INSIGHT SPOTLIGHT

Last month, we began exploring the link between 5G enterprise services and network performance visibility. Our initial analysis noted that delivering these services at scale requires operators to fully understand how their networks perform. The argument is straightforward: to sell SLA-linked 5G enterprise services, operators must be able to prove they are delivering on their service promise. While 4G and non-standalone 5G networks are currently used to deliver enterprise services, tomorrow's standalone (SA) 5G networks promise to bring real-time, per-device performance criteria. To put network and service visibility into context, however, we need to explore enterprise requirements. This includes looking at how enterprises are purchasing services today and how that may change, as well as what operators will have to provide before and after these services are purchased.

Analysis

5G network requirements versus service requirements

5G introduces compelling capabilities, including high bandwidth, service slicing, massive IoT, precise geolocation and high reliability. It will therefore support a wide array of enterprise verticals and, hopefully, drive enterprise (or even societal) digital transformation. As enterprise use of 5G will contribute around $2.2 trillion to global GDP between 2024 and 2034 (see chart), the opportunity for operators is clear.

However, none of these capabilities matter unless they can be bundled into discrete services to meet specific requirements; they need to be provisioned, assured and accurately billed. This leads to some important questions: what might these services look like and where does service visibility fit in?

Source: GSMA and TMG

5G's contribution to the global economy by sector between 2024 and 2034

Enterprise service expectations: a cold chain example scenario

To answer these questions, take the example of cold-chain logistics, involving temperature-controlled supply chains that ensure products can be sold/distributed thanks to verifiable quality control (e.g. for produce, chemicals, pharmaceuticals).
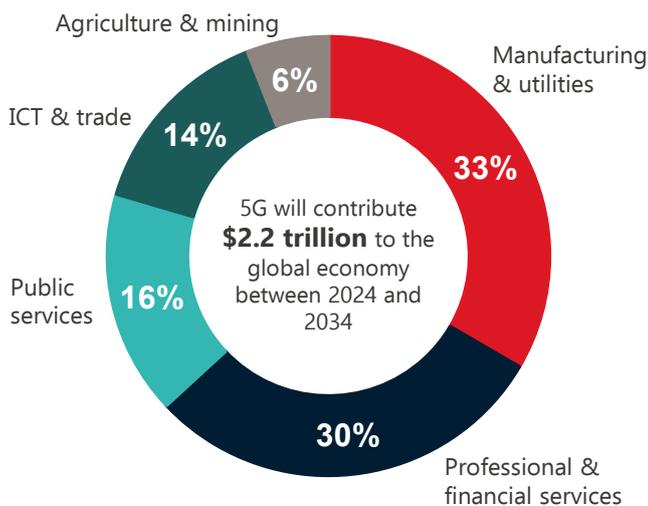
In the most basic cold-chain use cases, hundreds of thousands of dollars of value may be at stake, but latency and bandwidth requirements are low: temperature monitoring doesn't necessarily require massive throughput and verification need not be in real time. However, the stakes will be considerably higher in other cases, which will have real-time requirements (e.g. for nuclear medicine and organ transplants). In all instances, the public 5G network would be leveraged, reflecting the reality that regulatory compliance is a major driver of enterprise IoT deployment. Regardless of the cargo value, cold-chain logistics represent a typical (but still diverse) form of enterprise digital transformation that operators hope to enable.

But 5G capabilities are only one part of the equation; how those capabilities are built into solutions and provisioned is just as important. In the case of the latter, specific use cases are less essential than the tools that enterprises have come to expect in building and acquiring digital services: API-driven activation (self-service); SLAs outlined at set-up (validated against network capabilities); API-driven performance reporting and SLA monitoring; and real-time views into consumption and SLA compliance.

This might seem like a tall order for the simple requirement of checking on the temperature of cargo, especially when it's something as common as produce. However, it is worth remembering that advanced real-time use cases enabled by SA 5G will be more critical. More importantly, self-service and API-driven operations are the new normal for many enterprise services, as well as for enterprises working with cloud players. Applications are now designed to adapt (in real time) to network conditions to ensure optimal performance. If operators hope to scale their enterprise 5G services, API-led automation will be more than a competitive differentiator – it will be a necessity.

Even for relatively simple use cases, operators will need to understand the real-time capabilities of their network and how to serve that data to an enterprise looking to buy network capacity. Now consider the future applications that 5G promises to enable, such as fleets of coordinated drones, real-time health monitoring and intervention, and remote vehicle operations. Where 5G makes promises about latency, availability and bandwidth, the requirements only get higher.

Implications

Mobile operators

- **Learn from cloud players –** Operators have been busy over the past year, building partnerships with the likes of AWS, Microsoft and Google that focus on new models for service delivery (especially at the network edge). There is an obvious danger that the cloud players could capture edge or enterprise 5G business from operators. As such, operators need to clearly articulate and demonstrate how 5G's unique capabilities (with SA in particular) differentiate their offers; at the same time, they need to leverage webscalers' go-to-market strategies and business processes to deliver compelling enterprise services.

- **Target regulatory requirements –** Where regulatory compliance is driving IoT deployment decisions for enterprises, there is an opportunity for operators to build new service offerings. In particular, by pitching their IoT services in support of regulatory compliance, operators could get closer to enterprise verticals by showing that they understand enterprise demands and that they are uniquely positioned to serve these demands. Of course, to prove compliance, operators may also need to deliver network and service performance details – potentially in real time.

- **Build trust –** Before operators can hope to offer enterprise services with committed performance SLAs, they need to build the trust of the enterprise community. To do this, they need to promote successful enterprise deployments. They must also effectively demonstrate network and service performance in line with enterprise requirements and show how devices and slices are being assured in real time.

Enterprises

- **Network capabilities in perspective –** To date, much of the marketing around 5G and the 5G value proposition has revolved around new network capabilities such as edge computing, low latency and slicing. With enterprise digital transformation on the radar of nearly every operator, marketing (in support of sales) will continue to ramp up. However, enterprises need to recognise that network capabilities are just one piece of the puzzle and that these need to be integrated into a solution that can scale. This includes existing enterprise processes around service on-boarding and operations.

- **Look at 5G in the context of other technologies –** Enterprises considering connectivity solutions have many technology options, from 4G and 5G to unlicensed solutions such as Zigbee, LoRa, and Wi-Fi 6. Enterprises must consider how each technology addresses their diverse requirements: low-power applications, massive device density, ultra-reliable low-latency communication, high bandwidth, high mobility, global reach, edge compute, slicing etc. It's also important for an enterprise to evaluate the cost of multiple technologies versus one common network in terms of deployment, operations and integration into a unified service offer.

- **Consider vendors and operators alike –** Recently, Nokia and Vodafone both announced deals to deploy a private 5G network for Lufthansa to support industrial applications, either completely on premise or linked to remote workers. These were two different solutions with two different suppliers – each willing to compete for and execute on the enterprise 5G opportunity. This should serve as a reminder that operators and vendors alike will be potential suppliers for future 5G use cases. Enterprises should understand the capabilities that differentiate operators and vendors and leverage competition between them to obtain the best solution.

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.

Related reading

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