecom giants of the world.

The government recently auctioned the 3G spectrum with an expectation of raising Rs 35,000 crores. It was in a surprise when the auction brought in Rs 67,710 crores. 3G has been pitched by the government as the gap filling technology that will help provide access to various mobile services to the rural India. In order to understand the impact of 3G and analyze it, we must understand the following terminology first.

MVAS: Or simply called VAS, it stands for Mobile Value Added Services. As the name suggests, these services add value to a mobile's basic service of talking over the phone. Therefore, it includes every other service that a mobile provides. Some of the most common VAS services, are caller tunes, ring tone downloads, Internet, Global Packet Radio Service, or GPRS, cricket scores and much more. In fact, even the text SMS comes under the purview of VAS.

Table: Access to Mobile Phone Technology in Different States

Top 15 States in Terms of Rural Mobility	Rural Mobile Connections (in Millions)	Total Rural Population (in Millions)	Penetration in Rural Areas (in %)
Punjab	2.24	10.83	20.69
Himachal Pradesh	1	5.85	17.09
Kerala	25.03	10.63	
Haryana	1.66	16.27	10.2
Gujarat	3.2	34.42	9.31
Tamil Nadu	2.8	32.86	8.52
Andaman & Nicobar Islands	0.02	0.27	8.27
Rajasthan	3.27	48.66	6.72
Maharashtra	3.79	59.67	6.35
Karnataka	2.25	36.56	6.15
Andhra Pradesh	3.27	59.27	5.52
Jammu & Kashmir	0.43	8.24	5.21
West Bengal	3.01	62.48	4.81
Orissa	1.28	33.06	3.88
Uttar Pradesh	4.6	147	3.13
Total	35.51	580.47	6.12
All India (Rural)	39.46	802	4.92

***Data as per the reports till December 2009**

IVR: Integrated Voice Response is the most popular and effective system. Many of us may not know what an IVR is but all of us use it regularly. An example of IVR is when we call the customer care service of a bank, and a pre-recorded voice guides us to various options. This is most effective because the user just has to press a few buttons and he/she is able to access the information that he/she needs.

2G and 3G: 2G stands for 2nd generation mobile technology whereas 3G is the 3rd generation mobile technology. We are currently using second generation mobile technology. In mobile communication technology, the mobile handset has to communicate with a mobile tower and a transmission of data between the two takes

place. Here lies the difference between the two technologies. 3G offers higher speeds for this transmission as compared to the existing 2G technology. With 3G technology, the transfer of data can be achieved at a rate of 2 megabits per second. Or in other words, we can download a song in less than 3 seconds! It also enables a user to make phone calls and transmit data simultaneously. Some of the most awaited services of 3G are:

- **Mobile TV:** A user can see popular TV channels on his phone.
- **Video on demand:** The user can download and watch videos as per his wish.
- **Video conferencing:** Users can have live audio-visual communication with each other.

- ♦ **Tele-medicine:** A medical provider can monitor and provide advice to the potentially isolated subscriber.
- ♦ **Location-based services:** A service provider can provide localized weather reports, traffic conditions, market reviews, etc.

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which provided weather forecasts and local market prices in Bijnor district in UP. But this service was a complete failure and had to be withdrawn.

Reuters, Biostat India Limited and Aga Khan Foundation's rural support

programmes were clubbed together to reach farmers in Gujarat. They developed a service providing crop information and called it Reuters Market Light. It was launched in Punjab, Haryana, Maharashtra, UP, Gujarat, Rajasthan and Madhya Pradesh too. Another service called Krishi Voucher card was launched with Idea Cellular. Nokia tied up with EnableM for launching an educational service that would help rural mobile users to learn English. BSNL was the mobile partner for the service.

Reliance communications and BBC news partnered to broadcast news and weather reports in Hindi, Tamil, Urdu and Bengali in rural India. It also offered solutions that will help to monitor water levels, and gather data for milk and agriculture-based cooperatives, fisheries, poultry and soil analysis.

