

Award-winning service assurance for a disruptive virtualization transformation

Delivering superior customer experience in a 5G world

Fully virtualized NFV service assurance for Europe's first full telco cloud network

Three UK is a service provider leading the path to 5G by transforming their mobile network to a virtualized architecture. Dedicated to giving customers a quality, reliable experience and addressing the industry issues that frustrate them, Three's network covers 99% of the UK population and carries 28% of the UK's mobile data traffic. Three UK is also part of the CK Hutchison Holdings Ltd group of companies which has mobile operations in 11 countries.



Three.co.uk

Network functions virtualization (NFV) is a key pillar of Three UK's digital transformation to support faster service launch as well as greater customer experience and satisfaction. In order to maximize network resource utilization, reduce operation and maintenance (O&M) costs and be better equipped to respond to future industry changes, Three UK developed a network transformation strategy aimed to fully virtualize its traditional networks using NFV/SDN.

In addition to new promises, network functions virtualization (NFV) also brings new challenges, such as ensuring subscribers' quality of experience (QoE) and finding the root cause of issues in a fully dynamic environment.

To manage these challenges, Three UK partnered with EXFO Astellia for its fully virtualized NFV service assurance solution. The solution is business critical, not only to monitor network functions virtualization (NFV) and manage QoE but also to drive network performance while ensuring customer satisfaction and new revenue streams.



Prasath Jagathrakshakalu, Hutchison Three UK – OSS Technical Design Authority and Thierry Jacq, EXFO – Product Line Manager, Monitoring & Troubleshooting



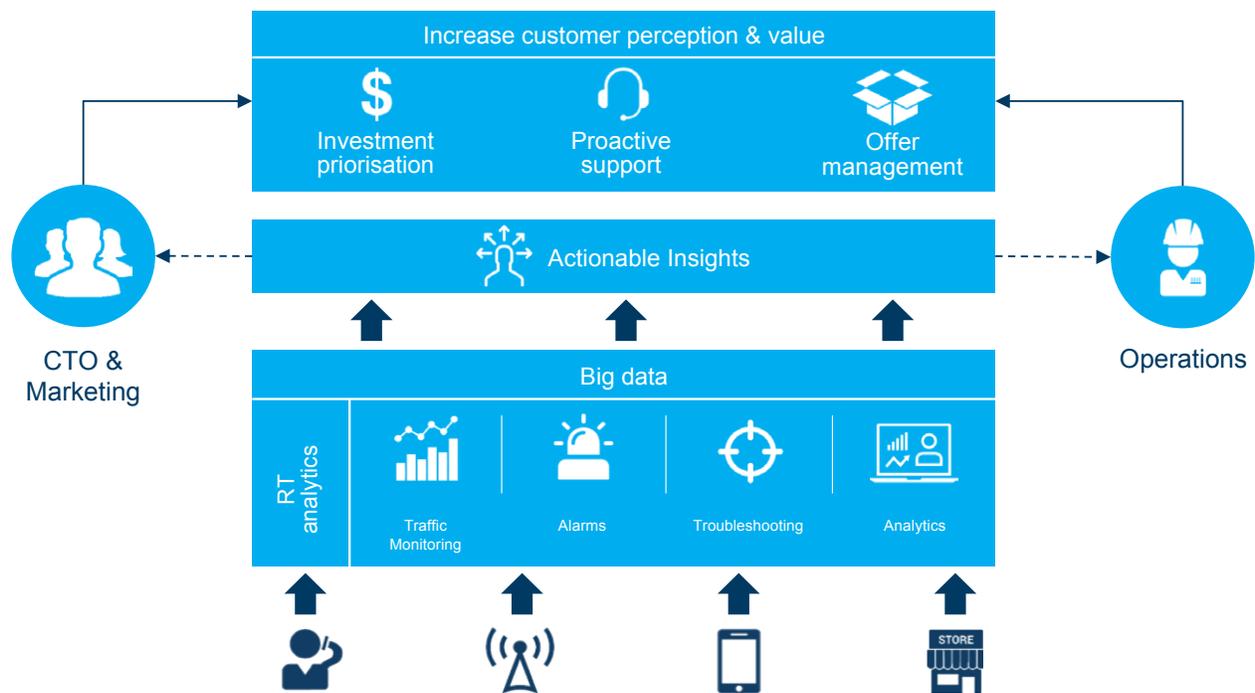
EXFO Astellia helps build upon our already excellent customer experience by deploying the capability to monitor the performance of services and customer experience on our new virtualized technology.

–Adam O'Keeffe, Head of OSS Transformation, Three UK

EXFO Astellia's development of the orchestrated virtual probes is important, and strongly positions the company as an innovator in service assurance for NFV/SDN.

