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SOFTWARE

CASE STUDY

NOS Scales Monitoring by 150%, Optimizes Service Levels During Pandemic with Broadcom NetOps Solutions

NOS

CLIENT PROFILE

Organization: NOS

Industries: Telecommunications and Media

Headquarters: Lisbon, Portugal

Employees: 2,000

CHALLENGE

• Ensuring service quality while contending with rapidly growing customer base and increased demand for network services during the pandemic.

SOLUTION

• DX NetOps provides unified visibility of complex, dynamic network environments.

• DX NetOps offers advanced capabilities for alarm management, automated topology mapping, and root cause analysis.

BENEFITS

• Established more automated, streamlined workflows that boosted staff efficiency.

• Gained the visibility to enhance performance and availability of critical network services.

Business

Based in Portugal, NOS is a leading communications and entertainment group. NOS delivers a wide range of communications service offerings to both residential and corporate customers. In addition, the company operates approximately 200 cinemas across the country. NOS supports the most advanced network technologies, including FTTH in its fixed networks and 5G in mobile networks.

Both corporate and residential customers are highly reliant upon the availability and performance of NOS' network services, which means delivering continuously optimized service levels is a key imperative.

"We serve many large corporations, including hospitals and banks, and for these organizations, reliable, high performance network services are a critical requirement—every day," explained Bruno Sousa, OSS Senior Engineer, Fixed Network and OSS Platforms Division, NOS.

Challenges

NOS continued to see rapid growth, acquiring new residential and corporate customers at a rapid rate.

"Within a few years, we went from having 20,000 to 50,000 different systems, and we now have 900,000 Wi-Fi hotspots, 1.5 million residential cable modems, and 1.8 million events," Sousa recounted.

"While this growth is great for our business, our prior monitoring tools began to pose increasing challenges," Sousa stated. "We needed to continue to scale our coverage, but it was very time consuming to add new systems to our monitoring environment."

This overhead created increasing issues as their network and network operations grew. The prior solution presented other limitations as well:

• **Limited coverage and visibility**. The tools lacked many key features like quality of service (QoS) and Multiprotocol Label Switching (MPLS) awareness. In addition, they didn't support many of the KPIs and elements the team needed to track, including fault, performance, flows, logs, configurations, and more.

Customer Environment

Residential and Consumer

- 4.8 million mobile customers
- 1.6 million fixed TV customers
- 1.8 million fixed telephony customers
- 900,000 Wi-Fi hotspots
- 1.4 million fixed internet service customers

Corporate

- Connectivity, internet, voice, and advanced solutions and services

Entertainment

- 200 theaters

- **Lack of visibility into new deployments**. Sousa and his team weren't able to gain unified visibility into both their traditional environments and their new SDN and SD-WAN deployments.
- **Lack of visibility into third-party networks**. The team fundamentally lacked visibility into the performance of networks they didn't own and operate, such as those of cloud providers and ISPs, yet that users rely upon constantly.
- **Reliability and support issues**. In addition, the team had been encountering performance and availability issues. Further, when these issues arose, they were having difficulties getting the vendor to provide the support they needed.

As the organization saw continued growth, their prior tools became unsustainable.

"In order to keep pace with this rapid growth, we needed to seek alternatives that offered the scalability and advanced capabilities our environments demanded," Sousa said. "Further, we wanted to ensure we found a vendor who would be on our side and truly partner with us."

The Solution

After an exhaustive assessment of vendors and solutions in the market, the team ultimately chose to work with Broadcom, which began a decade-long partnership. Over the years, the team has implemented a number of the company's network monitoring solutions, including DX NetOps, which is now being used for fault, performance, and network flow monitoring.

These advanced solutions proved indispensable as the operations teams needed to scale and respond to the dramatic changes ushered in by the pandemic.

"Like pretty much everybody, we were caught by surprise by the pandemic, particularly the first lockdown," Sousa recalled. "One day, we were working at the office; the next day we were working from home. Further, the same was happening for our residential customers, who were suddenly relying on their home network's connectivity all day, whether that was for video conferencing with colleagues, online gaming, staying connected on social networks, or watching movies. For our corporate clients, the changes, and increased demand, were also dramatic."