It is not that currently mobile operators are oblivious of the rural market. The government-owned BSNL has partnered with National Fertilizers Ltd. (NFL) to launch a pilot project, offering information on crops, weather forecasts, soil testing and health in local languages through mobile phones. According to reports, the pilot project will be run in Madhya Pradesh and Chhattisgarh. BSNL, associated with the state government and the mobile VAS provider OnMobile, will launch a pilot project that offers a 'Mandi OnMobile' service in Uttar Pradesh. Airtel launched Kisan Sanchar with IFFCO in 2008. It already caters to over 15 lakh users across 18 states. Reliance communications formed a joint venture with Krishak Bharti to provide customized farmer-specific, mobile-based, value-added services in rural areas.

Tata Consultancy Service's MKrishi went even further. Because the villagers are illiterate, providing reading material to them over a mobile phone hinders the effectiveness of the service. Therefore, they launched voice SMSs through Tata Indicom by which villagers could hear the audio message instead of reading it. Tata partnered with Ossian and launched the Nano Ganesh service that would automate agriculture and irrigation services for farmers in Sojitra village in Gujarat. Tata Indicom also began offering a service called Sahayak,

In October 2008, the mobile VAS provider Handygo tied up with the Indian Meteorological Department and enabled a service through which farmers could be provided with meteorological inputs. Another service provided them with details on sourcing bank loans and market rates of crops and other produce on a local scale. These services were launched as IVR and GPRS in several districts of Punjab and Haryana, and the information was specifically designed in the local languages. Handygo also joined hands with Indian National Centre

for Ocean Information Services (INCOIS) to develop services that will help fishermen with information on potential fishing zones, wind speed, wave height and the suitable weather for fishing.

Many of these projects were launched on an ad-hoc basis without extensive market study. Most of them have not reached across India. Many of these services have been introduced and withdrawn, and due to this irregularity in mobile services, which had huge potential, the technology is losing credibility among rural mobile users.

Then arises the question as to how does 3G help the Indian people and the people in the villages, in particular. Now that the service has been made operational by various private operators, there is a flood of different types of products and services. However, in rural areas, relevant services are crippled by the fact that the reach of broadband Internet services is almost negligible because of the low accessibility of computer systems, the erratic supply of electricity and the unaffordable costs of computer hardware.

Mobile services have better reach and affordability in rural areas and could fill the gap. Not only do these provide several services that were inaccessible to the rural people but they also provide quality services. Just imagine if a villager is able to access medical help through his mobile when someone in his family has fallen sick. Or if he is able to access information on the rainfall patterns and forecasts before sowing seeds for the season. Or if the government needs to broadcast information about new schemes,

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it can do so through mobile videos. A villager can access information about NREGS through the NREGA website and file grievances over the phone from his home. There are myriads of ways in which services can be provided. As far as the market is concerned, the urban market is saturated. Mobile service

operators have to think about an untapped market; the rural market is the way to look forward. The estimates are that 70 per cent of the total future growth of telecom in India will come from rural India and 40 per cent of new mobile users will be from rural areas. This has also made the government claim that 3G technology will reach the rural areas by the end of 2012.

However, these are all tall claims. Private mobile operators have not been encouraging the rural markets before this, having concentrated totally on urban markets; this is why the rural market has been dominated by BSNL. Mobile operators have already paid a very high price for obtaining the license for 3G spectrum, for which the final bid was Rs 67,710 crores—90 per cent higher than expected. The operators, naturally, will seek to recover these costs. This will deter the operators from taking risks in experimenting with the rural markets. They will try to recover all the money they have put in as fast as possible and attain the breakeven point. They will look to the urban markets first, which has a ready user base and an assured cash flow. The rural sector does not have an existing user base and, therefore, the operators will not focus in the beginning on creating a user base. Therefore, the inauguration of 3G in the rural sector might be delayed a little longer.

Another deterrent to the advent of 3G services in rural areas is the technology of the mobile phones. In an average village, a Rs 2,000 phone is considered a status symbol. The villagers cannot afford expensive mobile phones. Producing mobile phones with 3G technology at such low prices is a real challenge for mobile phone manufacturers. Setting up the communications infrastructure itself is another challenge. However, this issue can be resolved by forming strategic alliances on the sharing of the already existing infrastructure. It will be interesting to see how the private operators arrive at an understanding over the issues that arise on sharing of the infrastructure, especially the costs incurred.

