

Accelerating 5G with Service Assurance

By: Steve Douglas

Any operator moving at breakneck speeds toward complex 5G rollouts will be the first to tell you this is not your father's "G." Previous generation network rollouts followed a familiar pattern, delivering notable incremental benefits aimed squarely at better user experiences. The rollout strategies remained relatively uniform from one generation to the next. 2G to 3G introduced us to competent mobile browsing and functional apps. 3G to 4G brought us ubiquitous media streaming and immersive social media experiences. A common theme that accompanied each generation's introduction was that the service offered was largely best effort. It wasn't until a range of service issues started to crop up that operators would start to consider assurance technology to bring experiences back in line with expectations.



Operators know that following this same strategy for 5G would be at their peril. These networks are just much too complicated, with too many touchpoints and surface areas, too many different devices trying to access them, and too many different customer types waiting in the wings to leverage their power. And so, for the first time, service assurance is making its debut not when problems arise but before they'll ever have a chance to.

Host of new market dynamics assuring the need for assurance

Baking service assurance into 5G networks from the start has actually proven to be an easy decision for operators. The reality is that there are so many drivers demanding it that operators hardly have a choice.

Let's start with the network itself. 5G rollouts have been accompanied by pressure to move quickly. Yes, there's cachet in being first, but a big part of it is that, because these networks will cost many hundreds of billions of dollars, there is eagerness to get to revenue quickly to begin recouping. With 5G still in its infancy, there are so many lessons yet to be learned. In many cases, this learning is happening on the fly. After all, they're simply not jumping through the same process hoops required in previous generations. That means more risk, all but necessitating mechanisms to find and respond to issues as quickly as possible.

Then there's the complexity. The first phase of 5G is based on a hybrid approach, known as Non-Standalone, in which it co-exists with 4G. But legacy networks were not necessarily built to be force conjoined with their successors, which introduces complexity across the two network generations. Sure, previous generation transitions may have resulted in a shared backend core but signaling and processing would not have been split as they are in current scenarios. So now, operators must make sure the plate is always spinning on 5G because they can't risk it falling and bringing 4G down with it. In this case, service assurance not only serves as a failsafe but also as a bridge to future evolution. With assurance in place, operators can add core networks and architecture to more safely migrate to 5G Standalone.

Optics will surely play a role here, too. Consumers are generally happy with their 4G services as the most popular apps have been optimized to offer an ideal experience. With perhaps little exception, early consumer 5G adopters are not likely to see any

major benefit at this moment when accessing the first 5G networks. Of course, the nightmare scenario is that they access 5G and actually see service degradation, an absolutely real possibility that has presented itself in our testing. We know that if word starts to get out that 5G can't meet basic consumer needs, would-be lucrative enterprise customers may decide they will wait a bit to start dipping their toes in the water. This is not a risk that operators are willing to take, and they know service assurance is essentially their insurance policy in this regard. Finally, on the competitive front, Wi-Fi 6 is starting to develop some real mojo, requiring that 5G fire on all cylinders to differentiate the tech from the beginning. Once again, more features and capabilities deployed with little advance testing just means more potential points of failure that service assurance can guard against.

Active assurance: putting “passive” in the past

Network assurance has long been a staple of mature networks. But whereas previous networks were supported by “passive” assurance, 5G will be buoyed by “active” assurance.

In the passive world, assurance solutions were able to flag issues but couldn't specify the origination point or root cause. So, even if a potential issue were identified relatively quickly, it could take half a day or more of analytics and monitoring to firmly establish that a problem did indeed exist.

As mentioned earlier, these 5G networks are in their infancy. That means we can expect frequent software updates from the vendors that must all be constantly revalidated. Active assurance testing can serve as the backbone of change management, immediately identifying issues and making sure service is not degraded.

Active testing brings knowledge and immediacy to trouble situations by working constantly in the background to identify issues before subscribers are impacted. Rather than spend hours figuring out whether there's a problem, active assurance can immediately launch a series of progressive tests to quickly reach a definitive conclusion. At the heart of this capability is intelligent process automation, with tests being launched dynamically based on real-time inputs from previous tests. This helps protect not only the customer experience but the effects on costs as well. After all, the more quickly you can isolate issues and address them, the less damage they can cause. The more a machine can do the grunt work, the more NOC teams can be deployed to actually solve issues.

To be sure, active assurance is not just about detecting and isolating issues, it is about running tests constantly to see if an issue could ever exist, no matter how remote the possibility may seem in the moment. And this is happening networkwide. Whether out at the edge working to determine what that end user experience looks like, or at the heart of the core, this networkwide view provides the holy grail to expediting resolution. In the past, assurance would have only been done within the network, without regard for what may have been happening on the consumer's device. The result? Many problems simply slipped under the radar. Not anymore.

Coming to a network near you

There's a decent chance that early 5G adopters will be served by a network featuring active assurance. In fact, Spirent recently announced that it is deploying the technology for a major tier-one U.S.-based mobile operator. Dozens of cities are already benefitting, with hundreds more planned heading into 2020.

And if you think what's possible right now is exciting, the future for active testing glows even brighter. For its next act, active assurance will go beyond identifying root causes to actually triggering functions in the network that automate resolution, effectively closing the loop without any human intervention. This puts operators firmly in the world of the zero-touch network.

This evolution of functionality will move operators ever closer to the delivery of trusted, mission-critical enterprise service assurance, where SLAs can be guaranteed and actively validated. Eventually, active testing will evolve to provide active security testing, too, as the network becomes even more disaggregated and wrapped in software.

But first, we have brand-new networks to assure and an opportunity to deliver the best experiences consumers and enterprises alike have ever received from mobile—brought to you, in part, by active assurance.