



The App QoE Company

OpNet and Sandvine

OpNet Reduces Congestion and Improves Customer Satisfaction Using Sandvine ActiveLogic



APPLIC LOGIC BENEFITS

- Rapidly relieve congestion
- Reduce calls to call center
- Improve customer satisfaction
- Support longer-term automation efforts
- Prepare for future B2B and SLA-driven services

Five automation use cases enable OpNet to improve application quality of experience (App QoE) for wholesale customers, setting the stage for future SLA-driven B2B services.

The word “transformation” can mean a lot of things, but for one Italian service provider, transitioning from retailer to wholesaler meant new customers, new mindset, new technologies.

In September of last year, Linkem Group acquired Tiscali and merged its retail operations with it. OpNet became Italy’s first 5G SA live network and one of the country’s largest fixed wireless access (FWA) providers, covering **70%** of the population nationwide. In addition, OpNet offers services for 5G Private Networks, Point-to-Point, and FTTH.

With its commercial deployment of 5G radio spectrum over fixed wireless, OpNet will accelerate the rollout of private networks and vertical applications across industrial logistics management, security (i.e., in airports and shipping harbors), smart-city construction, and other use cases.

“By becoming a wholesaler of FWA and optical fiber solutions, as well as radio connections and 5G private networks, we can open our network to ‘everyone,’ namely the several-thousand smaller companies, firms, and branch offices that lack the digital services needed to compete,” said OpNet CTO Cosimo Buccella, noting that smaller industrial districts and rural areas often have local ISPs that are too small to acquire frequency slices, or have standard operators that find it cost prohibitive to get fiber optics out into the countryside.

Figure 1

OpNet Services for Wholesale Market

FWA up to 1Gbps	5G Private network	Point-to-Point up to 6Gbps	FTTH
<ul style="list-style-type: none"> • FWA access allowing retail operators to provide broadband connection to final customers and small/medium enterprise (up to 1Gbits speed) • Possibility to integrate value added services (GBR, Static IP Address, etc.) 	<ul style="list-style-type: none"> • Services dedicated to private and public companies • Ad-hoc solution with scalable dimensioning basing on customer needs 	<ul style="list-style-type: none"> • Point-to-Point service up to 6Gbps symmetric with both L2 and L3 access mode • Tailor-made solutions 	<ul style="list-style-type: none"> • Fixed connectivity up to 1Gbps (guaranteed and symmetric) provided using own infrastructure or third parties

Getting More Out of 5G, Per Site

Wholesale solutions that deliver more sophisticated connectivity, as well as different service types and quality levels, meant OpNet needed to swap out legacy network equipment in favor of a core network that would support capacity demands for more advanced 5G services. As it did so, a certain phenomenon started to occur: **“Per-user usage doubled as people went from 4G to 5G,”** according to Buccella.

This increase was due to the increase in 4K streaming and full HD experiences people wanted when streaming content from Netflix, Amazon, Disney+, and other platforms that began offering higher-quality options.

In addition, OpNet was noticing an increase in streaming, which grew **as much as 25%** during certain events, such as soccer matches in October and November when the Soccer World Championships were underway. Because the midband spectrum for fixed wireless has limitations in frequencies, OpNet’s Operations and Engineering teams sought a solution that would offer more observability of network traffic, as well as a better understanding of how customers were benefiting from the capacity of 5G. This insight would help drive automation, improve their customers’ ability to optimize App QoE, and ultimately help Marketing with SLA-driven B2B services built around guarantees for uplink and downlink services.

