



# Infrastructure Matters

Key emerging trends in telecom service provisioning

By Tushar Kapadia, Vice-President – Strategic Initiatives, GTL Infrastructure Limited

In the past 10 years, telecom infrastructure has been a key enabler of affordable mobile services in India and has driven the growth of wireless telecom networks, taking the then single digit teledensity to the present levels of over 80 per cent. The increase in teledensity has also contributed to the country's GDP growth.

India's telecom sector is poised for explosive growth in data usage and the infrastructure industry is on the threshold of a paradigm shift, indicated by the following trends:

- Total wireless subscribers: 1,033.63 million as on March 2016 and wireless teledensity: 81.38 per cent
- Broadband definition changed to 2 Mbps download
- Estimated number of towers: ~ 0.45 million with over 1.1 million base stations
- Data usage from the current 400 MB per subscriber/month to increase to at least four times in the next two to three years
- With data growth, the major revenue base of telecom operators to shift from voice to data in the near future
- The government's Digital India initiative would enable citizens to have broadband connectivity, access to services on demand and digital literacy.

## Emerging trends

Emerging trends in the telecom infrastructure space can be attributed to the competitive landscape of the telecom industry, particularly post the entry of Reliance Jio Infocomm Limited (RJIL) with 4G-ready voice and data services.

In response to the launch of RJIL services offering free voice and attractive data plans, the competing operators have quickly swung into action by slashing 3G and 4G data package plans and are focusing on data network expansion in specific circles and



cities. Tower companies are in turn able to market their towers for fresh tenancies as well as colocation of the existing tenants - 3G or 4G BTS. However, the feasibility of space, antenna loading and quick upgradation for additional power provisioning are necessary for making towers ready for installation of electronics.

Since each of the telecom operators has a unique mix of 800, 900, 1800, 2100 and 2300 MHz spectrum, their network plan in the same circle substantially differs based on the radio frequency propagation characteristics of each band.

Telecom operators are required to comply with EMF radiation levels as specified by the Department of Telecommunications (DoT), which are ten times stringent than the International Commission for Non Ionizing Radiation Protection. The secretary, DoT, recently launched public awareness programmes jointly with experts from the TERM cell, state and civic authorities, and industry and medical fields. This is a refreshing and commendable trend that has helped clear myths about radiation hazards relating to telecom towers and in turn reduced disruptions to telecom services.

Technology and its innovative trends in active as well as passive infrastructure have immense effect on the infrastructure industry. The major contributors are: Multi-technology BTS capable of 2G, 3G and 4G through software-defined radio with improved energy efficiency; dual-

band or multi-band RF antenna with remote electrical tilt; remote radio head and base band unit-based split BTS, eliminating the requirement of shelter and air-conditioning; Wi-Fi, in-building solution and small cell for traffic offload in urban pockets; monopole towers with small footprint and faster erection; quick recharging and lithium-ion batteries; software solutions for productivity improvement through mobile apps, big data analytics, field workforce management automation, etc.

Tower installation permission/approval/NOC is a subject under the jurisdiction of the state or local municipal body. As per DoT guidelines of August 2013, it provides for a nominal one-time administrative fee as may be decided by the state government. However, there is too much inconsistency in the infrastructure policies of various local bodies as well as in the fees levied. DoT is in the process of enacting rules in this regard. Until then, this issue may continue to bother tower companies.

In recent times, the e-commerce industry has experienced a significant rise in demand from young as well as rural consumers. Tower companies find this an opportunity bundled with challenges such as availability of power and associated costs. Notwithstanding these difficulties, rural penetration will pay good dividends for the country and surely bridge the digital divide.

## Conclusion

India has come a long way from the time when subscribers had to wait for months to get a land line connection, to a scenario where they now have affordable smartphones with high-speed data access. With satisfied end-users, tower companies feel contented that they have made their due contributions. ▲