

The dawn of the 5G era: a game changer for the telecom industry

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While many businesses have been hurt by the fallout from COVID-19 pandemic, the telecom industry has helped keep the world's economic engine ticking. Telecom has long been synonymous with mobility and connectivity in India, the second most populous country in the world with 1.3 billion people.

In the 'new normal' that the COVID-19 pandemic is shaping, businesses across the world are in the middle of a major digital transformation, and connectivity has become critical in terms of providing collaboration opportunities while boosting organisational resilience. The future value of telecom, beyond being an enabler of connectivity, lies in providing value services and customised experiences.

The telecom industry today is entering an exciting era of innovation. Technologies like 5G, Internet of Things (IoT), Artificial Intelligence (AI), Augmented Reality/Virtual Reality (AR/ VR) and Extended Reality (XR) promise to transform connectivity as we know it, creating better, more secure and personalised experiences for all.

The 5G opportunity

With a confluence of technologies (IoT, big data, edge computing, AI, etc.) maturing together, 5G is set to be a game changer for the telecom industry and is expected to yield enormous economic opportunities over the next three to five years. As per a KPMG International survey report 2020, the augmentation of enterprise 5G will impact almost all major sectors, with the potential to unlock USD4.8 trillion globally through identified use-cases¹. KPMG in India in association with IMC and Cellular Operators Association of India (COAI) 2019, estimated that India Inc. has the potential to unlock USD48.69 billion (INR3408 billion) through the deployment of 5G over the next four years and the contribution of 5G to annual GDP is likely to be in the range of 0.35 to 0.50 per cent.²

While 5G received a great deal of media attention in its early days, manufacturers and innovators have only recently started to adopt the technology, paving the way for mass adoption. 5G is set to disrupt Industry 4.0, powering machine-to-machine communication and demand-driven supply chains. The adoption of 5G will be a compelling proposition with benefits like lower latency, higher capacity and increased bandwidth (10x faster than 4G). It will also provide greater flexibility, reduce costs and make viable applications that cannot be operated using current wireless technology, enabling a more efficient and smart-connected world.

While there have been major advancements in AI in recent years, significant bandwidth is required to operate on such workloads without affecting performance. Moreover, 5G will not only release new waves of data but also open up the bandwidth to support AI. This offers the potential to augment decision making, both human and machine, by delivering very near real-time decision support.

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Strategies for 5G deployment

In terms of 5G deployment, there are two strategies that telecoms can adopt depending on their level of investments and the respective use cases of their networks:

- a) **5G standalone (SA)** – Deployment of new radio and 3GPP-standardised 5G Core which is independent of the 4G network
- b) **5G non-standalone (NSA)** - An add-on to the existing 4G network with 5G radio base stations and 4G evolved packet core (EPC).

Globally, telecom sectors in the U.S., China, Europe, Japan and South Korea are using the 5G non-standalone (NSA) strategy to capture market share, as industry players seek to capitalise on the first mover advantage that was seen in 4G (5G adoption rate is three times faster than 4G). Also, 5G NSA deployments provide a shorter turnaround time for a market launch as it relies on the existing 4G infrastructure and SDN/NFV orchestration.

However, many operators have raised objections claiming that 5G NSA would hamper the implementation of the standalone mode of the network. On the other side, 5G SA deployment uses Evolved Packet Core architecture for both signalling and information transfer and will support powerful features like network slicing and edge computing.

