A reflection on the current status of Telecommunication in North Eastern Region with special reference to Assam

Kapou Malakar

Assistant Professor, Department of Mass Communication and Journalism**,** School of Humanities and Social Sciences,

Tezpur University, Napaam, Tezpur Assam, India

Abstract: The paper discusses the challenges in rolling out telecom services in states of North East Region of India and current status of Telecommunication in Assam including the wireless tele density of the state. Interview with the representative of the Government officials of Department of Telecommunication support to examine the present and future schemes of rolling out telecom services in North East Region. The paper also examines the project initiative of USOF, broadband for all in North East Region. The telecom operators in India have made heavy investment on 3G spectrums. To ensure equitable distribution of basic amenities and services across geographical distance through the support of MVAS, adequate network coverage across the country, incessant connection between District Head Quarter and Gaon Panchayats and penetration of mobile phones in non-urban areas is a critical requirement.

Keywords: North East Region, Telecommunication, Challenges to Telecommunication, Wireless, Tele-density in Assam, Telecommunication and Development.

1. INTRODUCTION

There is a direct correlation between increase in tele-density and growth of GDP. Universally, most of the states or local governments miserably missed the reported observation by World Bank that 10 percent increase of tele-density would lead to 1.4 percent increase in GDP. Nevertheless, tele-density of the North East region, particularly of Assam is still much lower than the national average. State-wise average penetration rates of mobile phone in Assam is 13.67 percent out of which rural mobile phone tele-density counts for 3.85 percent as oppose to 72.46 percent of urban mobile phone tele-density (Singh S. 2010). According to Department for Development of the North Eastern Region (DONER) estimate, the overall tele-density in Assam is only 10.65 percent compared to the national average of 20 percent. This indicates the existed huge disparities in the country in terms of uneven distribution of telecommunication access.

Cellular phone services were introduced in the North East after a delay of eight years (TRAI, 2013). Most of the service providers also face problems in getting permissions to lay cables and in getting land for installing base trans-receiver stations. Electricity supply and its quality, the condition of the roads that hampers transportation of materials are some of the major problems in cellular expansion in rural Assam. Frequent bandhs and road blockades also lead to time overrun and cost escalation.

In the seventh special North Eastern Council summit on IT and Telecom in 2007 , it was insisted on to work towards a 'One India Plan for Bandwidth' in order to lessen the suffering of North-East States in the face of higher cost of bandwidth in the region compared to the other regions of the country. It was decided that both North East Council and Power Grid Corporation of India would work in

coaction for funding and for laying down the over ground network cables by using network of electric towers and poles respectively. This decision was taken to address the problem of laying underground optical fibers in hilly terrain. (TRAI, 2013).

'North Eastern Region Vision 2020' lays special emphasis on advancing of telecom facilities in the region of North East in line with the accelerating economic welfare of the region. Although various endeavors have been taken from time to time in order to improve telecom connectivity and tele-density in the region, the results have not been very promising so far.

1.1 Telecommunication in North Eastern Region

As per the current licensing scheme, the states of North East Regions are distributed in three Telecom Licensed Service Areas (LSAs). The North East Telecom Licensed Service Area includes six states of North East excluding Assam. The State of Assam comes in Assam LSA.

The slow and constricted telecom services in the NER as compared to other states of India made the Department of Telecommunication to raise concerns. Of the total 45,214 villages of NER, 9190 inhabited villages do not have even basic voice coverage (TRAI, 2014).

The low tele-density and the pitiable existing Quality of Services (QoS) as rendered by Telecom Service Providers (TSPs) has characterized the North Eastern States. The challenges that the North East Region have been suffering count in poor quality of existing transmission bandwidth at the State Capital and District Head Quarters. Until the year 2012, existing infrastructure in the region could not even support the basic 2G mobile coverage. Telecom Regulatory Authority of India have put forth in its recommendations for a comprehensive Telecom Plan after

analyzing various gaps regarding the telecom connectivity and poor quality of services in the North east Region. Accordingly, NER is prioritized for 'state-of-the-art' connectivity for data and the existing infrastructure under the TRAI Act of section 11.

