

# 5G CAPTIVE NETWORKS CAN BE DETRIMENTAL TO NATIONAL SECURITY, COAI CHIEF SAYS

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Lt. Gen. Dr. S.P. Kochhar, Director General, COAI | Photo Credit: Special Arrangement

Telecom service providers (TSPs) have started providing 5G services in the country from October 2022. 5G services have already been activated in 50 cities and towns across 13 states and one Union territory. Lt. Gen. Dr. S.P. Kochhar, Director General, [COAI](#), interacted with *The Hindu* and shared his perspectives on private captive networks, challenges in 5G rollout, fiberisation, and 6G technology.

Edited excerpts:

**S.P. Kochhar:** The separate private 5G captive networks are a challenge to the telecom service providers (TSPs) and can be detrimental to national security. The spectrum allocated on an administrative basis will be exploited by aggregators who would resort to hoarding of spectrum and then offering services to enterprises through pan India networks, assuming a pseudo-TSP role. This would lead to no business case for the rollout of 5G networks in the country by the TSPs and will diminish their revenues.

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**SPK:** Currently, individual permissions are required to be taken from electricity, gas, sewerage, Railways, NHAI, forest authority, residential welfare bodies, among others, which causes unnecessary delays and economical inefficiencies. Installation of towers or small cells near educational institutes, hospitals, airports, defence establishments, religious places are restricted or require a special set of permits. There is no active support from the police department in enforcing the regulations to expedite installation process or to prevent disruption to the project. Pending approvals lead to coercive action like demolition and sealing, which further delay the installation process. There is a need to set aside special places for the deployment of 5G infra as densely populated areas like markets and metro stations leave no room for infrastructure deployment.

**SPK:** Investment is a major challenge in successful, pan-India deployment of 5G services. Investments in key components of the 5G network like spectrum, fibre, and towers on pan-India coverage are estimated to be about 1.3-2.3 lakh crore with around 90,000 crores required in the

deployment of telecom sites. This will add to the immense financial stress already faced by the telecom sector. The latest 5G spectrum auction witnessed outflows from telcos to the tune of over 1.5 lakh crores. They may have to spend around \$22 billion further in the next five years to strengthen and expand the 5G networks. Investments in network security for 5G will further necessitate an increase in investments up to 2.5 times from the present volumes, as per Futurex. State Electricity Regulatory commissions also need to provide EB connections to the telecom sites, both macro and micro sites, at utility rates. Availability of power at reduced utility rate is a crucial need for the sector.

**SPK:** [Fiberisation and towerisation are two critical factors](#) for creating a robust infrastructure for the success of 5G in India. The Government has introduced amended Right of Way (RoW) Guidelines to help facilitate faster deployment of telecom infrastructure across the states and establish an efficient 5G network. However, rollout of underground and overhead fibre continues to be hampered by difficulties in implementing state policies at local entities, municipal corporations, and wards. State and local bodies impose exorbitant charges for deploying telecom infrastructure on street furniture.

The latest amendment in RoW rules prescribes the fee for deploying small cells and aerial fibre on street furniture like Electricity Board (EB) and street light poles. There is an application fee of 1,000 per km for deployment of underground and aerial fibre; 100 per pole for the use of street furniture like EB poles or street light to deploy aerial fibres; and 300 per pole in urban areas and 150 per pole in rural areas for deployment of small cells. Some of the states have already constituted committees with industry participation to look into these aspects. Maharashtra, for example, recently released its revised RoW policy in line with recent amendments in RoW Rules of DoT.

**SPK:** Operators are presently providing 5G services to their subscribers with 5G-enabled devices at no extra cost. Availability of handsets at affordable rates will be a critical factor in determining the successful uptake and usage of 5G in India.

Traditionally, operators' revenues have been primarily consumer-driven. With 5G, by contrast, consumer awareness is lower and most of the biggest players have yet to introduce upgraded handsets — all of which may result in a slower uptake. There may be some consumer sections like high-tech gaming, AR/VR applications among others, where users will be willing to pay more for a better experience.

The main incentive for operators to move to 5G is generally to create more capacity, optimise efficiency in services and improve overall consumer experience. But to achieve returns sufficient to justify their 5G investments, operators will need to look beyond selling broadband connectivity and target new types of use cases that are specifically enabled by 5G's unprecedented capabilities.

**SPK:** The ITU and 3GPP expect 6G to be available only after 2030. India has already initiated work on 6G. The Department of Telecommunications has created six Task Forces with participation from industry, including COAI, academia, and experts to examine the various aspects of 6G to provide a comprehensive view for India, in alignment with the global vision and developments.

The Telecommunications Standards Development Society, India (TSDSI) also submitted its 6G Vision to ITU-R that decides global standards for wireless communications, as a contribution towards the IMT 2030 work. Development of standards would be a critical element, and early work on the same can help India gain advantages in the areas of R&D and IPR creation.

**SPK:** In terms of technological prowess, 6G networks are expected to be able to use higher frequencies than 5G networks and provide substantially higher capacity with much lower latency. One of the goals of the 6G internet is to support one microsecond latency communications. The 6G technology market is expected to facilitate large improvements in the areas of imaging, presence technology, and location awareness.

Experts also believe that 6G's higher frequencies will enable much faster sampling rates than 5G. They will further provide substantially better throughput and higher data rates. The use of sub-mm waves and frequency selectivity in 6G is expected to advance the development of wireless sensing technology. A wide range of technologies such as AI, advanced sensors, optics, cloud computing, high-speed digital, satellite and robotics will undergo rapid advancement in the next decade, powered by 6G.

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