–Anil Rao, Senior Analyst, Analysys Mason

Reliable network for maximized customer value

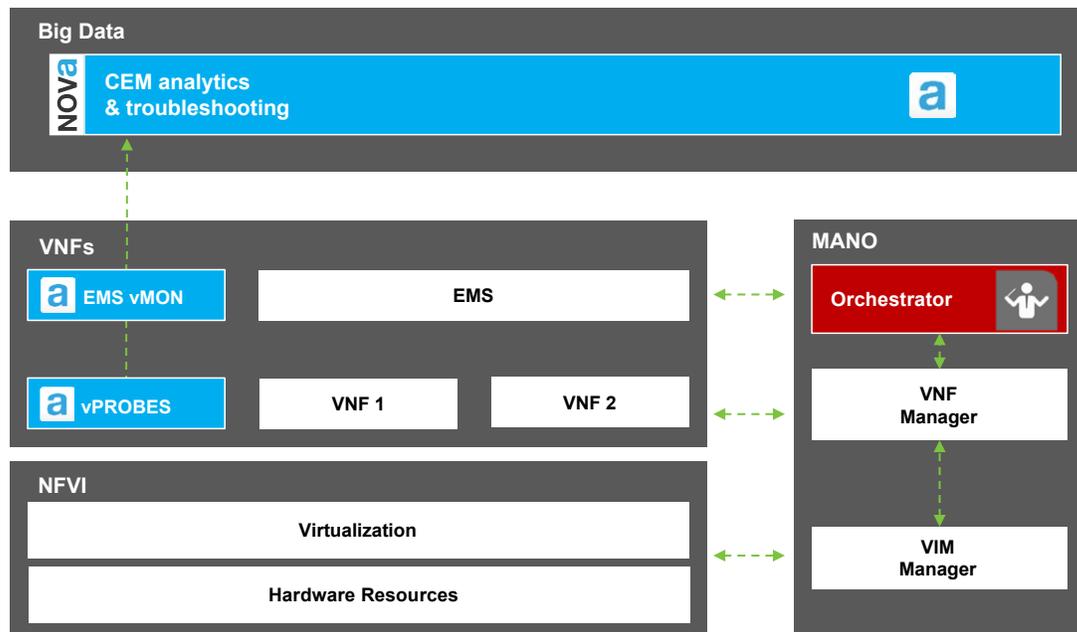


Key components of EXFO Astellia's solution

- **Virtualized probes** embedded in the virtual infrastructure: vProbes are MANO orchestrated (instantiation, healing, scale out and termination) and monitor NFV in real time, predict issues and assess QoE
- **Automated network inventory engine** to perform dynamic network topology discovery and accelerate fault discovery, root-cause analysis, and eventually closed-loop automation in hybrid physical-virtual environments
- **Cloud-based predictive big data analytics** and troubleshooting to:
 - Monitor E2E service quality (SQM) from a user perspective, including applications such as Facebook, YouTube, Instagram, VoLTE, VoIP, VoWiFi and legacy voice
 - Identify any quality degradations and prioritize service restoration based on the number of subscribers impacted
 - Isolate the root cause of any issue through demarcation based on **machine learning**
 - Provide actionable analytics to OSS tools to trigger the MANO to perform automation and orchestration
- **Out-of-the-box customer experience management (CEM) use cases** including churn prediction, customer segmentation and advanced QoE metrics for popular applications to support engineering, NOC, SOC, customer care and marketing
- **Professional services** backed by strong telecom and NFV expertise and a proven track record of 5,200+ audits and a deeply engaged and trusted advisor, always ready to go the extra mile

EXFO Astellia integrated its solution with the virtual traffic detection function (vTDF) to retrieve user plane EDRs, which avoids deploying user plane probes and reduces total cost of ownership (TCO). The big data solution was deployed using Microsoft public cloud, reducing CAPEX and creating a common data lake shared with other external systems.

Harness NFV with Nova



Award-winning solution

Network Virtualization Europe recently recognized the partnership's innovation with its Best Service Assurance Award, which is dedicated to solutions that offer quality of service that goes above and beyond. While discussing the high standard of award submissions from the nine vendors in this category, Sue Rudd, Director Service Provider Analysis at Strategy Analytics commented that "EXFO demonstrates support for a full range of network and customer facing real time and non-real time Service Assurance capabilities that are scalable at every layer."



About EXFO

EXFO (NASDAQ: EXFO) (TSX: EXF) develops smarter test, monitoring and analytics solutions for fixed and mobile network operators, webscale companies and equipment manufacturers in the global communications industry. Even stronger today with the acquisition of Astellia, our customers count on us to deliver superior network performance, service reliability and subscriber insights. They count on our unique blend of equipment, software and services to accelerate digital transformations related to fiber, 4G/LTE and 5G deployments. They count on our expertise with automation, real-time troubleshooting and big data analytics, which are critical to their business performance. We've spent over 30 years earning this trust, and today more than 2,000 EXFO employees in over 25 countries work side by side with our customers in the lab, field, data center and beyond.