1.1.1 Status of Telecommunication in Assam

The state of Assam consist of 27 Districts, 53 sub-divisions, 219 Community Development Blocks and 2202 Gram Panchayats. The total population of Assam is 2,53,55,528, as per 2001 Census, of which rural population accounts for 2,19,76,940 (86.68%) and urban population records 33,78,588 (13.32%). The state of Assam consists of total 26312 villages as per 2001-Census, of which 25124 are inhabited and remaining 1188 are un-inhabited. The average household size varies from 5 to 6 members per household in Assam.

The Tenth five year Plan (2002-07) has designed the expansion of telecom network in rural areas. Accordingly, the phone penetration in rural areas increased to 494.06 Million by August 2009 from 9.01 million in March 2002. All India rural tele density has improved from to 17.12 percent by August 2009 from 1.21 percent in March 2002. However, registered rural tele density at national level is lesser than urban tele density of 98.70 percent in August 2009 (DoT,2009).

The Assam Telecom circle was formed in January 1987 after bifurcation of the erstwhile North-Eastern Circle. Telecommunication facilities in the state have been growing steadily in recent years.

The corresponding Assam tele density figures are about 14.9 percent (rural) and 75 percent (urban). The tele density of Assam records 1.84 percent as oppose to 3.8 percent of tele density at all India level. The total numbers of telephone exchanges in the State were 567 as on 31st March 2003, of which 153 are based in urban areas and 414 in rural areas. The registered working telephone connections in Assam were found 4.79 lakh by March, 2003. Nearly 14 internet stations (nodes) with 9238 connections were found in Assam till March, 2003. The total revenue realized during the year 2002-2003 was Rs 274.44 crores (DoT, 2009).

Access to voice and data services can play a crucial role in the overall development and growth of the rural areas. This necessitates the need to address the lack of widespread telecom connectivity across North East and to build infrastructure in rural/ remote areas.

Northeastern summit on IT and telecom in 2007 suggested that 8652 villages without a Village Public Telephone (VPT) would be considered to be the recipients of telephone on wireline/ fixed wireless terminals while 279 villages which are remotely located and cannot be provided telephone on conventional technologies shall be provided VPTs using Digital Satellite Phone Terminals (DSPTs).

The above statistics of the density of telephone in Assam shows the rate of growth of number of people having telephones at home. With such rate of growth and various schemes and policies of the government especially for the north east region has made communication more feasible in the state.

1.1.2 Wireless tele density of Assam

As on May 2013, there are 1,45,48,912 number of wireless subscribers in Assam and wireless tele-density of the State notches 45.36 percent. Of the 27 DHQs, 20 are connected by OFC ring, whereas 6 DHQs are on linear OFC. The digital microwave connected DHQs and towns in Assam are compatible to 2G mobile network. Out of total 25496 villages in Assam, 22611 villages are covered by 2G mobile network. Still 2885 villages do not have mobile coverage to date. Even the USOF funded project that aims to connect DHQs to Block HQs has also suffered in Karbi Anglong and Bring Dima Hasao Districts. About 40 percent of the BTSs have been proposed for Karbi Anglong and Dima Hasao district. Installation of new BTSs, as proposed, has been a challenge in these districts of Assam.

The roll-out of 3G services in Assam is largely limited to DHQs. High reserve price for spectrum have made the operations of Tata Teleservices unviable in the circle of Assam, J&K and North East. Bharti Airtel has launched its 3G services in Assam telecom circle in 2012-13 which claim to have fast and speedy internet access through mobile phone, video calling, video streaming, Mobile TV, social networking, and high definition game. Trailers of various Assamese movies on the mobile phones are offered at a high speed .The charges of 3G local, STD and Roaming Video Call has reduced to 5 paisa per second as offered by Airtel.

