EVOLVING SERVICE ASSURANCE FOR MODERN TELECOMMUNICATIONS

To meet modern customer expectations and keep pace with rapid innovation, telecommunications operators need new ways to ensure service quality at the velocity and scale of modern 5G services. As technology infrastructures and operations evolve, traditional approaches to Service Assurance are quickly becoming outdated. A new generation of platforms will have to accommodate increasing interdependency across business lines and domains; more complex technology ecosystems; growing data volumes; and the drive toward autonomous operations and converged networking.

In this blog, I'll talk about why a new approach to Service Assurance is needed, and what it will have to look like.

The growing gap between Service Assurance requirements and capabilities

Modern service assurance is supported through four key functions:

- Trouble ticketing – The reception, assessment, correlation, and resolution of detected problems within the network, supporting both reactive and proactive processes to ensure reliable service delivery for customers.
- Change management – Mitigating and eliminating the risk of disruption to customer services

during planned modifications to the network.
- Resource and service inventory – Maintaining accurate visibility of network topologies and other contextual information to support decision-making within a Service Assurance context.
- Service level management – Informing and guiding proactive and automated activity through an improved understanding of expected service levels and current performance.

Performing these functions effectively depends on comprehensive visibility and understanding across the network environment; timely and accurate decision-making; and optimal process efficiency. These requirements have become increasingly challenging to meet as evolving needs push traditional service assurance approaches to the breaking point. To date, operators have often run multiple, separate Service Assurance platforms for different business lines and domains—fixed, mobile, carrier, and so on. However, modern environments are characterized by increasing interdependency across domains; for example, mobile issues might be caused by issues in a fixed line, such as a disruption of mobile backhaul. In this light, separate ticketing systems pose barriers to insight, limit opportunities for automation, and ultimately compromise service quality.

Increasing dependencies spanning enterprise IT and network domains will call for closer alignment of Service Assurance processes as well. 5G will increasingly blur the line between the two, as enterprise workloads run on Multi-Access Edge Compute (MEC) at the network edge. Traditional "network-only" Service Assurance will struggle to accommodate these use cases effectively.

Unlike the relatively monolithic environments for which legacy Service Assurance platforms and operations were designed, modern telecommunications businesses run on a complex and dynamic ecosystem encompassing multiple in-house, supplier, and partner solutions and technologies. Customization-led approaches can no longer deliver the required levels of efficiency, while traditional integration methods are costly, slow, and fragile, and do not scale to meet the needs of today's operators. The increasing volumes associated with 5G will add to the stress, further invalidating traditional operations. With more data and more devices to accommodate, manual or strictly deterministic approaches to Service Assurance will not scale effectively.

Maturing Service Assurance models and technologies

The evolution of Service Assurance should be seen in the context of broader trends in telecommunications technology. In a rapidly transforming industry, operators need to be able to make an agile response to changing customer needs and emerging business opportunities. This has driven a trend toward more proactive, predictive, and ultimately autonomous operations, where decision-making can be entirely automated and human interaction for mundane tasks can be eliminated. Service Assurance is an important element of this strategy, as operators seek to support greater automation across the lifecycle, including the creation, assessment, assignment, notification, and remediation of trouble tickets with minimal human involvement.

As operators seek to accelerate operations to the velocity and scale needed to deliver modern 5G services, artificial intelligence and machine learning will play a key role in enabling this higher level of automation for use cases including:

- Service management to ensure quality of service through optimized network and IT services
- Customer experience management focused on the needs and experience of individual customers and users
- Autonomous operations where AI/ML-powered insights enable closed-loop automation

Beyond automation, meeting customer objectives will require operators to increase their focus on interoperability. By promoting easier integration and operation across diverse and complex ecosystems, operators will be able to mature beyond KPI-driven platform management to a more fluid and unified approach to management across services. Delivering the right data to the right people and processes at the right time will be important as well, providing enriched resource and service context to enable greater levels of insight, actionability, and automation.

To ease management complexity, the new generation of Service Assurance platforms will increasingly be “headless,” integrating into a common user experience portal for network teams to reduce the number of systems that operator personnel need to interact with. A single platform across both IT and network operations will support greater convergence to improve visibility, quality, and efficiency. Support for open standards and digital architectures will improve interoperability and ease integration across technology ecosystems. Support for cloud-based OSS delivery will enable operators to take advantage of cloud elasticity and scale.

In my next blog, I’ll talk about using AI-powered operations, or AIOps, to support Service Assurance and deliver closed-loop automation.