

The Indian telecom space is continuously evolving owing to the explosion of data and video services, increasing roll-outs of 4G services, and growing focus on quality of service and spectrum management. Consequently, the sector's testing and measurement (T&M) requirements are also undergoing significant alterations. In addition to presenting new growth opportunities, these changing requirements add complexities to the existing operations of T&M players and pose several other challenges. Ensuring revenue growth has emerged as a key challenge for vendors, given the cost sensitivity at all levels of the industry.

A look at some of the issues that players face in the Indian telecom T&M market...

Cost pressures

Even as T&M solution providers need to make greater investments to stay abreast of changing customer requirements, they face severe pricing-related pressures from operators and product development companies. Burdened with capex commitments towards networks and lower ARPUs, operators have been shying away from making investments in T&M. With their financial health deteriorating, operators are now exploring rented and leased non-calibrated or technologically less advanced equipment since they are finding it difficult to purchase new, high-priced T&M equipment.

Currently, there is limited scope for Indian T&M players to contain costs as most of the components are imported, attracting heavy duties, which get added to the overall product price. Limited revenues further prevent them from investing in major research and development (R&D). As per reports, most T&M companies in India spend only about 10 per cent of their budget on R&D.

Expectations of reduced time-to-market

New and complicated technologies require more advanced testing. This has led to a growing demand for reduced time-to-market of T&M solutions. The limited ability to perform tests in a

much shorter time is emerging as a bigger challenge than conducting tests at a lower cost. To address this issue, T&M technical enhancements are under way to support the parallel testing of equipment, where users can reduce the manufacturing test cost as well as the test time by testing up to eight devices in one go.

Limited skill sets

Currently, India has a limited indigenous manufacturing base for T&M equipment. The majority of telecom T&M vendors operating in the country are subsidiaries of large global majors. As a result, creating a specialised skill-based labour force that operates at the ground level is challenging. The issue will become more serious in the future as technological complexity grows, thus creating a need for innovation.

To this end, system integrators need to explore creative business models that suit the local environment. For the domestic T&M industry to grow, designs must be manufactured, co-assembled and tested locally. The government's Make in India initiative can facilitate local manufacturing of T&M products through a conducive ecosystem and favourable policy impetus. The Skill India initiative can also help in training people to match the changing requirements of the industry.

Complexities in LTE testing

The Indian technology landscape has undergone a significant shift with the deployment of 4G long term evolution (LTE) technology. 4G networks require more comprehensive testing of radio frequency, protocol and system-level elements including base stations, cell sites, handsets and network infrastructure.

The complexity of LTE technology also poses several engineering- and design-related testing challenges. Further, the lack of spectrum harmonisation for 4G services makes LTE testing extremely complex. Globally, operators are using different spectrum bands to deploy 4G services. In India too these are being rolled out using spectrum in the 2300 MHz and 1800 MHz bands. Discussions are already on to offer these services on spectrum in the 700 MHz band, which will be put up for sale in the upcoming auctions. All these bands conform to and operate on different standards and configurations. This requires equipment vendors to manufacture a

wide range of testing instruments, each specific to different standards.

Challenges in handset testing

One of the major issues with respect to MIMO technology on handset testing is how well the conditions captured in the field can be converted to the test bench. T&M manufacturers need to build equipment that is capable of handling these procedures with precision. Recreating the environment in a test lab that is replete with multipath reflections and the Doppler shift is exceedingly difficult, but is critically important for network operators, infrastructure vendors and chipset makers.

Conclusion

Going forward, with constant advances in the telecom technology ecosystem, T&M will emerge as a key focus area. Investment in testing solutions will become crucial to ensure better quality, and productivity of operations. To this end, addressing the issues facing the telecom T&M market will go a long way in meeting the needs of the evolving telecom industry.

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