In Assam, Aircel, Airtel (Bharti Hexacom), BSNL and Reliance Telecom Ltd. (RTL), have launched 3G spectrum. Reliance Communications has already launched the Reliance 3G Services in Assam and North East Telecom circles. In the first phase, Reliance launched High Speed Wireless Broadband services with a speed capacity up to 28 Mbps, Live Mobile TV service in Guwahati, Jorhat (Assam) and Shillong (North East)**.** Reliance tossed Combo plans of 3G service and 3G Data Plans in Assam and Shilling that include Voice, Data and SMS, starting from in a tariff of Rs.199 (Bafna, 2011). Reliance Jio Infocomm Ltd has installed about 800 mobile towers across the state of Assam. The company has started laid down optical fiber network (OFC) for rolling out 4G networks services in two telecom services of Assam and Northeast region in 2013. The developmental goal of rolling out 3G and 4G services will be realized in the creation of job opportunities for the users of the region.

There has been glaring gap in the existed telecom infrastructure and of essential telecom service rollout in the North Eastern Region States and in other parts of country. Absence of adequate connectivity from transmission media (OFC, Microwave, and Satellite) lead to inadequate bandwidth for high speed broadband capable transmission of data.

1.2 BROADBAND FOR ALL IN NORTH EAST

In order to achieve the pursuit of 'broadband for all', Bharat Broadband Network Limited (BBNL) has implemented National Optical Fibre Network (NOFN) as a gateway to rural development. BBNL unlike BSNL has partnered with private sectors for providing other services

in the remote places on a viable business model. BSNL, PGCIL and RailTel, have significant contribution in laying down OFC network across India. Bharat Broadband Nigam limited (BBNL) has emphasized on incentives around useful and priority services via NOFN infrastructure and not to make this high capacity access network bandwidth free for citizens. Presently, BBNL implemented two projects- one of which is connecting District Head Quarters (DHQs) to Block Head Quarters (BHQs) as funded by Universal Service Obligation Fund and another for connecting BHQs to Gram Panchayats (TRAI,2013). Pilots to install OFC based connectivity have already been executed in three states- Ajmer (Arian Block covering 30 Village Panchayats), Vishakhapatnam (Paravada Block covering 17 Village Panchayats) North Tripura (covering 17 Village Panchayats under Panisagar Block).Companies like Reliance, Airtel have made significant amount of investment establishing access network in Assam and other NER complementing the NOFN infrastructure and designed commercially viable models to offer citizen services.

1.3 PROJECT INITIATIVE FOR USOF IN NORTH EAST REGION

Universal Service Obligation Fund has prioritized the development of common infrastructure to make telecom facilities accessible in rural and remote areas of North East Region. As part of this venture, USOF addressed the gap between Block Head Quarters & District Head Quarters regarding fast connectivity through Optical Fibre Cable. An agreement was signed with BSNL on 12th February, 2010 (based on open tender) in order to augment, create and management of intra-District SDHQ-DHQ OFC network for carrying rural and remote area traffic on bandwidth sharing basis in the Assam LSA This OFC Scheme has been undertaken on a Build, Operate & Own (BOO) basis**.** Accordingly, BSNL has to center on building, operating, owning and managing OFC network and other infrastructure across intra-district. Telecom Service Providers in the Assam LSA will be sharing 70 percent of the subsidized bandwidth at a rate of 26.22 percent of the current ceiling tariffs as approved by TRAI. Another agreement has been signed with Railtel in January 2012 for expansion, construction and running intra-district SDHQ to DHQ OFC network for Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura (TRAI, 2013).

