



# Large UK Telecom Company

Gains Increase in Operational Efficiencies and  
Delivers Future-Proofed SDN and Connectivity  
Services with DX NetOps

## CLIENT PROFILE

Industry: Telecommunications, MSP  
Employees: 6,700

"Partnering with Broadcom has been  
key to the success of many  
of our managed network services."  
—Product Manager for Large UK  
Telecom Company

"This large UK telecommunications company has over 450 retail stores and is the second-largest mobile network operator in the UK, with over 30 million subscribers."

## Business

This large UK telecommunications company has over 450 retail stores and is the second largest mobile network operator in the UK, with over 30 million subscribers as of February 2020.

## Challenges

This large UK telecom company has traditionally offered managed network services using Cisco technology, however over the years the team has recognized the need for a multi-vendor capability. Using multiple network vendors typically presents any service provider with a challenge in terms of monitoring tools and the lack of a consistent portal (one pane of glass) for visibility and reporting.

Summary of challenges:

- Lack of a single portal for network and reporting capabilities
- Siloed, multiple monitoring tool sets
- Too much effort to build monthly executive reports

The team at this company recognized the many pitfalls of utilizing and managing multiple monitoring solutions, including lack of integrations, increased level of effort, time consuming data correlation, skilled resources needed to operate all tools, and limited end-to-end reporting capabilities.

To address these challenges, the team sought to establish the following capabilities:

- Improving the customer experience and delivering more service assurance
- Multi-vendor monitoring capabilities
- Consistent operations portal for WAN, LAN, core, cloud, and Wi-Fi services
- Consistent portal with reporting across multiple vendors

## Customer Environment

This telecom company delivers managed enterprise network services with products ranging from:

- Managed Wi-Fi—over 15,000 public access points
- Managed WAN and SD-WAN services—ranging from 20 devices to 5,000 devices
- 450+ retail stores worldwide

Figure A: DX NetOps offers GEO mapping that offers quick and easy insights into the health of SD-WAN sites and tunnels



- Session Initiation Protocol (SIP)
- Multi-cloud services
- Multi-carrier access and transport services
- Security solutions
- Internet services

## Solution

This telecom company uses high-scale, multi-vendor, SD-WAN monitoring solutions from Broadcom. With DX NetOps from Broadcom, the team at this company can do discovery and reconciliation of SD-WAN networks. They are now able to confidently and efficiently assure their enterprise networks and managed network services by leveraging the following industry-leading Broadcom features:

- **Single pane of glass visibility into multi-vendor SD-WAN health.** Through a single operational experience, DX NetOps offers insights into the health and performance of all SD-WAN deployments. The solution offers one-click, easy access to interface health metrics along with trending, baselining, and predictions.
- **End-to-end visibility.** With the solution, the team can understand the complete SD-WAN deployment, including site, connectivity, tunnels, and application SLA performance, for both the control and data plane.
- **Intuitive performance insights for easy triage.** The solution combines and correlates control plane, data plane, and flow data. DX NetOps enables the team to triage performance issues within the WAN using smart dashboards, innovative visualizations, and contextual workflows.
- **Smart route change detection.** The solution helps with identifying when and why route changes are occurring to validate that SLA policies are providing expected results, while appropriately leveraging the various WAN connectivity options and technologies.
- **Supports processing of all faults from SD-WAN vendors.** DX NetOps collects all network faults from multiple SD-WAN vendors. Leveraging network event correlation and patented root cause analysis, the solution keeps track of issues that affect service delivery.
- **Historical events.** The solution features a range of configuration options for processing historical events, including by number of days (between one and 30 days).

Figure B: DX NetOps features IPSLA dashboards that provide insights to track service quality with network performance metrics like latency and jitter

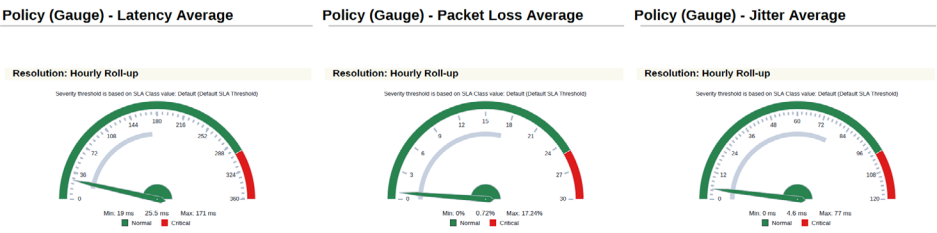
IPSLA Overview

IPSLA - Response Path Test Jitter

Quick Filter

Maximum MOS Rating - Average	Minimum MOS Rating - Average	Jitter In - Average	Jitter Out - Average	Latency - Average	Path Availability - Average	Percent Packets Lost - Average
4.34	4.34	0.3 ms	0.3 ms	17.9 ms	100%	0%
4.34	4.34	0.2 ms	0.3 ms	17.5 ms	100%	0%
4.32	4.32	0.3 ms	0.3 ms	149.4 ms	100%	0%
4.32	4.32	0.3 ms	0.3 ms	146.4 ms	100%	0%
0	0	0.3 ms	0.3 ms	149.3 ms	100%	0%
0	0	0.3 ms	0.3 ms	146.5 ms	100%	0%
0	0	0.3 ms	0.3 ms	17.9 ms	100%	0%
0	0	0.2 ms	0.3 ms	17.5 ms	100%	0%

Figure C: DX NetOps advanced visibility with in-context performance views of each WAN device.



