

The image shows a person from behind, sitting on a dark rooftop or ledge at night. They are wearing a dark sweater and light-colored pants, and are using a laptop. The laptop screen displays a video call with an elderly couple. The background is a blurred city skyline at night, with many lights creating a bokeh effect. A large white diagonal shape cuts across the upper right portion of the image.

NOKIA

Enjoy new levels of customer loyalty with automated network self-healing

Use case

Communications Service Providers (CSPs) strive to offer the highest standards of service availability. 5G makes this effort even more important, as the technology enables exciting new services based on powerful capabilities like Ultra Reliable Low Latency Communications (URLLC) which go far beyond traditional reliability requirements. CSPs can deliver this by adopting a web scale approach for automation of their networks.

Challenge

As competitive pressures grow, winning new subscribers and strengthening the loyalty of existing ones is taking on new urgency for CSPs. The roll out of 5G is also creating immense opportunities to broaden the subscriber base and diversify the CSP business with innovative services.

Any service outage is a major issue for subscribers. Therefore, deploying a resilient network that can offer consistently high availability for every service is a powerful way for CSPs to build trust in their brand.

By separating processing functions from the underlying hardware, cloud and web scale technologies offer new ways to keep networks running. The web scale cloud allows a software design that uses a huge number of small, easily replaceable modules – with tiny failure groups. If any individual module fails, it can be recovered before affecting the overall service.

This creates a dynamic network that reacts in real-time to external events and network internal failures, fixing any problems in the quickest possible time and avoiding service interruptions for subscribers.

CSPs can take full advantage of self-healing capabilities by changing from a network element approach to a web scale cloud approach, then adopting the corresponding infrastructure automation techniques to create a more stable service platform. A major part of this is developing a strong data center approach to networks, using 5G software designed as Cloud-native Network Functions (CNFs).

In addition, the cloud-native approach of decomposing software into microservices managed through their APIs allows the orchestration layer to achieve very fine control. Should a more generalized failure occur, service orchestration can coordinate the overall recovery automatically.

Solution

A web scale deployment maximizes the potential for network software to heal itself and recover gracefully from failures. Nokia core network products have been designed from the ground up to support that model as CNFs deployed on web scale cloud, whether public, private or hybrid. The same business logic software can be deployed as traditional Physical Network Functions (PNF), or as Virtual Network Functions (VNFs) in an ETSI NFV MANO environment – so that no matter where the CSP is on their cloud journey, there is a path to a truly cloud-native network with Nokia core products.

Nokia also offers orchestration products, such as Nokia Digital Operations Center, that run higher-level monitoring and healing of the network as needed.

This provides CSPs with a more resilient network that can heal itself quickly even under high traffic loads, before subscribers and end users experience any consequences.



Benefit

- **Subscriber satisfaction and loyalty** – real-time, automated action keeps services running reliably, ensuring excellent customer experience at all times.
- **Reduced costs** – OPEX is reduced because the network automatically restores itself without staff intervention. Personnel can later be deployed to fix any long-term issue that caused the problem.
- **Increased brand value** – bulletproof networks result in a higher brand value for the CSP.

Result

Failures that prevent the use of network services can be a big issue for subscribers.

With a web scale cloud approach to core automation, the network continuously self-heals any failures at a fine level of granularity, using the massive redundancy of the cloud. With higher service availability, subscribers trust their CSP more, allowing it to build a better brand.

Additionally, network staff are not engaged fixing most network faults, allowing the CSP to employ them to develop other innovative services with high reliability for subscribers.



About Nokia

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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