India's tryst with 5G

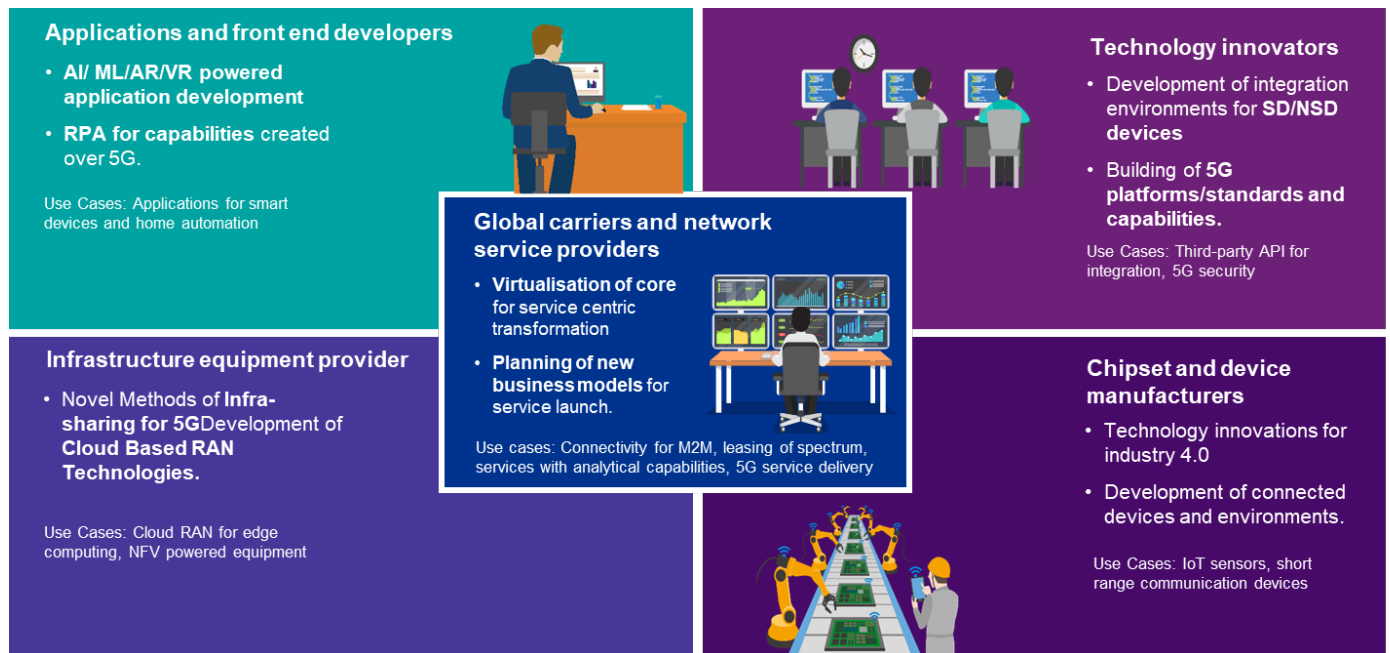
In India, the DoT (Department of Telecommunications) is expected to hold spectrum auctions for 5G networks in 2021³. Additionally, the DoT has allocated INR224 crore to set up an 'Indigenous 5G Test Bed' in India by 2021⁴. The test bed creates an ecosystem that closely resembles a real-world 5G deployment and is a much-needed step towards building multi-institutional collaboration across sectors.

The challenges in deploying end-to-end 5G networks include high fees of spectrum, infrastructure investments, existing fibre backhaul capacity and security of open-stack platforms.

KPMG in India has also been driving several 5G initiatives with government and industry bodies such as the COAI, NASSCOM, DoT, IMC, MeitY including 5G Hackathon. The 5G Hackathon aims to identify and scale use case ideas which are relevant to India and that could be developed into workable products and services.

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The deployment of 5G will disrupt our day-to-day lives and transform sectors with an array of applications and use-cases. Sectors such as manufacturing, energy and utilities, smart cities, public safety, and transport, will be the focus sectors during the early stages of 5G adoption in India.

In the context of 5G, the key imperatives for the success of emerging technologies include spectrum pricing, network sharing, adoption of business models including VNO (Virtual Network Operators), NaaS (Network as a Service), SPV (Special Purpose Vehicles) and the role of enterprises as service innovators.

While enterprises will lead the implementation of 5G technology, governments would need to set industry-specific regulations to ensure that the devices and networks are well-secured to mitigate digital and cyber risks across the ecosystem.

5G will require a high level of collaborations and partnerships, and this interconnected ecosystem is set to provide significant opportunities for telecoms across the value chain and spur the adoption of lighter and effective business operating models.

¹ The 5G edge computing value opportunity, KPMG, June 2020

² Press Release, KPMG-IMC White Paper 2019, accessed on 28 September 2020

³ 5G spectrum auction likely to be delayed in India amid COVID-19 pandemic: ET, 6 April 2020

⁴ Department of Telecom, annual report 2018-19, accessed on 30 September 2020

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