

In an interview with tele.net, Kumar N. Sivarajan, Chief Technology Officer, Tejas Networks, talks about how the technology landscape and customer needs are evolving in India, level of 5G preparedness in the industry, challenges that the company is currently facing and the way forward...

### **How has the telecom technology landscape evolved in India?**

Traditionally, there used to be a significant lag between the time a new technology was introduced in the global market and its arrival in India. However, this is no longer the case, especially in the telecom sector, as is evident from the fact that 5G services are likely to be launched in India at around the same time as in developed markets. Over the past few years, we have seen a rapid ramp-up in mobile internet adoption in the country, which has been primarily driven by the growing 4G coverage in both urban and suburban areas. As per recent reports, India is the world's largest carrier of mobile internet traffic today. The government's ambitious BharatNet project has extended high speed internet connectivity over optical fibre to rural parts of the country and is expected to cover all gram panchayats by March 2020. In the urban areas, leading telcos are gearing up to launch gigabit speed fibre-to-the-home (FTTH) services this year, which is estimated to increase the number of fixed broadband subscriptions in the country to about 100 million households in the next two to three years.

### **How have customer needs changed over the years?**

Over the past three years, India has emerged as one of the leading telecom markets in the world. In 2018, the country consumed almost 10 GB of data per smartphone per month, which is almost 40 per cent more than that in North America and 50 times more than it did in 2014. An average Indian spends more than two hours daily watching digital videos on his/her smartphone and there is massive demand for short format videos (for example, YouTube, TikTok) and over-the-top video streaming services (for example, Netflix, Hotstar, Amazon Prime) that drive network traffic. With the advent of high speed residential FTTH services this year and advanced 5G networks in the near future, this trend is expected to continue or even accelerate further. It is estimated that the total mobile data traffic carried over telecom networks in India will grow by at least four times in the next five years.

### **How is the 5G ecosystem developing globally? What is your view on the Indian market's preparedness for it?**

5G is yet to take off at the global level, barring a few pilot roll-outs taking place in advanced markets. Global telecom carriers are currently focusing on enhancing their 4G/LTE networks and expanding their optical fibre infrastructure. Widespread deployments of 5G in India are still two to three years away. The initial focus will be on specific use cases that are relevant for the country, such as rural broadband, mobile backhaul, fixed wireless access and select IoT applications such as precision agriculture. Indian industry, academia and policymakers are championing these country-specific requirements in global standards bodies (International Telecommunication Union and 3GPP) through our national telecom standards organisation (Telecommunications Standards Development Society, India).

**As the CTO of a leading network equipment company, what are the key challenges you face today?**

As CTO of Tejas, my biggest challenge is to efficiently balance and manage conflicting priorities in terms of breadth and depth in our product portfolio. Over the years, we have developed an end-to-end portfolio that spans carrier-grade optical transmission (based on DWDM/PTN/OTN technologies), fibre broadband (based on GPON/NG-PON), fixed wireless (based on LTE 4G/5G) as well as multi-gigabit Ethernet/IP switching and routing products. However, in order to effectively compete in the high-technology market, we also need to have a rich feature set in each of these product segments, but with a much smaller revenue base than our competitors. We operate in an R&D-intensive industry that calls for significant financial investments upfront with no guarantee of returns.

**What is your outlook for the Indian telecom market? What technology trends will shape the market, going forward?**

India's telecom market is going through an exciting phase. The market is thriving with leading telcos in the country continuing to invest in fixed line (FTTx) and mobile broadband (4G) networks in order to meet the exponential growth in consumer and enterprise data services. With the arrival of 5G, new use cases such as IoT and low latency mission-critical communications will emerge and significantly enlarge the target market for cellular services. Since large sections of our rural population are still served by lower speed 2G/3G connections, there is huge potential for growth in the Indian market.

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