Bell Labs Consulting

Advancing service reliability: Where did my 9s go?

Quick take

The recent pandemic highlighted the critical importance of communication services in our interconnected world. This also exposes the vulnerabilities of communication systems, putting their reliability to the test. With the increasingly vital role communication services play, it is more important than ever that they become more reliable and secure.

Bell Labs Consulting presents Advanced Service Reliability, a qualitative and quantitative analysis that provides a multi-discipline assessment of end-to-end (E2E) services to identify and resolve architecture and operational reliability issues. It provides prioritized actionable recommendations for service design and operations issues according to industry best practices that will help improve service reliability.

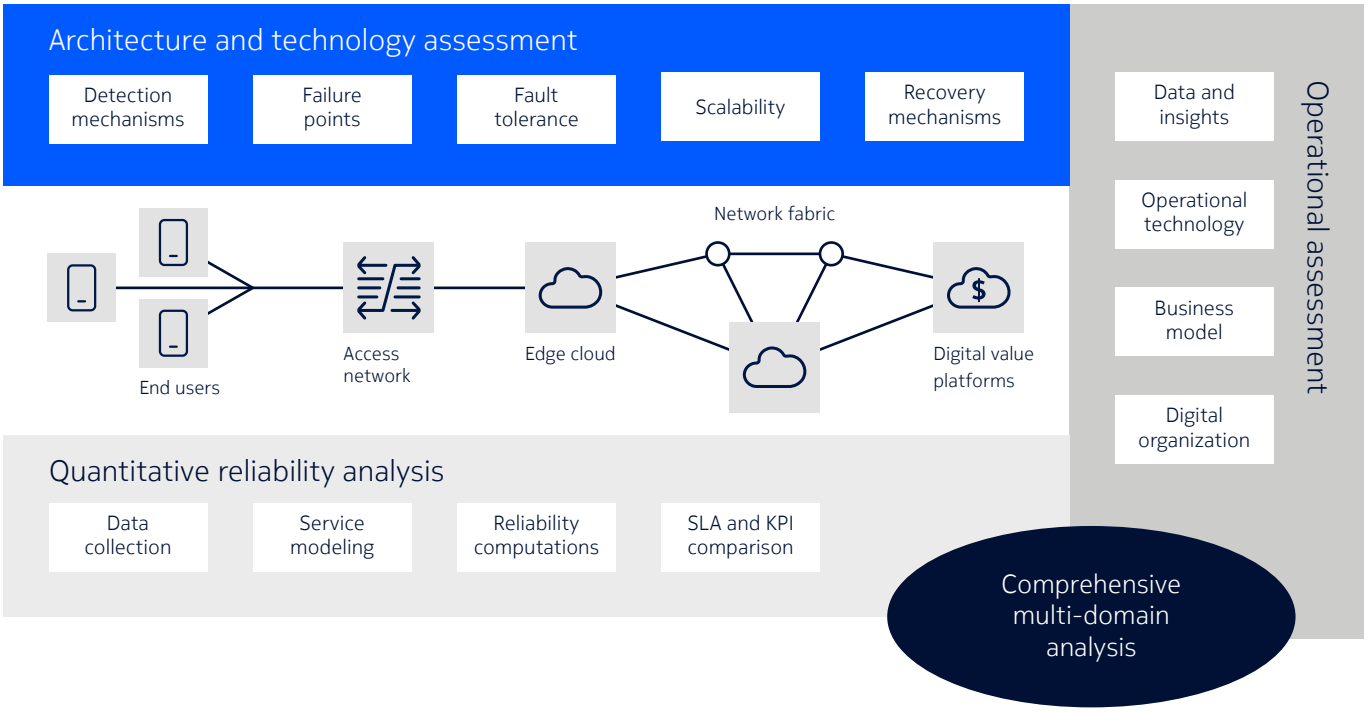
Operator challenge

Despite investments in redundancy, reliability has been hard to manage and achieve across the entire service chain while end-users are becoming more dependent. Major outages are not only revenue losses, but also cause bad press and brand erosion.

Bell Labs Consulting solution

A multi-discipline assessment of E2E services consists of:

- Architecture and technology scan of the network covering failure points, fault tolerance, scalability and detection and recovery mechanism.
- Operations assessment covering organization readiness, operations technology, data readiness, performance, and support readiness.
- Quantitative analysis covering service reliability modelling, reliability computations, SLA and KPI comparisons.