The biggest problem, however, lies with the mobile user under consideration. The average villager is not well conversant with the complicated features of an advanced mobile phone and prefers to use a phone that is simple and easy to use. A 3G mobile phone will definitely be complicated and its usage will often require intelligent inputs from the user. Understanding the service and how to operate the phone will be a huge task for the uneducated villager and he/she may not be able to perceive all the benefits of the phone. Therefore, the villagers may reject the service and the phone itself. Even if mobile services are made extremely user friendly and mobile phones are less costly, the big challenge will come from the pricing of a particular service.

The VAS industry almost entirely works on a revenue sharing system. To understand this, we have to understand the players of this

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industry. There are three categories of the players in VAS industry: mobile operators such as Airtel, BSNL and Reliance; the VAS service provider; and the third-party content providers.

The VAS service provider is the partner to the operator, who provides VAS technology and content to the operators. Usually, VAS providers take third-party content providers and share the revenue generated out of the service. The operator always takes the lion's share of the revenue generated because he/she provides the channel, infrastructure and the reach. The operator has the power and position to demand up to 70 per cent of the total revenue. The remaining 30 per cent is shared by the service provider and the third-party content provider. On an average, a service in rural areas is charged at Rs 1 per day, that is, Rs 30 per month. Without considering the service tax, the revenue earned by operators per user is Rs 21 per month and the balance of Rs 9 is shared by the service provider and the third party. The industry, therefore, has to work on large volumes because a share of Rs 9 per user per month is neither encouraging nor lucrative. This also indicates how crucial the pricing of a particular service is in the success of VAS in rural areas. If the pricing is too high, the user won't be willing to pay. If it is too low, the service provider won't get anything out of it.

The VAS industry in India was estimated at Rs 5,780 crores by June 2008. The VAS industry, which began in 2000, has still not broken even. We cannot expect the industry to compromise on revenue; it will continue

to plan and implement projects based on profits. All in all, the telecom revolution, despite having vast potential in rural areas, is set for a delay and we may not see its rise for another decade. We may conclude that the acceleration of telecom services in rural markets can only be driven by the government's vision and policies that may provide subsidies and compensatory packages thus making both the businessmen and the mobile users happy. Therefore, the telecom players in India must wake up or else it may be too late because many western European countries are talking about 4G and in some countries 3G is already a thing of the past. We would not want the telecom potential in India to become obsolete and outdated on the international stage.

Looking at this opportunity from the development point of view, the biggest deterrent proves to be the technology. It has already been established that it will take almost a decade to install necessary infrastructure to provide 3G services in the rural sector. It will take real effort by the development sector to understand the benefits offered by this technology. But it will be a real challenge to inculcate the knowledge of the usage of this complicated technology and generate awareness among the rural people. An average villager can barely write his name. It will take some training to make him understand the working of a 3G phone. It is no different from implementing a new activity such as INRM or any other livelihood activity. The only difference is that rural people cannot directly relate 3G technology to their daily lives because it is just a means to an end.

Obviously from a development perspective, 3G has promising potential that must not be ignored. One of the most lucrative and potentially viable services that 3G will offer is the video on phone. Through videos, a villager can be informed about several developmental activities. It can compensate for the non-availability of both the television and the Internet in the rural areas. For the many illiterate people, it is far more effective to provide them an audio-visual service than text-based services. The development sector must keep a track of the latest developments in the rural telecom sector and have a vision about the application of this technology in this sector; alongside, emphasis should be laid on exploiting the existing technology and use it for the development of the rural sectors.

Although the penetration of mobile services in rural sector is dismal, the sector can no longer be ignored by service providers. It is expected that well before launching 3G services the service providers will launch relevant pilot projects. Development workers should check out those services when they are launched and create awareness among the rural people. The major purpose that it will solve is to create a platform for 3G technology and when it arrives at the grass-roots level, people will be encouraged to use it as something that is beneficial to them and not something alien and unheard of. This process may be slow and will involve much 'waiting and watching'; however, when 3G does arrive in the rural areas, the sky will be the limit.