

*Financial Express - 22nd February 2024*

## **Private 5G: India lags China**

*Owing to slow private 5G spectrum allocation, India risks falling behind in the global Industry 4.0 race. We must do the needful to catch up.*

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THE RECENT NEWS about a department of telecommunications committee set up to consider the direct assignment of 5G spectrum to enterprises like Infosys, Tejas, Tata, L&T, GMR, Capgemini etc is encouraging for the industry. However, it comes more than 19 months after the Union Cabinet's approval based on TRAI's recommendations. It is indeed surprising that such a policy initiative that would enable industry-wide digitisation using 5G and propel India to the status of a global manufacturing hub through improved efficiency and reduced costs should proceed so slowly even after clearance from the Union Cabinet. Moreover, this comes at a time when there is concern that public 5G (personal consumer markets) is not taking off in a big way and, concurrently, there is a large opportunity to leverage the geopolitical advantage in manufacturing. Why, then, have we missed out despite approval from the highest level? Industries like healthcare, manufacturing, automotive, transportation, mining, and even agriculture stand to gain immensely from digitisation through 5G. According to Ericsson, there can be a 2-3% revenue increase when manufacturers digitise their processes due to increased throughput and quality, while 5-10% cost savings flow from improved capital efficiency and manufacturing costs decrease by 4-8%. With its strategic location and large labour force properly aligned with the improved 5G-digitised production set-up,, our nation's ambition to become a global manufacturing hub would be closer to realisation. However, while many major nations are far ahead, India remains an outlier in private 5G/LTE

adoption. China presents an incredible growth story for its private networks. 5G-connected factories have been established everywhere. By the end of 2023, the industry in China is reported to have developed a total of 31,600 5G virtual private networks, 2.2 times the number at the end of the previous year. 5G industry applications have evolved from point-based demonstrations to large-scale replication in some fields. The number of 5G application cases has exceeded 94,000, and it has been integrated into 71 of the 97 major categories of China's national economy, covering nearly 70% of major industries such as mining, electric power, and ports. It is a totally unparalleled story even if one cynically discounts the progress by 90%, it is far ahead of India.

Outside of China, Berg Insight forecasts 13,500 private wireless networks by 2026, equivalent to a 10-fold increase in the number of deployments from 2021. According to another expert agency, Analysys Mason, the number of private LTE/5G networks worldwide is expected to grow from over 4,000 in 2022 to over 60,000 in 2028. Today, the EU alone, which has only a third of India's population, has 95 private 5G networks. Of these, 34 (36% of the such networks) had no mobile operator involvement. Thus, even assuming that these include all cellular and WiFi networks apart from 5G. Meanwhile, we only have two such networks. Whichever way we look to China or other countries, we see that there is tremendous scope for India to catch up with its peers. Not having direct spectrum allotted to enterprises and other industry users is undoubtedly a powerful reason for our lag.

Per the enterprises, it is not viable to set up 5G through telecom operators (telcos). Enterprises require very exacting Service Level Agreements (SLAs) to meet their performance requirements and they feel they cannot meet them if public networks are used or if they get telcos to set up their networks. The enterprises undoubtedly know their requirements best and are confident to plan and set them up more suitably through the vendors like Cisco, Ericsson, Nokia, Samsung, and TCS directly since the telcos themselves get their networks set up and maintained through such vendors. Moreover, it is reported that telcos add up to 40% margin when providing spectrum to the enterprises. To

counter this, currently, at least 16 major countries of the world allot 5G spectrum directly to enterprises.

There is an existing precedent of charging for spectrum on area of usage as a proportion of the total licence area, already-applied for NCRTC / RRTS/ metro networks, as well as for telco networks where spectrum is not available for the entire licensed service area. The same should be applied for spectrum to be allocated to private enterprises.

This issue of private 5G in India is plagued with many questions. Did we undertake a demand study for public 5G, 4G, 3G or 2G? Is it a global norm to carry out private 5G demand studies? Why do we need a demand study here since each enterprise's case would be unique and each enterprise requirement would be limited to a small local area? Different industries would also have completely different requirements. With enterprises becoming more globally competitive through private 5G, voice and data traffic to the public 5G networks also rise sharply and benefit the telcos? Isn't the telco licence non-exclusive? Hence, will it be perfectly proper to introduce competition through private 5G, which has different terms and conditions? With each a unique case and involving non-conflicting spectrum use, why need a study for allotment? Wouldn't these costly delays themselves kill the good initiative? These and several other important questions remain unanswered.

India must awaken and not stop till it matches its global peers in Industry 4.0 through Private 5G/LTE.

*With research inputs by Neha Hathiari.*