Service performance visibility: gaining holistic insights from diverse network architectures

INSIGHT SPOTLIGHT

Since the start of the year, we have explored the connection between 5G, new enterprise services and network/service visibility. Our most recent analysis looked at operator thinking about enterprise SLAs in a 5G era. Operators understand that 5G (standalone, in particular) will be critical for meeting enterprise performance requirements and for proving their value over other connectivity providers.

Whether this means SLAs will evolve is unclear; only half of the operators we surveyed expect the SLAs they offer to change as a result of selling 5G based on advanced capabilities. Where operators were in agreement, however, was on the importance of edge computing and cloud services as part of enterprise 5G. Yet, these new capabilities come with their own challenges in terms of network and service visibility.

Analysis

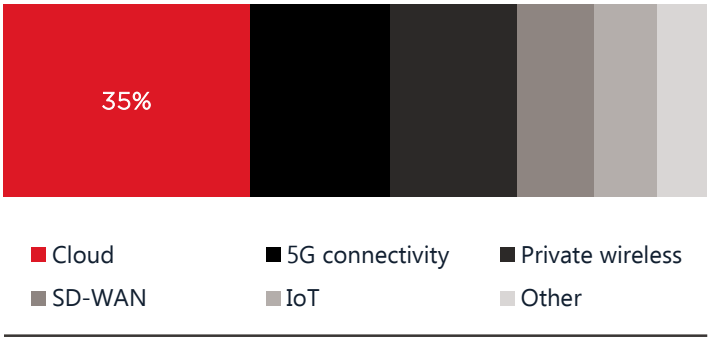
Cloud, edge and enterprise 5G

It is clear how edge computing and cloud deployments are fitting into operator plans for enterprise services. Public cloud heavyweights – namely AWS, Google, and Microsoft – have all announced edge initiatives in collaboration with operators. We've also seen operators highlight on-premise edge deployments as a core part of their enterprise value proposition – including the high-profile work between Lufthansa and Vodafone in building a 5G campus network.

The rationale is understandable: cloud and edge solutions help to support key enterprise service requirements such as low latency and high availability. And not surprisingly, the focus on the cloud has only grown against the backdrop of Covid-19 changing the way we work (see chart).

Source: GSMA Intelligence

Enterprise services: operator expectations of the segment most likely to grow post-pandemic



Joining the dots for service visibility

The use of cloud and edge resources for delivering enterprise services is not new. But as operators look to scale up the use of these resources in a 5G era, they are faced with the challenge of how to monitor and assure the performance of their networks and services.

At the most basic level, this challenge stems from the creation of a more diverse network and service environment marked by a broader set of network nodes, network locations and network suppliers. In addition to this, new 5G-led services (potentially critical services) may require per-device and per-service visibility. Consequently, there is a need for performance data across diverse network components, suppliers, services and devices – with real-time insights supporting performance optimisation. More broadly, there is a need for a holistic view that can stitch these sets of data together.

A simple orchestration of data?

It is more accurate to think about this as an exercise in 'orchestration' – the data already exists, but it simply needs to be orchestrated into a meaningful view. But whether or not this is actually simple remains to be seen.

On the one hand, the relevant data already exists or is specified as a part of new standalone 5G network functions, and plenty of existing tools have been designed to collect, aggregate and present this data. On the other hand, based on our discussions with operators, there is a clear worry that extracting insights from this data will prove challenging given the sheer scale of new network and service capabilities and the perennial issues of multi-vendor collaboration.

The good news is that the requirements are well understood (as are the tools that will help to deliver on them): a real-time, actionable view that does not suffer from big data delays; the ability to leverage data across legacy and new network components (and vendors); the use of machine learning to help identify clear insights from the granular data; and the use of AI for predictive/prescriptive analytics and actions. The challenge, then, is for the industry to prove to operators that this is all within reach.

What next?

Operators that are actively engaged in planning and selling enterprise 5G services have some of the best insights into where the market is headed. That is why we have focused our recent analyses on discussions with a select set of market leaders. In our next analysis, we will look at input from a global survey of more than 100 operators across the globe to understand market views around network visibility and SLAs more broadly.

Implications

Mobile operators

- **Focus on slicing –** In the early days of 5G, edge networking and network slicing were both emphasised as critical innovations. Today, operators are much more likely to stress the importance of edge and investigate slicing use cases. This is understandable, as network slicing is a much more complicated topic that can stretch from the network core, through transport and into the RAN. However, as a delivery mechanism for the 'envelope' within which SLAs are met, operators must build an understanding of slicing capabilities and how these will fit into future enterprise offers.
- **Establish processes to deliver insights –** Operators must recognise that 5G will introduce many new network and service parameters, and that data will be served up to track all of them, which will make it easy to drown in all this data very quickly. Working with vendors to establish tools and processes for delivering insights from the data (leveraging existing systems) is therefore crucial.
- **Compete on insights –** Network and service insights are important for operators, but they are equally important for enterprise customers. Where robust processes and tools have been developed to obtain those insights, operators should use them as a competitive advantage. Helping enterprise customers understand performance for services with complicated architectures is something that some operators may not be able to do. Those who are able to, though, can position themselves as experts and the 'only' option for supporting demanding enterprise use cases.

Enterprises

- **Evaluate offers based on insights –** If operators have an opportunity to differentiate themselves based on holistic service and network insights, enterprises have an opportunity to use this as a tool for evaluating competitive offers. Beyond mere evaluation, an operator's ability (or inability) to deliver these insights should be factored into service pricing terms and negotiations.
- **Don't neglect slicing –** Operators may not be putting slicing front and centre in their 5G enterprise marketing (yet), but that doesn't mean it's unimportant or irrelevant for enterprises looking at the advanced capabilities that 5G brings. Enterprises need to understand how slicing works and what it means to them, which will drive operators to prioritise slicing in the process.
- **Don't ignore private networks –** Whether LTE or 5G, operators see private networks as a tool for meeting specific enterprise coverage and performance demands, often in a more deterministic way than with a slice on a public network. This does not, however, obviate the need for solid insights into network and service performance on those networks. To the extent that enterprises may source private network solutions from a variety of suppliers – operators, network vendors and integrators – the use of network and service visibility as a purchase criteria is only elevated.

About this research

This research forms part of an Insight Spotlight series focussed on the market demand, requirements and technology solutions around 5G network and service performance visibility in support of enterprise services.

In conjunction with service assurance vendor EXFO, and with support from a number of mobile network operators around the world, the research aims to shine a light on a business and technology asset key to delivering 5G enterprise services but less publicised than some 5G capabilities. In doing so, the ultimate goal of the research is to help the industry execute on the 5G opportunity it has already recognised.

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