

India's quest to conquer the 5G summit

Open RAN, network densification, access to affordable spectrum, and supportive regulatory policies hold key to make India 5G-ready

Author: Arun Menon, Lead Analyst (arun@mtn-c.com)

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Summary

The Indian telecom sector is amid a dramatic transformation, thanks to the advent of the fifth generation (5G) telecommunications technology. 5G has the capability to connect almost everything through seamless interaction between internet-enabled devices. A wide range of industries and sectors are set to get redefined with 5G, opening immense opportunities for investment and growth. If the 4G era saw telcos offering fast connectivity and content, 5G will offer much beyond that by bringing the immersive-ness factor, through the metaverse for instance, which will make digital experiences more tangible. The Indian government's push towards a digital economy also augurs well for 5G's prospects in the country.

Below are key highlights from the report:

- After a pandemic-induced delay, Indian telcos are prepping for a year-end commercial roll-out of 5G. The initial confirmed list released by DoT includes 13 cities for commercial 5G launch this year. All three leading telcos are conducting 5G trials currently.
- As seen in markets such as Brazil and South Africa, the Indian telcos are likely to adopt 5G NSA and Dynamic Spectrum Sharing (DSS) models for rapid deployment of the network. These deployment models allow telcos to use much of their existing 4G infrastructure to offer 5G.
- The delay in 5G roll-out brings two-pronged benefits for the telcos: a substantial base of 5G-enabled smartphones, which offers a ready market for telcos ahead of the 5G launch; and, more mature technology and vendor ecosystem, which could drive down network equipment costs.
- Despite these benefits, the journey to 5G will not be without significant hurdles. These include regulatory concerns (such as spectrum pricing, and uncertainty around Chinese vendors) to infrastructure-related issues (low tower fiberization), along with the prevailing industry health (high debt levels and Vodafone Idea crisis).
- Reliance Jio will be the operator to watch out for as the telco is building an end-to-end indigenous 5G solution that comprises software and possibly a bit of hardware. The greenfield operator expects to export the solution to foreign markets once the solution's capability is tested on a pan-India scale.

India gears up for 5G roll-out

After a second wave of COVID-19 delayed the much-anticipated 5G spectrum auction in 2021, the Indian telecom industry is hoping to catch the 5G bus in the year 2022. The leading telcos are warming up to a likely yet limited year-end roll-out of 5G. Late last year, the Department of Telecommunications (DoT) confirmed a list of [13 Indian cities](#) that are set to receive 5G connectivity in 2022. These include Delhi, Mumbai, Kolkata, Chennai, Gurugram, Chandigarh, Bangalore, Ahmadabad, Jamnagar, Hyderabad, Pune, Lucknow, and Gandhinagar. The Telecom Regulatory Authority of India (TRAI) is likely to submit the 5G spectrum pricing recommendations to the DoT in March 2022. And if things go as planned, the 5G spectrum auction will happen mid-year with subsequent commercial launch of 5G services in the 13 cities by the end of the year.

To start with, the DoT has allocated spectrum for 5G trials in three different frequency bands: mid-band (3.2 GHz to 3.67 GHz), millimeter wave band (24.25 GHz to 28.5 GHz) and low band (700 GHz). The