1.4   CHALLENGES IN ROLLING OUT TELECOM SERVICES IN NER STATES

USOF supported the installation of many BTS sites in the states of the north eastern region for a period of 5 years till 2013. Some Telecom Service Providers anticipated the non-viability in continuing and maintaining the sites without the support of USOF. Precarious and perennial power cut , circumscribed provision of electricity supply which is available only for 14 hours a day, and of consecutive flow of Diesel Generators (DGs) as restricted by time (between 6 pm to 6 am), high captive charges are levied for running DGs, have exacerbated difficulties in

telecom installations by Telecom Service Providers in NER States. Inadequate sunlight and deterred climatic conditions has made the use of solar power ineffective for running a Base Transmission Station in NER. Insurgency made free movement of people restricted in some North East States especially during night hours. Numerous uprising for separate states followed by economic blockades has created delay in operations and maintenance essential for telecom services.

Lack of proper road connectivity is a problem for most NER States in remote hilly locations. This has resulted impediments in installing, well-functioning and maintaining of telecom infrastructure in NER. Hilly landscape of the Most NER States is incompatible for the installation of Base Trans-Receiver Station (BTS) for wireless coverage. In fact laying of Optical Fiber Cable (OFC) is not physically and economically viable across the hilly terrain of North east. As a fact of the matter, limited number of OFC Points of Presence (POP) in the NER States which has resulted pertinent bandwidth problem and slow data transmission. Road widening work and frequent landslides lead to fiber cuts, thus, a continued disruption to services. Regular cut of underground OFC is more prominent in rural area is un-coordination in road construction in terms of digging and repairing as a part of activities under Government sponsored employment security scheme such as Mahatma Gandhi National Rural Employment Guarantee (MGNREGS) and Pradhan Mantri Gram Sadak Yojana (PMGSY). Under NOFN project in 2013, several lakhs route-km of OFC are announced to be laid under in rural Assam. However, lack of a strong mandate and the absence of harmonization in the activities of local authorities-Rural Panchayat body and multiple entities such as rural electricity, PWD, Gas, Water, and of NOFN implementation partners has already resulted significant waste of financial resource. There are many telecom service providers who are looking for basking out the lucrative market for telecom in north east region. Local authorities in rural Assam is being reported to charge huge amount for making Right of Way (ROW) permission in laying optical fibers. Moreover, government of many states have not ensured a single-window clearance system to facilitate telecom service providers in setting up of telecom infrastructure. In many rural areas, local authorities are reportedly unsupportive to any accommodate any new technological innovation.

Permissions regarding erection of telecom tower for installing of BTS by Local authorities or village headman is routinely delayed as well as denied. After the earthquake in 2011, erection of Roof Top Towers (RTT) is banned in a few states due to which building of Ground Based Tower (GBT) remains to be the available option. However, land acquisition for raising a Ground Based Tower is not free from hitches because of unclear land titles and commercial land usage clauses.

Although VSAT has been another viable alternative for north east region is the however, the approvals for VSAT connectivity takes time and the charges for bandwidth

connectivity under VSAT option is high to afford for villagers particularly.

1.5 CONCLUSION

Liberalization of Indian economy during 1990s, had brought the realization that access to telecommunication is of utmost important for the achievement of country's socio-economic goals and effective communication for the citizen. National telecom policy facilitated India's vision of becoming an information technology state. National Telecom Policy has enabled Indian telecom companies to become truly global players by creating modern and effective telecommunication infrastructure for the convergence of IT, Media, Telecom and Consumer Electronic applications and by achieving efficiency in spectrum management. Through the expression of universal service obligation, providing access to basic telecom services at an affordable and reasonable prices to all uncovered areas including rural areas was introduced.

However, lackadaisical attitude of Central Government's towards North East region and addressing issues seriously has a negative implication on easy accessibility of telecommunication services in the region. During independence, the undivided Assam had 4 percent per capita GDP which is above India's national average. In 2010–11, these seven states scores 30 percent per capita GDP from Rs.59143, which stands above average of all-India GDP. National budget 2014–15 has allocated Rs.537 billion for infrastructure and telecommunications projects for the Northeast Region.

The score of Northeast Region shows above-average on social indicators such as on literacy and infant mortality. However, NER is still falling behind in infrastructure development, road density and per capita electricity consumption.

