5G Operations use case: eSports

Adopting a service-centric approach to 5G operations for enhanced ROI

5G is more than just a radio upgrade. It's a platform for innovation that allows telecommunications service providers to embrace new businesses models and tap into new revenue streams, including **B2B2X partnerships** with vertical industry players such as those in **cloud gaming and eSports**.

But if service providers are to take full advantage of the 5G opportunity, they must first take a fresh look at their approach to **network and service operations** — and start streamlining, simplifying and automating the way they create, deliver and assure their services.

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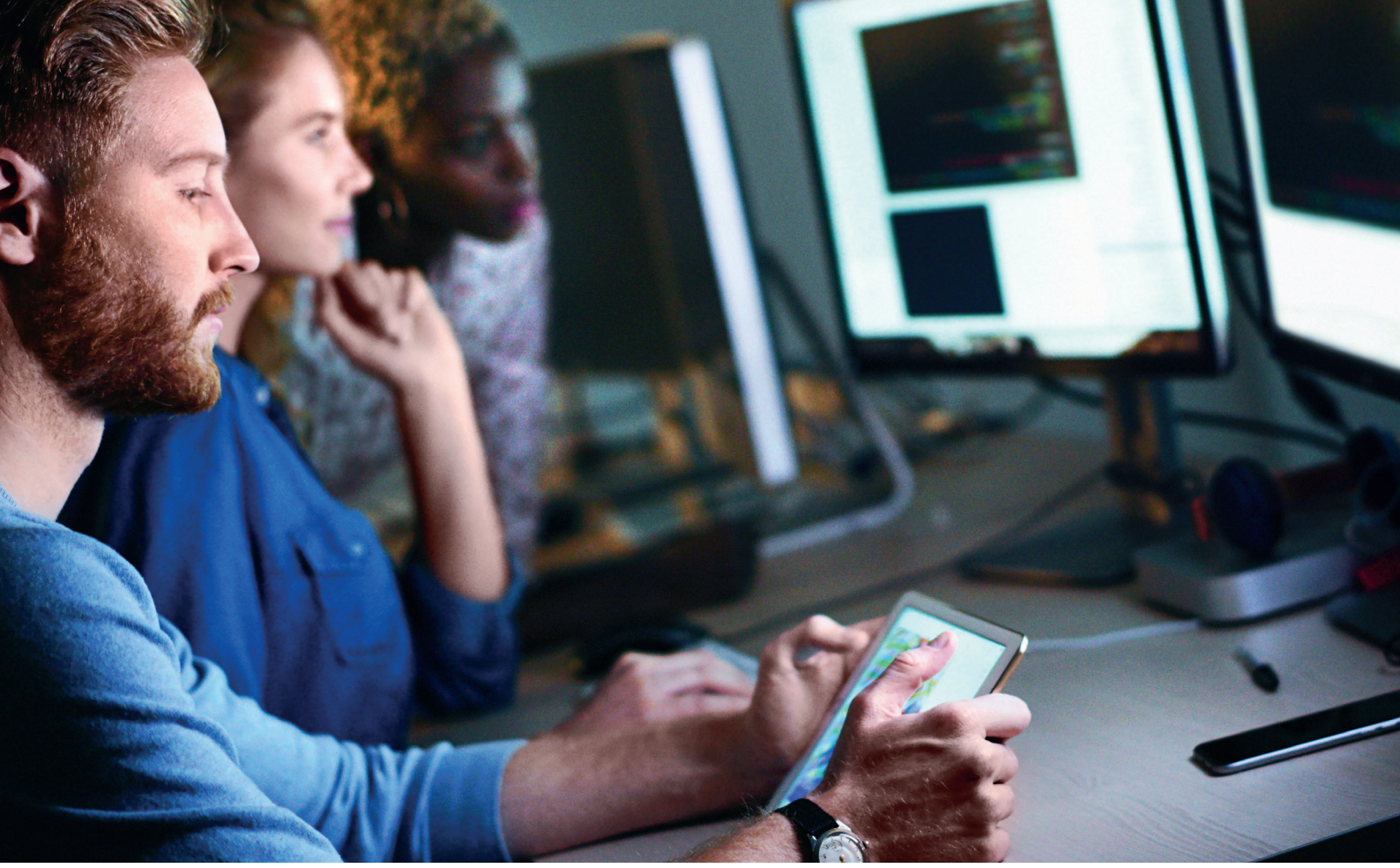

