Nokia cloud-native solutions
Built for ANY cloud
The communications industry is in the midst of epic disruption

Communications technology is woven into the fabric of people’s lives and work all over the globe. This is creating enormous demand for connectivity based services. At the same time the technology stack and business models that operators have been using for years can’t keep up with the fast pace of new challengers. Incremental improvement is no longer sufficient to compete – after all, entirely new markets have been created in the time it takes a typical CSP to deploy a network upgrade. Clinging to the traditional carrier business model will lead either to a commodity bit-pipe business, or to complete dissolution.

**Stagnating top line revenue growth**
Challenging economic conditions as a result of the pandemic continue to place revenue pressures on Communication Service Providers (CSPs), with many operators now expecting revenue underperformance of 2–5%, compared to their pre-pandemic plans in 2020-21.

**Increasing CAPEX/OPEX**
$872B projected 5G network build out costs over the next 10 years

**Stagnating top-line revenue growth**
74% of CSPs expect an average decline of 2.5% in revenues in the next year

**Increased network demand**
Up to 60% surge in internet traffic compared to pre-pandemic network usage

**Customer experience at breaking point**
<50NPS sustained by leading CSPs across Americas and Europe over the past 5 years

-Nokia cloud-native solutions
To turn disruption into an opportunity, CSPs need to innovate beyond connectivity, focus on customer needs, while looking to new ways to differentiate themselves, drive growth and streamline existing operations to reduce costs.

Communications service providers need to adopt new strategies to successfully monetize their 5G investments.

The traditional approach, with monolithic virtualized network functions (VNFs) that take years to deploy or upgrade cannot keep pace with the new 5G landscape. The nature of 5G—dynamic, configurable and agile—requires a cloud-native approach across the business: network, operations, and processes.

Nokia focuses on these four application characteristics to consider them **Cloud Native**.

- **Small, stateless microservices**, running in containers, because compared to large things, small things are faster to get deployed and upgraded. And small things use fewer cloud resources, because you deploy just what is needed, instead of the entire network function.
- **DevOps for automation and fast TTM**. And when you deploy an upgrade, use canary deployment to test it with a smaller group, then extend it out to everyone.
- **Open architecture & APIs** so you can continually onboard innovation. For example, 5G’s core uses a service-based architecture, with well-defined APIs for network functions to offer services or call on each other. This, along with the cloud-native service mesh, enables rapid manipulation of your 5G core, whether for integrating new network functions and third-party applications, rapidly scaling, or deploying per-enterprise slices.
- **Cloud agnostic**, so you can deploy anywhere. Because the infrastructure is abstracted, you can eliminate the hardware dependencies.
Open is the new cloud model

To address new demands with the power of openness, scale, agility, efficiency, and automation, our solutions incorporate containers in a microservices architecture.

Powered by a modular CI/CD solution, we deliver our software in a secure, automated fashion, providing end to end automation for deployment, acceptance testing, and promotion of those applications according to a customer’s choice on any central, regional & edge clouds, and both private & public clouds.

In addition, we built our products with open APIs in order to inherently integrate into a multi-vendor ecosystem and follows best practices and industry standards when adopting/building APIs. We provide customers with a cost-efficient and rapid way to run Nokia workloads regardless of where they are in their cloud journey. This comes without lock-in on cloud platforms and with the ability to migrate workloads swiftly, across the entire cloud value chain including Software (SaaS), Platform (PaaS), Containers (CaaS), Network (NaaS) and Infrastructure (IaaS) as a service.

Last, we’re actively working with 3rd party cloud vendors to help CSPs:
- Modernize network and IT infrastructure across hybrid cloud and edge environments.
- Maximize capital efficiency and simplify OPEX on network deployments
- Unlock new, diversified revenue streams

Rethink the art of the possible
Reinvent business models
Rejuvenate market positioning
Nokia’s complete cloud native architecture
DISH chooses Nokia cloud-native, 5G standalone Core software to build U.S. 5G network with scale, performance, and efficiency

The deal follows months of joint testing as Nokia and DISH proved their respective “any cloud” capabilities in multiple cloud environments, along with Nokia’s ability to integrate and deliver a fully cloud-native, containerized, end-to-end solution.

The agreement includes subscriber data management, device management, packet core, voice core, as well as integration services. Nokia delivers and integrates cloud-native products for DISH’s 5G standalone, slicing, roaming and Voice over Wi-Fi.

These products provide DISH the speed, agility, intelligence, and security to deliver new 5G-era services, while cost-effectively managing its network with near zero-touch automation and adherence to Service Level Agreements.

“It might sometimes be counterintuitive, but we have zero tolerance for anything that is not pure cloud-native, and Nokia has gone through multiple checks. We have tested Nokia and other vendors extensively on the VMware platform and what we liked about Nokia was that they can work on different platforms.”

“VMware is our reference design and current choice, but we have the responsibility to be multicloud and Nokia has been tested in those other cloud environments.”

MARC ROUANNE, DISH NETWORK CHIEF NETWORK OFFICER
About Nokia

We create technology that helps the world act together.

As a trusted partner for critical networks, we are committed to innovation and technology leadership across mobile, fixed and cloud networks. We create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Adhering to the highest standards of integrity and security, we help build the capabilities needed for a more productive, sustainable and inclusive world.

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