Increasing mobile phone penetration, especially in the non-urban areas, increasing competition, heavy investments in 3G, and increasing consumer attrition have made Network operators turn to Value Added Service to secure their businesses. With increasing disposable incomes, increasing familiarity with technology, greater awareness of VAS, the willingness of the consumers of mobile subscribers to spend on value added services has increased. The importance of accessing business-critical information in rural areas in order to support the livelihood of the farmers has been realized of late which has popularized the value added services in rural areas. Lack of infrastructure has hindered the rural households to access to a plethora of basic services on offer including government services.

There are many success stories across the world on the initiatives in the area of utility Mobile Value Added Service. The private sectors should examine the best practices across the world and to study the opportunities in the Utility MVAS space to identify various business models. On the part of government, the initiative regarding the aggressive roll-out of required network and device infrastructure on an extensive basis is necessary to foster innovation to truly attain scale for Utility MVAS. Hence, the fact of the matter calls for the joint venture of both government and industry to achieve a win-win situation in service delivery to consumers

REFERENCES

1. Rogers, E. M., & Chen, Y. A. (1990). Technology transfer and the techno polis. In M. Von Glinow and S. A. Mohrman (Eds.), Managing complexity in high Technology industries: Systems and people. New York: Oxford University Press.
2. S. Beardsley, I. Beyer Von Morgenstern, L. Enriquez & C. Kipping, (2002).Telecommunications Sector Reform –A Prerequisite for Networked Readiness in The Global Information Technology Report 2001–2002: Readiness for the Networked World, Oxford University Press
3. Ministry of Communications & It, Department of Telecommunications Assam. (2009). OFC Tender No. 30-170-2/2006-Usf Dated 30.10.09 Page 10/126 Bb Unit, USOF. Government Of India, Retrieved From: Http://Usof.Gov.In.
4. Telecom Regulatory Authority of India. (2013). Recommendations on "Terms and Conditions of Unified License (Access Services)". Reference by the Department of Telecommunications- 21.12.2012, New Delhi
5. Telecom Regulatory Authority of India. (2009 February). Recommendations on Growth of Value Added Services and Regulatory Issues. New Delhi
6. Telecom Regulatory Authority of India. (2013 September). Recommendations on Improving Telecom Services in the North-Eastern States: An Investment Plan. New Delhi.
7. Telecom Regulatory Authority of India. (2014 March). Information Note to the Press: Highlights on Telecom Subscription Data as on 31st January, 2014 New Delhi, (Press Release No. 13/2014)
8. Annual Report 2011-12, Reliance communications.
9. Bafna Sanjay. (2011 June). Airtel 3G Services Now In Assam. Retrieved from: http://telecomtalk.info/airtel-3g-services-now-in-assam/69866/, 2011 June 24
10. Bafna Sanjay. (2011). Reliance 3G Mobile Service Now In West Bengal, Assam and North East. Retrieved from: http://telecomtalk.info/reliance-3g-mobile-service-now-in-west-bengal-assam-and-north-east/63956/, April 20, 2011
11. Bikash Singh. (2013). Mukesh Ambani-led Reliance Jio Infocomm plans to roll out 4G networks services in Assam. ET Bureau , Jul 19,2013. Retrieved from: http://articles.economictimes.indiatimes.com/2013-0719/news/40681289_1_networks-assam-guwahati

TECHNICAL TERMS USED

BOO: Boot, Operate & Own
BTS: Base Trans-Receiver Station
DHQ: District head quarter
GBT: Ground Based Tower
LSA: License service area
NOFN: National Optical Fibre Network
OFC: Optical Fibre Cable
POP: Points of Presence
RTT: Roof Top Towers
ROW: Right of Way
SDH : Synchronous Digital Hierarchy
SDHQ: State District Head Quarter
TSPs: Telecom Service Providers
USOF: Universal Service obligation fund