Challenge

Moving up the 5G value chain

5G is going to turn the network into a value-creation platform that engages service providers with a vast ecosystem of third-party creators and innovators like gaming companies. With **5G slicing**, providers will be able to assign virtualized portions of the network to those third parties so they can integrate 5G capabilities into their own digital services.

This potential to collaborate with innovative third-party enterprises is a huge opportunity, especially given the increasing saturation of many consumer mobile phone markets. But B2B2X relationships are different than B2C. Enterprises want stringent service-level agreements (SLAs) and the ability to customize services to their needs — things service providers can't easily provide today.

That's because traditional network and service operations are siloed and fragmented. No single group has operational control of an entire service from end to end, making it hard to deliver on business-focused KPIs and ultimately adding to the service provider's costs.

To meet these challenges, the internal IT, operations, customer care and other groups within the service provider organization must come together in a more scalable, automated and service-oriented way. Doing so will make it possible to design services for enterprises and consumers based on their **business intent** — and not simply on what the network is capable of.

Establishing service-oriented processes and operations groups is the first step on the road to 5G success, shifting from standalone processes to an integrated process framework.

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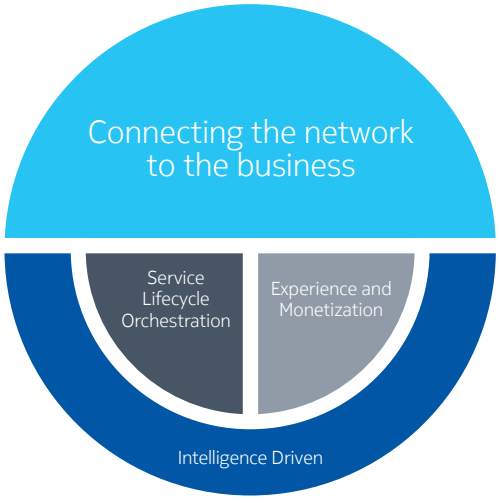
Opportunity

Connecting the network to the business

Bringing all the parts of the service provider organization together to create **business intent-driven services** will make virtually every aspect of operations more seamless, streamlined and repeatable — enhancing ROI on both legacy and 5G network infrastructure. Doing so at scale demands an **AI-driven, software-based 5G network architecture**, because there will simply be too much to monitor and act on in real time for human teams to handle. Software injects the necessary flexibility to meet shifting user needs and conditions. AI provides the speed and intelligence to identify those shifts and how best to adapt to — and even anticipate — them.



With an intent-based approach and AI/software-based network providers will have all the tools to establish open ecosystems and “connect the network to the business”, creating, deploying and assuring services starting with end customer needs and working back to determine the best technologies and architectures to meet them. This will allow service providers to reach new customer segments, optimize costs and generate additional revenue by becoming a more vital part of the digital value chain.

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Application

Powering eSports with 5G slices

The nature of videogaming is changing. What started as a disconnected experience anchored to a home console is evolving into a connected, cloud-first experience. Players increasingly enjoy real-time multi-party games anywhere, with anyone, at any time. Reliable, low-latency, high-throughput connectivity is essential to providing the best possible experience.

Special gaming events like **eSports tournaments** can give service providers and their partners the opportunity to generate recurring revenue streams that go beyond the one-time sale of the latest game.

In the eSports case, players in multiple locations across a large city might connect for a one-day tournament. The gaming company organizing the event needs **two 5G slices: one for "VIP" gamers and one for "basic" gamers**. Each is configured for different levels of latency, throughput, capacity, device volumes, locations and so on, according to the SLAs and customer experience index (CEI) parameters agreed on with the service provider.