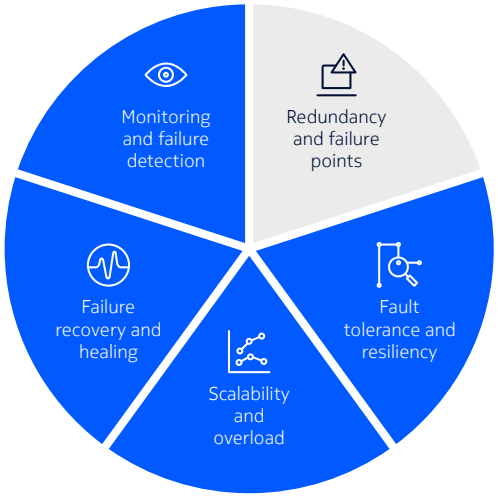


Architecture service reliability methodology

Implementing redundancy only delivers one piece of the puzzle. Building a reliable service requires adherence to a set of architectural principles with the ability to:

- Detect failure.
- Remove single point of failures.
- Detect and manoeuvre around failure points.
- Handle sustained and peak load.
- Recognize that an application is not optimally operating.

Service reliability: Architectural principles



Operations service reliability methodology

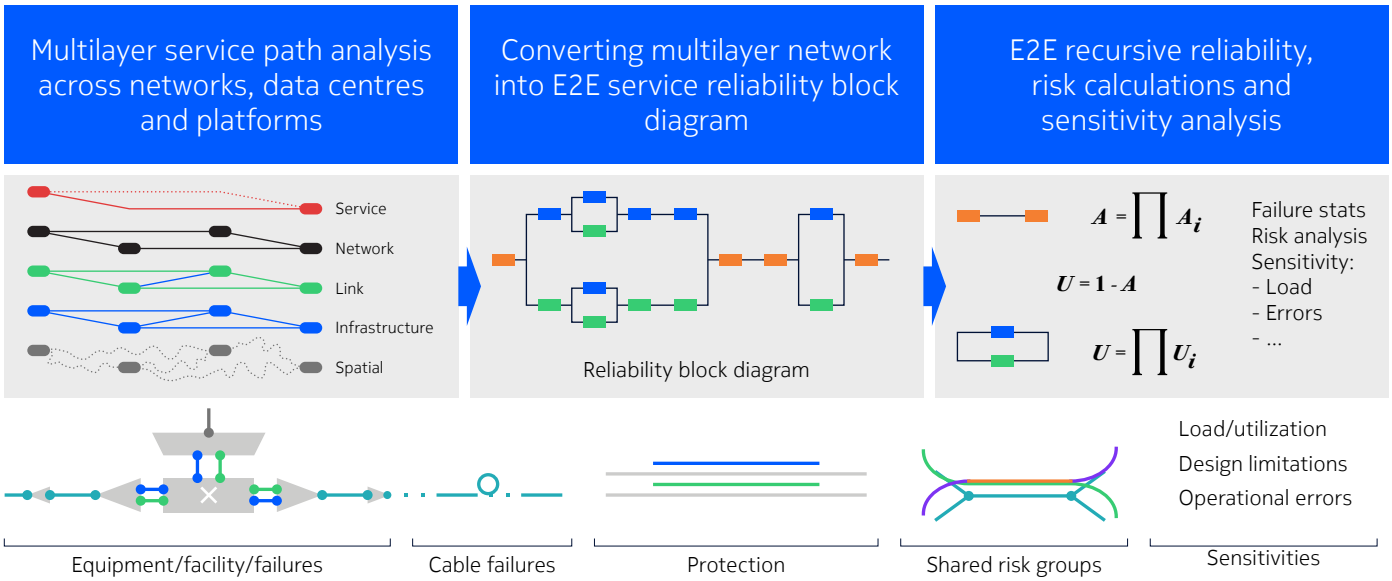
Assessment of reliability readiness across operations lifecycle covers:

- Roles, responsible, accountable, consulted, and informed (RACI), interfaces, documentation, and knowledge.
- Change management processes.
- Business continuity procedures.
- Service assurance processes.
- Performance and capacity management.
- Maintenance, support, and vendor agreements.

Operational reliability dimensions

Bell Labs Consulting

Quantitative service reliability methodology



A Quantitative service reliability methodology using a Bell Labs Consulting proprietary model covers:

- Multiservice path analysis across networks, data centers, and platforms.
- Multilayer E2E service reliability block diagram analysis, incorporating models for advanced aspects such as Operational failure causes and resource load.
- E2E recursion reliability, risk calculations and sensitivity analysis.

> "This has been a great collaboration so far. Not only with the Mobile Reliability audit, but now also with the recent study."
>
> European Tier 1 service provider Chief Technology Officer, June 2023

For further information please contact us at info.query@bell-labs-consulting.com

Learn more about Bell Labs Consulting at https://www.bell-labs.com/consulting/

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.

Nokia OYJ
Karakaari 7
02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Document code: 889850 (May) CID#213965