



Industry Speak

Role of T&M in Telecom Industry

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Broadband is booming and bringing us the triple play of voice video and data. The widespread rollout of 4G LTE, FTTX and emergence of IP and Ethernet as a access technologies of choice are revolutionizing the delivery of voice and data services to subscribers. It is also enabling the delivery of video services including IP TV video on demand, video telephony, and online gaming. In an effort to increase ARPU to compensate for decreasing voice revenue from 2G, all telecom service providers in India are betting on triple play to stay ahead of their competition.

Network operators are redefining and realigning themselves to the one stop shop for all things digital for residential and enterprise subscribers. This is also in line with Digital India, *Jan Dhan Yohana, Aadhar* and Mobile (JAM), Digital locker, and e-governance. Services such as caller ID screen popping up on the subscribers TV set, automatic pausing of live television when a telephone call is answered, Internet video services are a-la-carte feature of main triple play applications that could easily add incremental revenue from every subscribers.

Because of the proliferation of these integrated services, investments are under way in new access technologies. They require investment in test and measuring equipment also.

The inherent difficulty of deploying combined voice, data, and video services to subscribers, the relative novelty of network platforms and the fact that standards for these platforms and technologies are still being hammered out ensuring interoperability among platforms a primary technical challenge for triple play services. One the voice side ensuring interoperability among soft switches, media gateways application servers, and signaling gateways application servers and signalling gateways.

All operators have to invest in T&M as a means to diagnose and troubleshoot the issue without sending a technician to the field.

Finally, securing all these services to the satisfaction of video content owners and the subscribers themselves presents an additional layer of complex-

ity to the deployment of triple play networks. T&M is a necessary investment in this aspect also. With all these considerations and potential roadblocks before them network operators are working with companies experienced in full lifecycle testing to ensure their triple play services work to consumers' expectations right from start.

From lab and interoperability testing to ongoing quality of experience testing and measurement to diagnose and troubleshoot technical issues before subscribers are aware of them the network operators need to have full range of diagnostics tools at their disposal to ensure service uptime, lower operational cost, and eliminate any reason for subscribers to take their business anywhere.

The tools must include a detail snapshot of the subscribers in home warning, IP set-top box, mobile device (4G/3G/WiFi) to get any accurate picture of any packet loss jitter or latency issues affecting QoE.

These new testing requirement may seem overwhelming and costly with endless details that field technicians and their equipment must address.

Combining a range of instruments systems and software into an integrated test suite is the recommended proactive approach for turning up and maintaining carrier grade networks. Not only it does facilitate problem detection and expedite fault isolation for maintenance of service integrity but the integrated test suite also greatly reduces the operational cost. The T&M suite and OSS should work in cohesion and the system should examine the customer traffic, gather, capture and access data from multiple points in the network. Isolate faults between CPE and Service provider network as a part of service assurance process.

An IP test head that supports multiple services testing enables installation and commissioning to be carried out in parallel thus reducing testing time and increasing efficiency. The process is automated from a centralized location. The ability for multiple technicians to work simultaneously will produce significant cost savings when new high density locations are activated.