To support an event like this, today's service providers would need to do a truck roll and extend the network to each eSport site. They'd then need to operationalize what are essentially brand-new services for that one event. There may be a multiple vendors and multiple layers of connectivity, adding costs and inefficiencies.

With properly constructed, automated 5G operational capabilities, service providers can operationalize slices more effectively and efficiently — and easily turn them back "on" for the next event rather than replicating the entire process.

The videogame industry is booming, growing faster than TV and movies. Gamers are expected to spend an estimated USD $152 billion in 2019 — a 9.6% increase over the year before.*

* Source: Newzoo, Global Games Market Report 2019.

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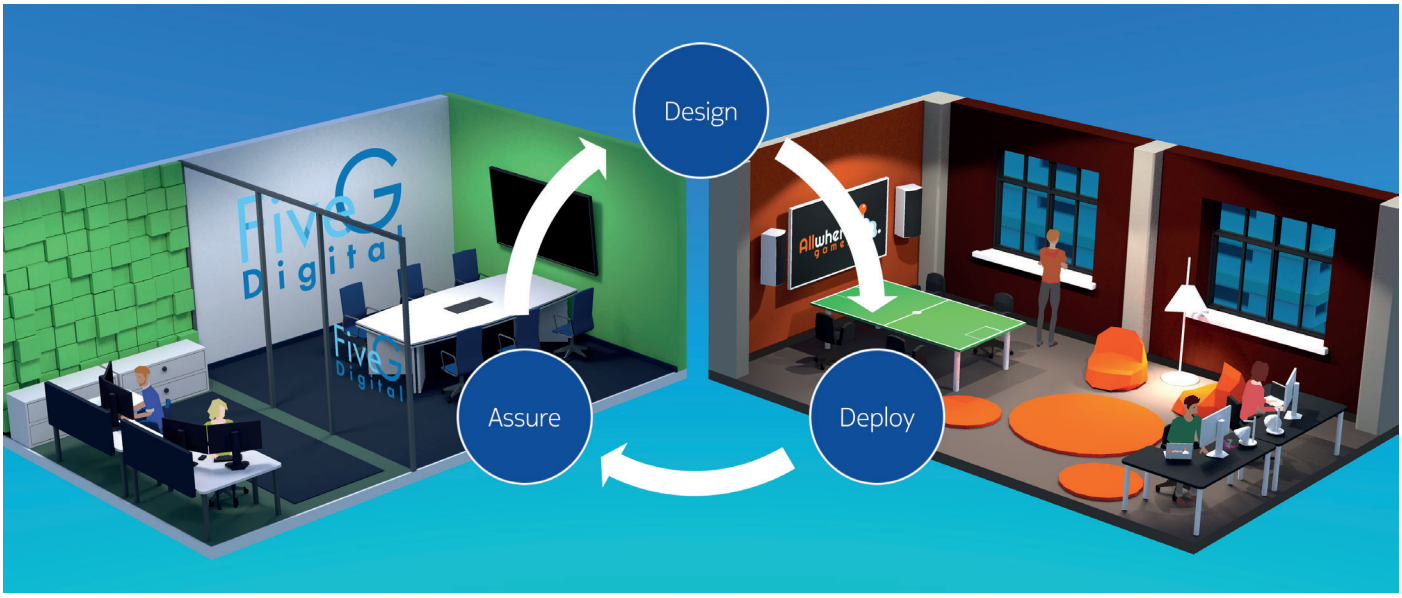
Solution

Making the operational “round trip”

To make the 5G eSports event a success, the service provider needs new tools and approaches across the three operational stages of create, deliver, assure.

