

Times are changing for Service Assurance. Are you Keeping Up?

How to survive the growing complexity of customer experience issues and keep up with the next generation of OSS

By 2019 over 90% of the earth's population will have mobile network access, and by 2025 over 1 Trillion 'things' will be connected. The impact that mass smartphone adoption, data, mobile applications and cloud computing and storage have had on our society in the past decade is hard to overstate, and the next decade doesn't seem to be slowing down. Fortunately, all of this is coinciding with new technological innovations, such as the rise in Software Defined Networks (SDN), Network Function Virtualization (NFV) and the launch of 5G in 2020. With this will come a new era of connectivity that goes beyond anything we've seen before.

Will you be Ready for 1000x Data?

Many service providers are already running into some of these challenges with today's converged networks. A network and the traffic it carries are constantly changing. Extracting maximum performance requires constant tweaking. The ability to extend and optimize network resources has become increasingly important as CAPEX and OPEX continue to climb, while data revenue lags behind – an issue that will only get worse, since 5G as data use is predicted to grow by a whopping 1000x.

In addition to managing costs, service providers also need to ensure users a high quality of experience (QoE) and quality of service (QoS). As demand for data continues to climb, CSPs are challenged by the explosive growth of video traffic and delivering new services such as VoLTE, IoT enterprise services, and high value OTT content. The end-to-end customer experience becomes increasingly important, yet ever more difficult to manage. Being able to ensure QoS and QoE across any device or technology becomes critical for success. But with so many challenges, how do service providers prioritize where their dollars will go? Which problems do they solve first?

Service Assurance and Hadoop – The Big Data Solution for Smarter CEM

Fixing the network in a targeted manner could bring big performance rewards – after all, 80% of call drops and 50% of data throughput issues are due to problems in the RAN. One of the ways to prioritize what to tackle first is by leveraging the power of big data and analytics – taking data that operators already own, and mining it to optimize the network. But storing and analyzing all this data can be costly. It's the problem of having too much of a good thing. CSPs know their data is valuable, but it has also been very expensive to hold onto. By utilizing the support of a more traditional style analytic database along with newer cost-effective Hadoop technology, service providers get the best of both worlds with a much lower price tag.

Large quantities of data can be analyzed in near real time and xDRs, KPIs and KQIs can be stored for long periods of time for future queries. The end user can drill down and then 'slice-and-dice' the information stored in the different areas of the Hadoop ecosystem, creating dynamic KPIs and KQIs and high level summaries from flexible, cross-dimensional information. With Hadoop, the cost savings are staggering: instead of costing thousands to tens of thousands of dollars per terabyte, Hadoop offers computing and storage capabilities for a fraction of the price.

What is the best way to go about this?

All this new technology is paving the way for OSS transformations, where multiple, outdated systems are consolidated and upgraded to take advantage of new efficiencies. This is enabling CSPs to create not just a smarter, more optimized network, but one that is also more cost-effective. Machine learning and data analytics tools can be used to transform big data into the 'right data' - providing a useable knowledge base to create a more intelligent network. Now that CSPs have a lower cost alternative, leveraging the power of big data makes even more financial sense. By combining information from probes and network elements, along with financial and performance metrics, location data and KPIs, Engineering and Operations teams can proactively ensure high quality service for the right customers at the right time, and troubleshoot and optimize the network with an eye towards profitability. CSPs can determine exactly where their CAPEX dollars will be best utilized and how to better prioritize limited resources.

Innovation is at our core – 5G and NFV

While 5G still is yet to be fully defined, one thing for certain is that it will bring a new layer of intelligence to the network; but with this intelligence comes a new level of complexity and other challenges that service providers need to overcome. Managing such issues as localized caches, network densification, infrastructure sharing, network virtualization, multiple frequency bands, HetNets and flexible spectrum allocations are just a few.

At the 5G Innovation Center at the University of Surrey in the U.K., TEOCO has been working hand-in-hand with service providers and other technology companies to define and develop the 5G infrastructure that will 'underpin the way we communicate, work and live our everyday lives in the future.' The Center offers the UK's only large-scale 5G test-bed, which will be used to prototype technological solutions, helping to define the global approach to 5G as it moves towards standardization. Today, TEOCO provides the 5G Innovation Center with planning and design software for the trial, and in time will provide its service assurance and network optimization technology as well.

Another area where TEOCO is leading the way is in NFV. Many of today's leading service providers are undergoing massive operational transformations, challenged with taking existing support systems and consolidating and adapting them towards a more virtualized model. This will require sweeping cultural and organizational changes. A new virtualized architecture for business and operational support systems (BSS/OSS) will be required; but the work will be well worth the effort, resulting in both cost and time savings. TEOCO's work with the TeleManagement Forum's catalyst program is helping to shape the future of NFV. Our catalyst demonstrates how to increase operational efficiency and reduce operating costs by automating optimization

processes in a converged network, running on both traditional and virtualized infrastructure. We look at larger sets of management systems, including NFV MANO and service fulfillment, in addition to service assurance.

For more information, [schedule a meeting](#) with us at Mobile World Congress to see a demo of TEOCO's new Helix 9.0 service assurance solution or to learn more about our work in 5G and NFV.