



Assurance gets mission critical



Growing value of service assurance

In the next 10 years, assurance products will underpin the most important new revenue and cost-reduction initiatives for communication service providers (CSPs). Figure 1 highlights the growing value of assurance to CSPs as well as the significant new assurance capabilities that will be required.

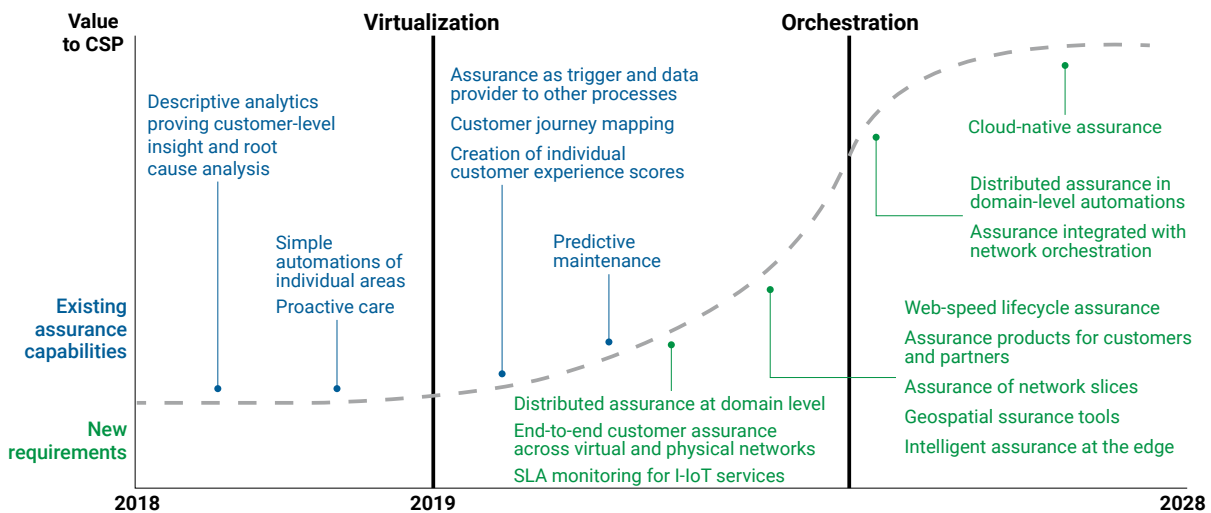


Figure 1: Time and value curve for assurance

Existing assurance capabilities (shown above the gray line) have passed through the early stages of the “analytics maturity cycle,” suffering typical issues, including the overpurchasing of capabilities without the headcount, capabilities or processes to take full advantage of them. Additionally, articulating the true financial value of solutions can be hard—exacerbated by the wider issue of putting measurable value against customer experience improvements, which leads to internal questions about the value of investing in new features.

CSPs have little choice but to invest in a mature set of existing capabilities plus many completely new capabilities (shown under the gray line) to underpin the rollout of 5G and SDN/NFV.

Eight main factors are creating the need for these new capabilities:

5G deployment: Customer assurance needs to be extended across new virtual and legacy networks.	Edge computing Intelligent, lightweight assurance will be required at the edge to understand customer behaviours and needs
SDN/NFV virtualization: Distributed network assurance is required to understand inter- and intra- domain issues. Virtual assurance products need to be dynamic to scale with changing network topologies.	Massive MIMO Geospatial network assurance tools will assure complex beamforming technologies
SDN/NFV orchestration Assurance functions will provide the insight for automations across the network, as well as the decisioning needed to create and then select the most appropriate automations	Network slicing End-to-end assurance of each network slice will be required
Cloud deployment Assurance needs to support high levels of granular monitoring and be containerized	New product development (e.g., IoT) Assurance will drive the web-speed lifecycles of new products. Customers and partners will require dynamic SLA management and monitoring—plus, assurance tools of their own.

Data challenges will multiply with these new assurance requirements

The challenge of collecting clean and complete data underlies all analytics and AI initiatives. However, it is particularly acute in the assurance domain, which already uses the highest volume and velocity data found anywhere in the CSP's network. A good number of the new developments in the 5G, SDN/NFV environment will exacerbate existing issues:



5G deployment—New network deployments increase the complexity of collecting data to give an end-to-end view of services across physical and virtual networks.

If CSP selects a single vendor for their initial 5G rollout to enable speedy deployment, this will create more data silos.



SDN/NFV virtualization—A single view of services across networks for customer assurance will be needed at the service orchestrator level.

Distributed assurance will also require coordinated data sets between the domains for insight.



SDN/NFV orchestration—Automation, and the machine learning that will power it, need clean, usable data sets.



Network slicing—A single view of services across network slices will be needed for customer assurance.



New product development (e.g., IoT)—A new data set will be required for SLA management. Customers and partners will also require their own assurance products.

EXFO Ontology solves these data challenges

EXFO Ontology is a graph-based, real-time, active topology platform that can power next-generation network, service and customer assurance applications.

The graph-database approach combined with a proprietary pattern-matching inference/rules engine models relationships between the data stored in multiple, siloed systems for network management (NMS/EMS), billing, assurance, fulfilment and CRM. It then maps those relationships into an accurate representation of services and their underlying virtual, logical and physical resources.

This enables:

1. A real-time service topology across legacy, physical, logical and virtual service components which will power next-generation service inventory and assurance functions
2. A complete view of service elements, at all layers in the infrastructure for monitoring and root-cause analysis
3. The topology view to support visualization, troubleshooting, workflow and data alignment for the network operations center (NOC), service operations center (SOC) and care systems
4. Close integration with the OSS/BSS—required for functions such as order and ticket management
5. A high degree of automation in virtualized environments driven by higher quality data within each environment on a range of sources (VIMs, orchestrators, data centre management and the OSS)

To learn more about EXFO's Ontology solutions and how they can help you manage and federate your inventory systems, please visit:

www.exfo.com/en/products/service-assurance/network-topology-management/

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