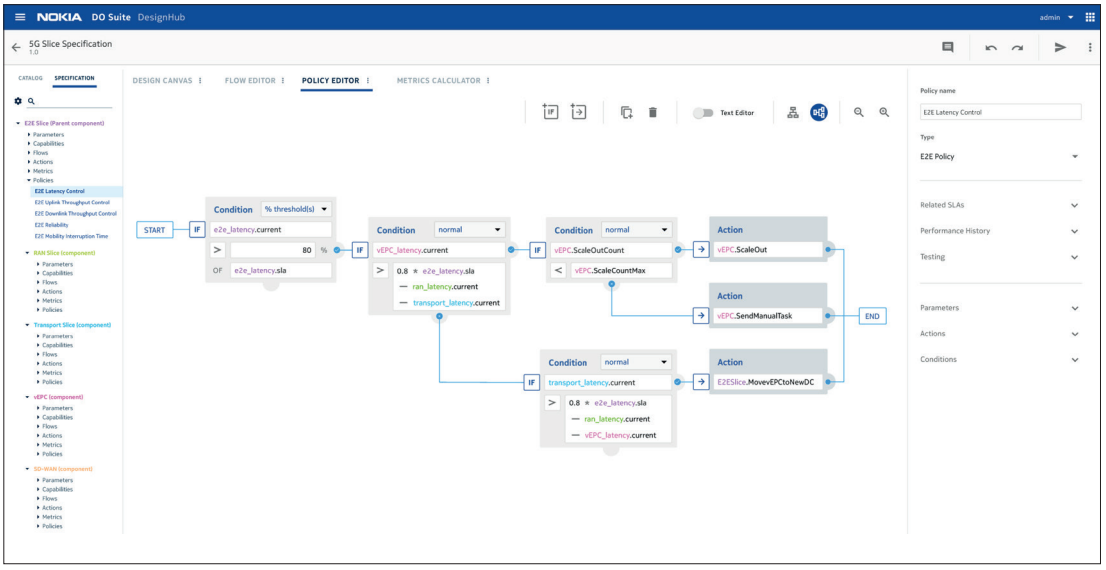


Create

Visual policy editors allow the service provider to quickly and easily design end-to-end 5G slice across four key domains: access, transport, core and public cloud. This design process must satisfy the business intent of the customer (rather than the service provider’s internal objectives), with the gaming company’s needs and preferences interpreted and pushed across all four domains. With this approach, SLAs for throughput and latency can be designed in and accounted for from the start of the process rather than as afterthoughts.

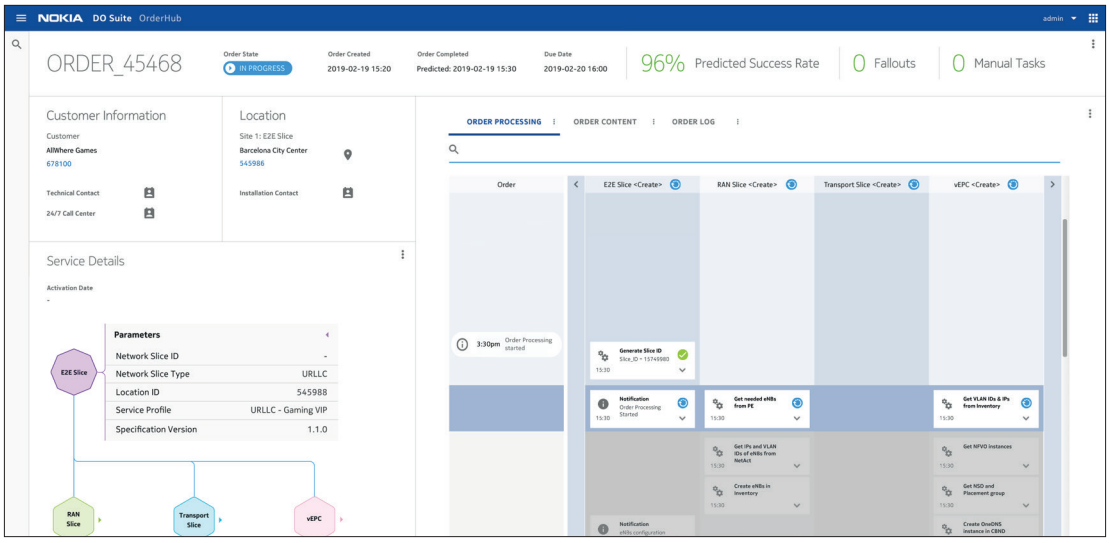
Once the slice is designed, the gaming company validates it and then further personalizes and configures it (using an online portal hosted by the service provider) to ensure it meets all business and service requirements.