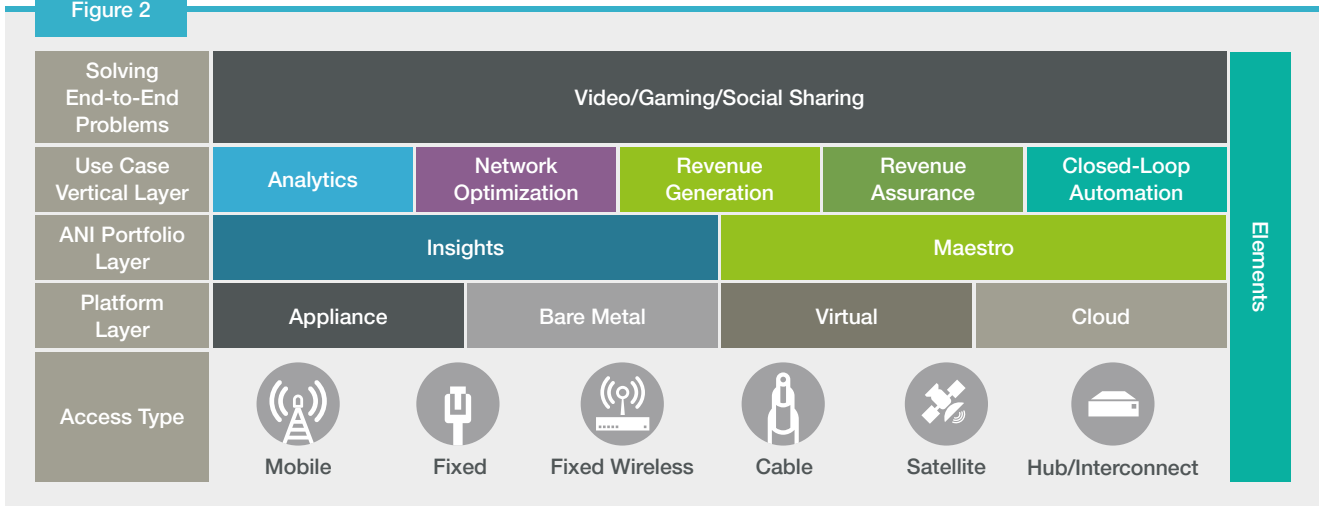
“The increasingly dynamic nature of both our network and the applications meant we could no longer rely on manual finetuning to optimize the network. We needed to know which applications were having the greatest impact on network resources, and how that translated in terms of the application quality of experience our customers were delivering to their end users,” said Buccella.


His teams found that network infrastructure-based solutions only delivered basic app inspection, simply reading counters on routers and switches without delivering deep analysis and visibility of the data and control planes, increasingly important amid encryption and the disruption of cloud.

Enter Sandvine ActiveLogic

In March 2022, OpNet found an answer in Sandvine’s ActiveLogic, a hyperscale data plane built for best-in-class traffic classification and QoE analysis. Using advanced machine learning techniques like clustering, neural networks, and gradient-boosted decision trees, ActiveLogic mitigates the impact of encryption for general traffic as well as VoIP, video, and VPNs. “In our 5G tender, we felt Sandvine proved more than anyone else that it would help us achieve our short-term goals to monitor and manage KPIs of the RAN with congestion relief on site, as well as get us to our longer-term goals of informing automation efforts and setting the stage for future B2B services and SLA-driven business models.”

Figure 2





Buccella notes that B2B customers, more than ever, value anything that identifies and quantifies what's delivered and helps assure they're delivering the quality they are contracted to deliver.

Identifying and quantifying the actual user experience is where ActiveLogic shines, getting under encrypted traffic to analyze and score App QoE over the network, with analytics-driven automation use cases that dynamically manage the network through policy-based inline actions that respond to actual network traffic conditions.

OpNet chose five automation use cases to maximize network performance and improve customer satisfaction:

Video QoE Analysis for a location deep dive into video usage to improve subscriber perception (e.g., video resolution, streaming health, video QoE score) and network performance (e.g., throughput, latency, packet loss) KPIs.

Video Streaming Management delivers a better overall experience across a broader set of customers during busy hours by managing usage thresholds and doing by-device resolution matching, optimizing bandwidth for different devices, without surpassing the bit rates needed for specific devices.

Performance Monitoring Analysis near real-time visibility and historical views measure and assess the QoE delivered by the network for any given application, transcending traditional network metrics with QoE scoring capabilities for throughput, packet loss, and latency.

Subscriber Service Analysis for metrics and insight into subscriber, application, device, QoE, and plan usage patterns to identify underserved customer segments and those with a high propensity to churn.

Intent-Based Congestion Management which manages network congestion based on intended application performance and App QoE parameters.

Not only did these use cases deliver on OpNet's goals, but they exceeded Operations and Engineering's expectations. "We rapidly relieved on-site congestion and improved customer satisfaction, without any change to KPIs. In fact, we've seen the amazing result that **no more calls have come into the contact center about buffering of video or other QoE issues,**" says Buccella, noting they sped up CDNs integration and reduced the outbound internet traffic, thus improving experience across a greater number of customers.

As shown in **Figure 3** on the following page, OpNet can now detect different types of traffic, as well as applications within that traffic, and even content within those applications. This level of visibility drives efficiency into how OpNet uses its sites to enhance the user experience for different applications. In **Figure 3**, the DAZN application kept popping up in OpNet's top-10 for traffic volume, and upon investigating why, it became evident there were surges on days popular soccer matches were being streamed at high volumes. "This helped us better manage congestion on RAN sites and video streaming throughput during busy times. **We were able to reduce the number of 4K and SD subscribers, while increasing the number of FHD subscribers – and all without triggering any customer complaints!**" according to Buccella.