- **Scale.** DX NetOps enables teams to monitor large-scale SD-WAN deployments that feature thousands of sites with hundreds of thousands of tunnels. The team can also easily scale the existing DX NetOps solution to meet the needs of network operations and future network and business innovations.
- **Integrations.** The team can effortlessly integrate the solution with third-party ticketing solutions, while sharing data and status with non-technical members.

Results

The Broadcom solution consists of DX NetOps Spectrum, DX NetOps Performance Management, and DX NetOps Virtual Network Assurance. This solution offers the latest SDN/SD-WAN monitoring capabilities and provides an optimal multi-tenant/multi-vendor solution for service providers. As a result, the solution meets the requirements of this large telecom company, while providing a consistent customer experience, from WAN to SD-WAN infrastructure. This also helps ensure that the existing investment in Broadcom solutions remains relevant. Plus, with DX NetOps Virtual Network Assurance for SD-WAN monitoring, the solution offers future-proofed capabilities to support not one, but many vendor monitoring capabilities.

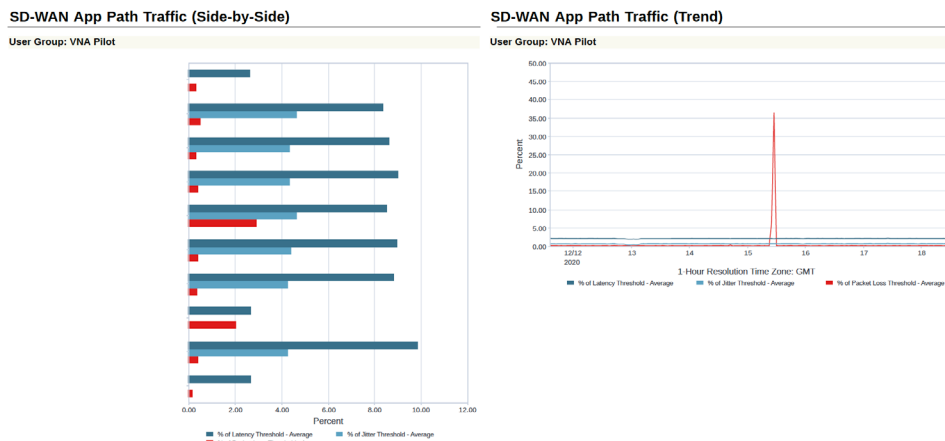
In order to help make the company more successful, Broadcom also delivered a number of solution enhancements:

- Customizable dashboards
- Regional and group views into health and performance
- Role-based access and visibility
- Multi-tenancy for personalized customer service and security
- Reduced level of effort to resolve issues
- Improved transparency and relationships with customers

Figure D: DX NetOps provides application-level insights with application path health and performance across WAN networks

SD-WAN App Path Statistics (Trend/Table)			
User Group: VNA Pilot			
Resolution: Hourly Roll-up			
Name	% of Packet Loss Threshold - Average	% of Latency Threshold - Average	% of Jitter Threshold - Average
	2.89%	8.51%	4.63%
	2.12%	0.33%	0%
	2.01%	2.65%	0%
	1.66%	0.33%	0%
	1.64%	0%	0%
	1.64%	0%	0%
	1.64%	0.33%	0%
	1.64%	0.33%	< 0.01%
	0.62%	2.63%	0%
	0.49%	8.34%	4.63%
Displaying 1 - 10 of 10			

Figure E: DX NetOps provides even further granularity with application path utilization and trend metrics across WAN networks



"Partnering with Broadcom has been key to the success of many of our managed network services."

- Improved customer satisfaction levels
- One portal for customer visibility
- Improved reporting
- Improved perception of services delivered
- Service assurance and peace of mind

"Partnering with Broadcom has been key to the success of many of our managed network services," said a product manager for the company's OSS Tools and SDN Gateway. "Their solutions continue to build and evolve at a rapid pace, delivering a consistent experience. At the same time, these solutions help our business continue to deliver high quality services with service guarantees. Their multi-vendor SD-WAN capability future-proofs our OSS monitoring and reporting capabilities, helping ensure a consistent experience across many of our evolving services."

Broadcom tools and their customizable network monitoring capabilities have enabled this telecommunications company to offer three SD-WAN offerings to meet their customers' and prospects' needs:

- **Gateway SD-WAN**—Fully managed and monitored underlay and SD-WAN overlay services
- **SD-WAN AIR**—Customer or third-party supplied transport, fully managed and monitored SD-WAN overlay services
- **SD-WAN Custom**—Fully managed and monitored underlay services, customer managed SD-WAN overlay



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