Built-in SLAs with Nokia’s visual policy editor, as part of the create process step



Deliver

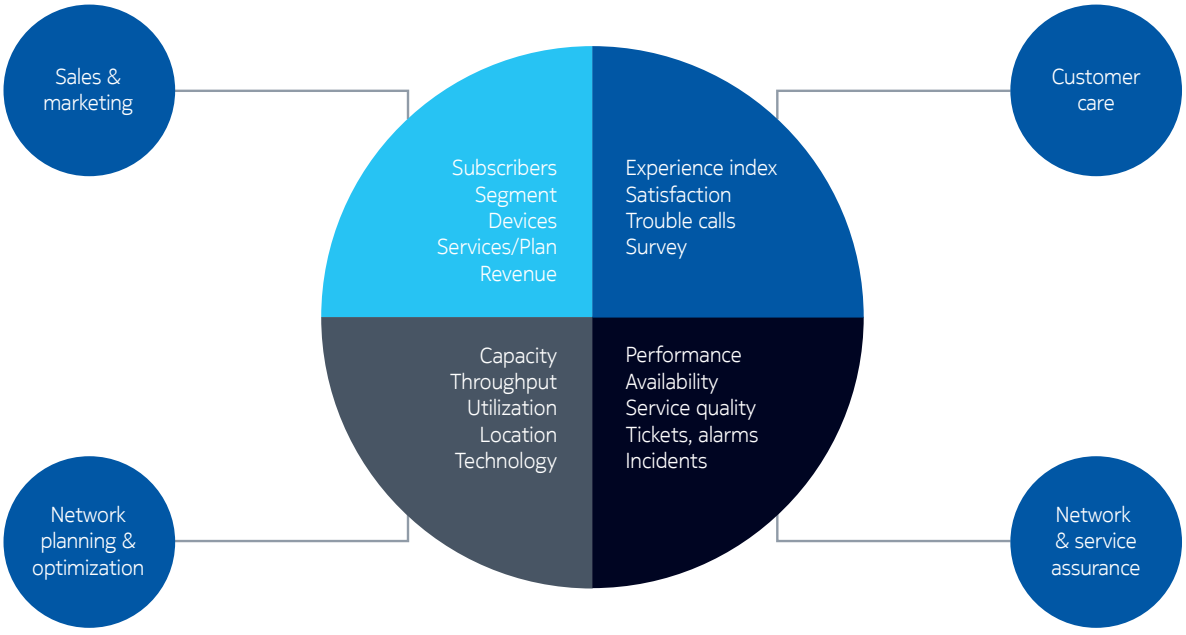
Once the slices are fully designed, the gaming company places an order. The service provider propagates the agreed-upon designs across the four domains with the push of a button.



Assure

In the 5G world, the NOC still has a role to play in assurance. So does the service operations center (SOC). The NOC works primarily from the service down to the network, while the SOC works from the service up to the customer. But a new entity is also needed: an "**evolved SOC**", which we at Nokia call the **Nokia Experience Center**. Like an AI-driven 'command and control' center, it integrates NOC, SOC, sales/marketing and customer care data, using AI and machine learning to prioritize automated actions (leaving execution of the actions to the various departments themselves). It even advises on which processes to automate first.

