

What are standalone & non-standalone 5G networks

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In news– Reliance Jio has recently announced the launch of standalone 5G services in Delhi, Mumbai, Kolkata, and Chennai by October 2022, with an aim to expand and cover the entire country by December 2023.

Key differentiators between standalone and non-standalone 5G networks-

- **5G networks are deployed mainly on two modes: standalone and non-standalone.**
- In the standalone mode, which Jio has chosen, the 5G network operates with dedicated equipment, and runs parallel to the existing 4G network, while **in the non-standalone mode, the 5G network is supported by the 4G core infrastructure**
- Given that the **non-standalone networks are built on existing infrastructure**, the initial cost and the time taken to roll out services through this track is significantly less than standalone networks.
- **The standalone mode provides access to full 5G capabilities and new network functionalities** such as slicing that provides greater flexibility to operators to efficiently use their spectrum holdings.
- **Non-standalone networks are generally considered to be a stepping stone**, and global precedent suggests operators that have launched non-standalone 5G networks eventually transition to standalone networks.
- The non-standalone mode, however, lets operators maximise the **utilisation of their existing network infrastructure** with relatively lower investment.
- The biggest difference in the two architectures is the compatibility with existing device ecosystems.

- **Most smartphones today have capability to connect to non-standalone 5G networks** which are essentially 5G airwaves transmitted through 4G networks and will **require software updates by their OEMs** to be able to connect to standalone networks.

5G smartphone ecosystem in India-

- According to data sourced from analytics firm Counterpoint Research, 5G-enabled smartphones accounted for a paltry 3 per cent of overall smartphone shipments in India, which is expected to grow to 35 per cent by the end of 2022.
- Currently, smartphones in the mid-tier segment – costing between Rs 20,000 and Rs 30,000 – have the highest share of 5G smartphones at 39 per cent, followed by the budget segment where 34 per cent of all smartphones are 5G-enabled.
- Until June 2022, Samsung had the highest share of 5G smartphones sold in the country with a market share of 24 per cent, followed by Vivo (13 per cent) and OnePlus (13 per cent).

Advantages of 5G for consumers-

- 5G could have benefits for consumers owing to the **superior Internet speed and low latency it promises over 4G.**
- At its peak, **Internet speeds on 5G could touch 10 Gbps**, compared to the 100 Mbps peak of 4G.
- Similarly, latency under 4G is between 10-100 ms (millisecond) whereas on 5G it is expected to be under 1 ms.
- **Latency is the time it takes for a device to send packets of data and get a response. Shorter the latency, quicker the response.**
- For most industrial use cases such as manufacturing, Internet of Things, artificial intelligence, the speeds

and latency levels offered by 5G telephony are the key selling propositions.

- **These low latencies and high Internet speeds can only be made available through the standalone architecture.**

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<https://journalsofindia.com/5g-technology-rollout-in-india-in-2022/>