All of these changes ultimately created increased usage of network services, and required fast adaptation to altered usage patterns.

"More than ever, we needed to do effective capacity management and fast, efficient troubleshooting to enhance the capabilities of our teams and the performance of our business," said Sousa. "Having advanced solutions like DX NetOps was vital in enabling us to respond to these new realities."

With DX NetOps, the team has been able to establish unified visibility of their network, and do so in a vendor-independent way.

> **"With DX NetOps, our teams are able to track and report on these complex environments in a real-time fashion, which is a huge advantage for us. Now, we have one source of information for all our network elements, which is vital."**
> —Bruno Sousa, OSS Senior Engineer, Fixed Network and OSS Platforms Division, NOS

"We have complex networks with a range of different standards, protocols, and solutions from many vendors," Sousa revealed. "With DX NetOps, our teams are able to track and report on these complex environments in a real-time fashion, which is a huge advantage for us. Now, we have one source of information for all our network elements, which is vital."

Sousa continued, "Out of the box, DX NetOps gave us effective capabilities for alarm management, automated topology mapping, and root cause analysis. By being able to establish unified reporting, we've been able to do more effective capacity management and more efficiently troubleshoot when issues arose."

Results

By implementing Broadcom solutions, the team at NOS has realized an array of advantages.

Enhanced Staff Efficiency

DX NetOps offers improved visibility over the network, giving the team a vendor-independent, single source of truth. Broadcom solutions give NOS teams the ability to gain unified visibility across different network silos with different types of devices from disparate vendors. With this visibility, they've been able to optimize their workflows, so teams can work much more efficiently.

"This visibility is quite powerful," Sousa said. "By offering a unified solution that enables us to establish consolidated views across our network silos, Broadcom enables us to work in a more automated and efficient way. By offering advanced alarm and root cause analysis capabilities out of the box, these solutions helped us reduce mean-time-to-repair (MTTR). With these solutions, our existing teams can keep pace with the growth of our networks and customer base."

Enhanced Monitoring Scale

With DX NetOps, NOS was able to easily scale their network monitoring to accommodate for explosive network growth and demand for network services, without having to look for alternative solutions.

"We have plans to grow our network up to 2.5 million devices," Sousa explained. "We simply couldn't achieve this scale with the prior platform we had in place."

Optimized Service Levels

With Broadcom solutions, the team has been able to more effectively manage its dynamic, complex, and constantly evolving networks, so they can ensure these environments continue to perform optimally for clients.

This was particularly critical during the start of the pandemic, when service providers everywhere were faced with addressing unprecedented demand and workloads. DX NetOps enabled advanced capacity planning for residential customers, so the team could understand bandwidth issues associated with the increase in internet usage that arose due to work-from-home mandates.

> **"We now have a unified portal that delivers intuitive visibility and intelligent insights, across both legacy technologies and new SDN deployments... Now, troubleshooting in these complex network architectures is just as easy as addressing an issue with a static router or switch."**
> —Bruno Sousa, OSS Senior Engineer, Fixed Network and OSS Platforms Division, NOS

"Our number one KPI is always ensuring our services are available 24/7," stated Sousa. "With Broadcom solutions, we've been able to ensure optimized service availability for our clients."

Sousa continued, "We've also seen what it means to have a vendor who's on our side. Broadcom's staff is always helpful when we have questions or issues arise."

Unified Visibility Across Traditional and New Networks

The team at NOS continues to innovate and evolve, and Broadcom's solutions are helping support this evolution. For example, the team is moving forward with plans to roll out new SD-WAN offerings for corporate clients, and Broadcom solutions will help provide the visibility these dynamic environments require.

"We now have a unified portal that delivers intuitive visibility and intelligent insights, across both legacy technologies and new SDN deployments," Sousa indicated. "We can use our existing workflows and operational processes to troubleshoot new SD-WAN deployments. Now, troubleshooting in these complex network architectures is just as easy as addressing an issue with a static router or switch."

The NOS team is also continuing to explore new capabilities that Broadcom has unveiled.

"We're looking forward to leveraging enhanced NetFlow and telemetry features, and we're eager to explore solutions like AppNeta by Broadcom in the months ahead," Sousa offered.

For more information, visit the Broadcom Network Monitoring Solution page.

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