

“The high-powered network is likely to be the answer to the digital aspirations of India and usher in a revolution in working patterns and lifestyles,” says Abhishek.



PERSPECTIVE

5G and an exciting new dawn

L&T Technology Services' Chief Operating Officer and Member of Board **Abhishek** recommends a collaboration between the public and private sector to establish the ecosystem for digitization.

The evolution of telecommunication networks has been an inspirational journey, with consumers being able to watch movies on the fly and real-time video conversations with multiple people from any corner of the world. The spur in demand for robust telecommunications infrastructure, led by consumer requirements and network connectivity has led to unbelievable technological breakthrough over the years.

The fifth generation of the cellular network offers very low latency, super-high download speed, and exceptional reliability that will not only further improve connectivity but also cause massive technological disruption. 4G networks introduced immersive technologies to the world, but 5G will take immersive experiences like smart homes, autonomous vehicles, AR/VR, cloud computing, and IoT to a whole new level.

Harnessing the power of 5G

There are wide ranging expectations from 5G, from high-bandwidth communication for enhanced mobile broadband (eMBB) applications to low-bandwidth machine-to-machine (M2M) communications; and from expansion in Internet of Things (IoT) applications to ultra-reliable and ultra-low latency requirements for autonomous driving applications. Sub-6 GHz spectrum offers better propagation and backward compatibility for narrowband applications, while the continuous bandwidth at mmWave frequencies enables the key enhanced mobile broadband (eMBB) applications.

Operations that require real-time interventions will primarily benefit from 5G, especially in modernized manufacturing plants, where human workers can work alongside robots in a collaborative environment. As the next step in industrial automation, 5G adoption will increase worker productivity, introduce high-precision assembly lines, streamline manufacturing with zero defects, touchless control of machinery, and mass adoption of Internet of Things (IoT). According to an Ericsson report on US 5G smart factory, owners of a factory in Texas estimate that output per employee is 2.2 times higher, thanks to 5G-related improvements.

An exciting 5G application is in the area of smart city technology. The smart city ecosystem is designed and developed to run on ICT framework, which connects several dedicated networks of sensors, home appliances, smartphone devices, connected vehicles, and data centers. But there are certain challenges for smart cities that are yet to be addressed. By harnessing the power of technology

for sustainable living, we have been able to identify and solve these challenges with customer collaborations.

The speed and low latency of 5G can help unlock incredible innovative capabilities. Other important areas, which will benefit, are autonomous vehicle, improved healthcare network, improved sports viewing and broadcasting experience, use of drones, agriculture, education, and oil and gas to name a few.

ER&D and 5G – A natural kinship

Engineering and technology companies have the potential to deliver differentiated 5G services in the fast-growing market and making huge investments in Open RAN technologies, both in traditional telecom as well as Infra-OEMs and some of the ISVs.

Industry experts believe that owing to its enhanced network performance characteristics, 5G will emerge as one of the top engineering priorities in the post-COVID-19 scenario across the globe. Taking the lead, many Indian engineering research and development (ER&D) services companies including L&T Technology Services (LTTS) are making investments to build advanced 5G capabilities over the next 5 years.

At LTTS, 5G service promises to be a significant stream of revenue in the next 3–4 years. We believe that recent partnerships to deliver 5G automation services and new business lines linked to 5G, such as labs-as-a-service, coupled with co-investment in new labs and technologies, are key to building the platforms that will run on next-gen telecom gear, and help us drive growth. Another area that is expected to see some considerable traction is acquisitions. Acquiring companies with niche capabilities in areas like telecom network management and enterprise mobility will give established technology players an edge in developing next-generation digital systems for 5G and IoT networks.

A new dawn

For now, 5G is an untapped potential, and the scope of benefit following its adoption is boundless. The high-powered network is likely to be the answer to the digital aspirations of India; however, with infrastructural and business challenges faced by the telecom industry, a collaboration between the public and private sector could establish the right ecosystem for digitization to grow in the country. 5G adoption will bring an unseen change in all spheres in India, and usher in a revolution in working patterns and lifestyles. ●