Challenges with network service delivery today

Service assurance and quality insights are among the foremost drivers of profitability for service providers. Just how vital quality of service is to keeping customers is made clear by survey findings such as those presented on the left.

This shows that customer quality of experience is highly correlated with a service provider’s ability to deliver services right the first time and to troubleshoot problems speedily when they do occur, instead of waiting for customer complaints to assess service quality levels.

Current methods of service assurance leave plenty of room for improvement, and the majority do not take into account today’s transformation efforts to next-generation network architecture that is software-defined and programmable. These service assurance systems are also not well integrated with the fulfillment process of service delivery.

To address the challenges that service providers are facing with service assurance in existing and emerging networks, the concept of Orchestrated Assurance was developed in ETSI NFV PoC #36. The model-driven Orchestrated Assurance methodology is designed to bridge the gap between service fulfillment and assurance, where end-to-end activation tests and monitoring scenarios are defined at the service design stage and automated throughout the full service lifecycle in closed-feedback loops. Orchestrated Assurance is also customer-centric; it allows service providers to assess services the customer is actually using, as opposed to polling passive network device counters for KPIs only loosely correlated to real customer experience.

In what follows, the issues with today’s service assurance methods will be outlined and it will be shown how Orchestrated Assurance can address these challenges.

Challenge #1: Inadequate service activation testing

Upon ordering a new service, customers expect it to be accessible and working as soon as possible; therefore, service providers must make sure that services will be delivered right the first time. Despite

- Around 82% of churn is due to frustration over the product or service and the inability of the provider to deal with this effectively.
- On average, one frustrated customer will tell 13 other people about their bad experience.
- For every person who calls with a problem, there are another 29 who never call.
- About 90% of customers will not complain before defecting – they will simply leave once they become unsatisfied.

Soldani, D. et al
QoS and QoE Management in UMTS Cellular Systems, 2007
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Orchestrated Assurance with Netrounds

If service orchestration has traditionally been handled like this...

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If service orchestration has traditionally been handled like this...
... we can illustrate the improvement brought about by Orchestrated Assurance like this:

The following improvements are introduced to the service life cycle with Orchestrated Assurance:

1. **Service Activation Testing.** End-to-end service activation testing using real-world traffic, supplemented by carrier-grade, network-level measurements, ensures the viability of the service from the customer’s perspective. This testing may be contrasted with the simple methods often used today, such as ICMP Pings, or no activation testing at all.

2. **Active Quality Monitoring.** Active monitoring of individual services and network circuits, analyzing metrics that are directly related to customer experience rather than data pulled from device counters. Passive monitoring may still be complementary.
3. **Troubleshooting**: Triggered remotely and automatically in order to resolve problems: a vast improvement on manual field testing with an assortment of proprietary, handheld hardware tools. Netrounds offers a comprehensive Orchestrated Assurance solution for the full service life cycle, spanning activation testing, quality monitoring, and troubleshooting. This active, automated assurance solution helps service providers to improve customer experience with IP-based services such as Internet, TV, voice, and other quality-demanding services, improving operating margins by automating manual tasks and enabling remote troubleshooting, decreasing capital expenditures for test equipment in the process.

![Netrounds complete controller-based solution](image)

**Figure 3**: Netrounds complete controller-based solution.

Suitable for physical, hybrid, and virtual networks, the Netrounds product is software-based and can run on standard x86 servers or on hypervisors in virtualized environments. The core component of Netrounds is a unifying cloud-based Control Center that provides a consolidated GUI for operations staff, as well as a complete API for external OSS and NFV orchestrators, to remotely control Netrounds’ traffic-generating active Test Agents.

**Further reading**

For more information on Orchestrated Assurance, see the Netrounds white paper “Orchestrated Assurance: Use case and benefits”, available at www.netrounds.com/resources/#whitepapers.