Multiple sources feed into the Nokia Experience Center for improved insights and actions



The evolved SOC, or Nokia Experience Center, has a user-centric design: made for users, with and by users. Its dashboard-based interface makes it easy for agents to track factors that could affect service quality, including:

- Information from the service provider's OSS, BSS and telemetry systems, including alarms and indicators for service and network performance
- External information such as social media posts, breaking news and weather forecasts
- Customer experience trends for all end users, and VIP customers, in a given area

The AI can then make priority decisions about which problems to address based on how they might affect the customer experience. Preventing or responding to SLA violations is of critical importance. Using closed-loop assurance principles, service-oriented operational systems can communicate directly with the underlying software-defined network resources to automatically fix issues by adjusting routing, switching settings or restarting servers.

As dynamic as real life

For this eSports use case, if a lot of gamers are eager to join, the tournament could easily reach its design limit of 1,000 devices. The monitoring agent can see that while the network is performing as it should, customer experience per slice has the potential to decline based on AI analysis of past behavior patterns and service quality indicators. The agent or — as is increasingly the case — an automated process proactively addresses the problem before it is experienced, dynamically deploying more virtual network resources or even additional 5G slices as needed.

Depending on the slice's design, the decision to expand capacity may be triggered automatically without any agent intervention or approval from the gaming company; or the agent may use their own judgment to make adjustments to improve the gamers' experience based on AI-driven predictions and recommendations.

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Benefits

More reliable, repeatable operations

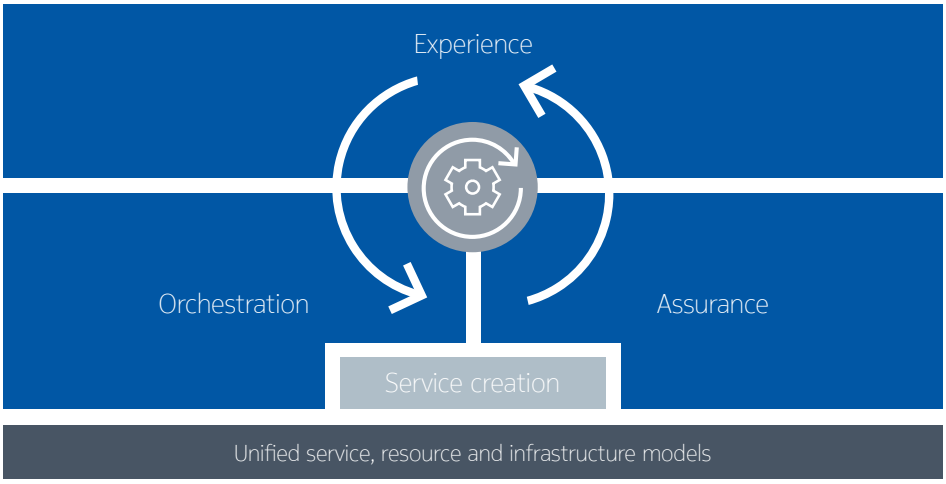
5G will help service providers lower their operating costs and increase their agility and performance. A service-oriented approach to operations further enables:

- **Faster, more efficient service design**, especially when using pre-defined 5G slice templates for specific verticals or service types (such as gaming)
- **Greater visibility into and prioritization** of the tasks that will deliver real value to enterprise customers
- **Smarter and more automated operational decisions** to maintain network and service performance
- **Closed-loop automation** for triggering/initiating actions in other systems so NOC/SOC personnel can focus on more critical tasks — helping conserve operations resources in peak hours
- **Flowchart modeling** that captures and analyzes agent actions to propose new automations of routine operations tasks

Nokia is a champion of experience-driven, service-oriented operations. We provide insightful, automated, end-to-end service orchestration and assurance along with an **AI-enabled, software-based next generation evolved SOC** and the industry's **broadest and most mature customer experience indexing solution** — giving a real-time, 360-degree view of the complete customer journey. Our end-to-end automated network operations portfolio includes fixed, mobile and core access components and solutions, our expertise extends to all parts of the service chain, and our multivendor, multi-domain and multi-API products provide the greatest flexibility in deployment and operations.

Find out how you can streamline and simplify operations in the 5G era. Contact us or visit our Operations in 5G era microsite.

Experience-driven operations



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