With specific network QoE targets for individual applications in mind, OpNet has produced customized reports to get a better handle on the ever-changing demands of applications in video, gaming, social networking, and other categories. With the drive to further efficiencies and reduce Opex, there is also momentum to use insight gained for other purposes in its wholesale 5G business.



Figure 3

Example of video traffic visualization

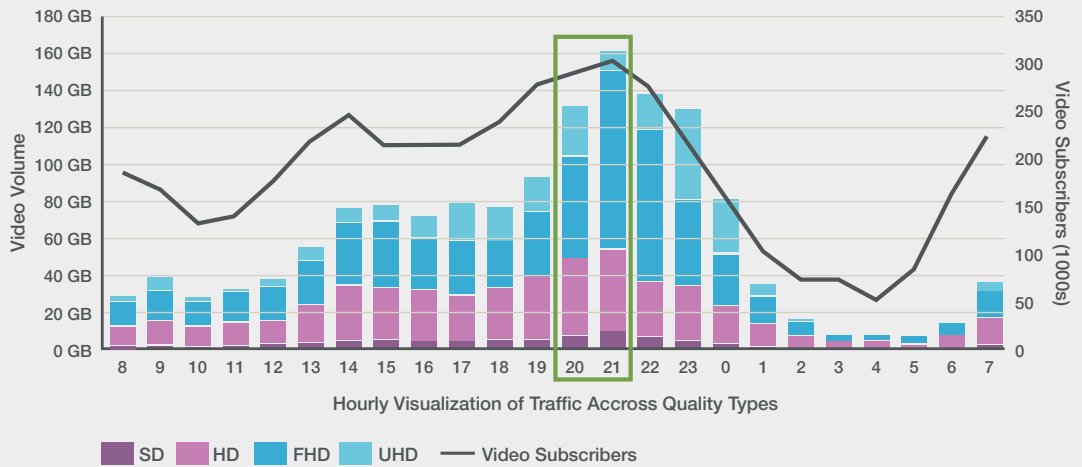
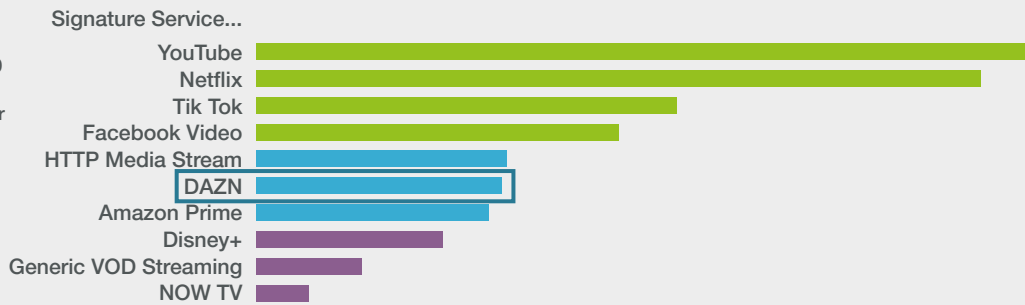


Figure 4

Example of traffic volume, with DAZN appearing in top-10 during 13 May streaming of soccer matches



“We want to offer services based around multitenancy and ActiveLogic’s multitenant, role-based dashboards will help us simplify the view of customer experience data, homing in on latency, the trip time of the packets, and other information that ultimately will be valuable to not only Planning, Operations, and Engineering, but also Customer Care and Marketing,” adds Buccella.

While Operations and Engineering are the primary roles accessing the information and leveraging the reports, the next stage of automation will not only lower Opex, but also provide data that can refine and tailor services, opening up new avenues for monetizing and building loyalty. “The results prove we made the right choice as we orient ourselves to the wholesale market, where we will be a point of reference for multiple stakeholders that will want easy access to increasingly complex connectivity solutions that will close the digital divide and advance services that will help Italy fuel its economy.”

To learn more about ActiveLogic, check out our [datasheet](#) and [set up a demo](#).



ABOUT SANDVINE

Sandvine's cloud-based Application and Network Intelligence portfolio helps customers deliver high quality, optimized experiences to consumers and enterprises. Customers use our solutions to analyze, optimize, and monetize application experiences using contextual machine learning-based insights and real-time actions. Market-leading classification of more than 95% of traffic across mobile and fixed networks by user, application, device, and location creates uniquely rich, real-time data that significantly enhances interactions between users and applications and drives revenues. For more information visit <http://www.sandvine.com> or follow Sandvine on Twitter @Sandvine.



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