Managing 5G Service Operability, Quality, and Reliability Expectations

5G technology introduces numerous B2B2X models in which business customers will embed ultrafast, highly reliable 5G connectivity into their own products and services. Customer dependency on 5G connectivity will grow, and so will their expectation for a frictionless experience. Network slicing will be an important part of this strategy.

By 2023, 80% of telecom operators globally will still struggle to deliver 5G B2B2X-based services and manage the dynamic needs of network slicing due to the lagging capabilities of their operations and business management systems/processes.

5G Technology, New Business Models, and Operations Complexity

Installed networks are composed of several technology generations manufactured by multiple suppliers. Installed operations and monetization systems are purpose-defined to support the sale of network connectivity services but with limited flexibility to address changing business needs. Most of these systems were never designed to address customer/partner interaction and lack the “point and click”
self-care functionality customers have grown to expect. These limitations constrict how a communications service provider can work with its customers and partners and how its business processes can respond to changing operational needs. Many communications service providers remain invested in traditional ways of delivering network services and in managing end-to-end network operations.

A variety of software tools now support the network inventory, performance monitoring, fault management, and trouble ticketing functions that define the service assurance domain. With the addition of 5G, there is an acute need to leverage agile, cloud-based solutions that can automate the service assurance workflows across all operations and customer support processes. Failing to bring the right customer and operational data together to manage network operations and, ultimately, the customer experience, causes a communications service provider to miss critical opportunities to both innovate and reduce the cost to serve. Incumbent legacy systems incapable of addressing new business needs “lock down the company” to what the systems are designed to address, which oftentimes stifles innovation and lowers customer attractiveness. In such cases, a communications service provider cannot provide the higher value services and better customer experiences, with corresponding revenue increases, that many business customers are counting on for their success.

**Analytics and Automation Gain Momentum to Satisfy New Business Needs**

Technological advances such as 5G and multi-access edge computing (MEC) play a big role in the push for systems evolution. However, technology is only one aspect of change. Others include support for personalization at the network operations level, multi-partner interactions (B2B2X) that define unique business solutions, interactive customer experience measures, and dynamic real-time adjustments to service definition and/or network configuration parameters.

Traditional service assurance, for example, is focused on monitoring the physical network layer—network routers, switches, ports, and interfaces—for fault conditions and for the effectiveness with which traffic traverses a connected pathway. The premise for this fault management (FM) and performance management (PM) strategy is to detect, isolate, and resolve faulty equipment in addition to identifying network congestion hot spots. Virtualized hardware and software, along with virtualized services, add complexity levels above the physical layer and change the focus of service assurance from technology to the customer experience, which is essential as 5G changes how services are defined and charged.

Assurance solutions must be aware at the physical and virtual layer because physical layer problems also affect virtual services. These solutions need to correlate network events and predict issues affecting the customer experience and then mitigate them by identifying trends to failure before an incident occurs. Assurance solutions must also evolve to support connectivity issues across a B2B2X value chain, as virtualized 5G radio and core network functions dynamically multiply to meet network configuration definitions.