SANDVINE

Service and Subscriber Analysis

Understand the delivered QoE of individual subscribers or subscriber groups

5G Sandvine's network intelligence and service innovation capabilities deliver critical user insights (i.e., slice, usage segmentation, application behavior/preference) for new service creation in the 5G value chain across consumer and enterprise markets.

SERVICE AND SUBSCRIBER ANALYSIS DELIVERS:

Proactive Identification
Diagnose and troubleshoot network issues before they become problems

Meaningful Metrics
Leverage insight into subscriber, application, device, QoE, and resource behaviors happening on your network

Actionable Insights
Use real-time monitoring to operationally understand how customer needs are being serviced

MARKET OVERVIEW

Network operators are always monitoring operation and performance quality to ensure they are meeting consumer standards and, therefore, are able to maintain high customer renewal rates.

However, their current efforts depend on traditional network key performance indicators (KPIs) across the entire network. In reality, operators are effectively unable to view the quality of experience (QoE) individual subscribers or subscriber groups are receiving, especially as it relates to performance issues.

As network access grows increasingly complex and oversubscribed, network operators need granular data to monitor individual users, subscriber groups, individual applications/services, and service category issues. These issues typically become buried under larger network quality issues, but are negatively impacting QoE, contributing to customer churn.

Table 1 highlights how the different services and application types are impacted with changes in network conditions. To combat poor customer experience in an environment that is becoming increasingly customer-centric, operators need to focus on proactively preventing user issues and troubleshooting them when they arise – all in real-time.
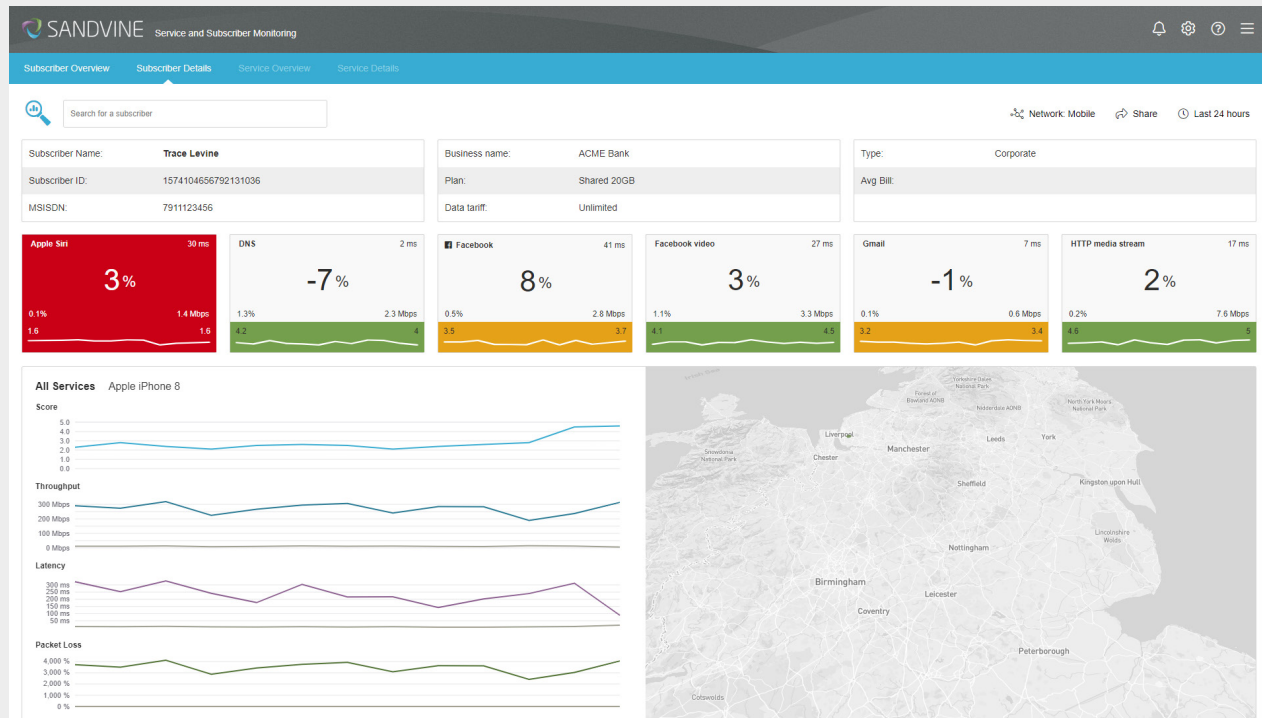
Application Type	Throughput	Latency	Packet Loss
Web	Needs short bursts of download performance	High latency leads to slow page load times	Packet loss can lead to slow page load times
Video	Sustained throughput delivers good quality	High latency is not usually a concern except for initial loading of video	Less sensitive to loss unless it affects throughput
Social Media	Needs short bursts of download/upload performance	High latency can slow interactive sharing experience	Packet loss can slow interactive sharing experience
Gaming	Most games do not require high bandwidth, cloud gaming does	High latency leads to lag in real-time games	Packet loss leads to lag in real-time games
Upload	Sustained bursts of upload performance	N/A	N/A
Download	Sustained bursts of download performance	N/A	N/A
Voice	Low throughput requirements	High latency leads to poor voice experience	Some loss can be tolerated, high loss leads to perceived latency

Table 1: Quality of experience metrics by application category

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Figure 1

Understand a subscriber's network experience, usage, top application, and QoE at a glance

SOLUTION OVERVIEW

Sandvine's Service and Subscriber Analysis solution monitors service performance and subscriber QoE.

Metrics affecting overall experience can be summarized into four areas:

- **Application Performance:** ScoreCard QoE for services used by customers
- **Network KPIs:** Internal/external round-trip time, packet loss, throughput, and goodput
- **Last-Mile KPIs:** Performance indicators specific to the access network
- **Device KPIs:** Device types can have impact on QoE with screen resolution, performance, or even known bugs

Beyond these metrics, Sandvine provides customers with a holistic view into subscribers and the network, enriched with contextual awareness such as device, application, content, location, and quality. At a granular level, operators gain insight into the performance of individual applications and application categories, cloud-based services, speed test utilities, individual protocols, and more.
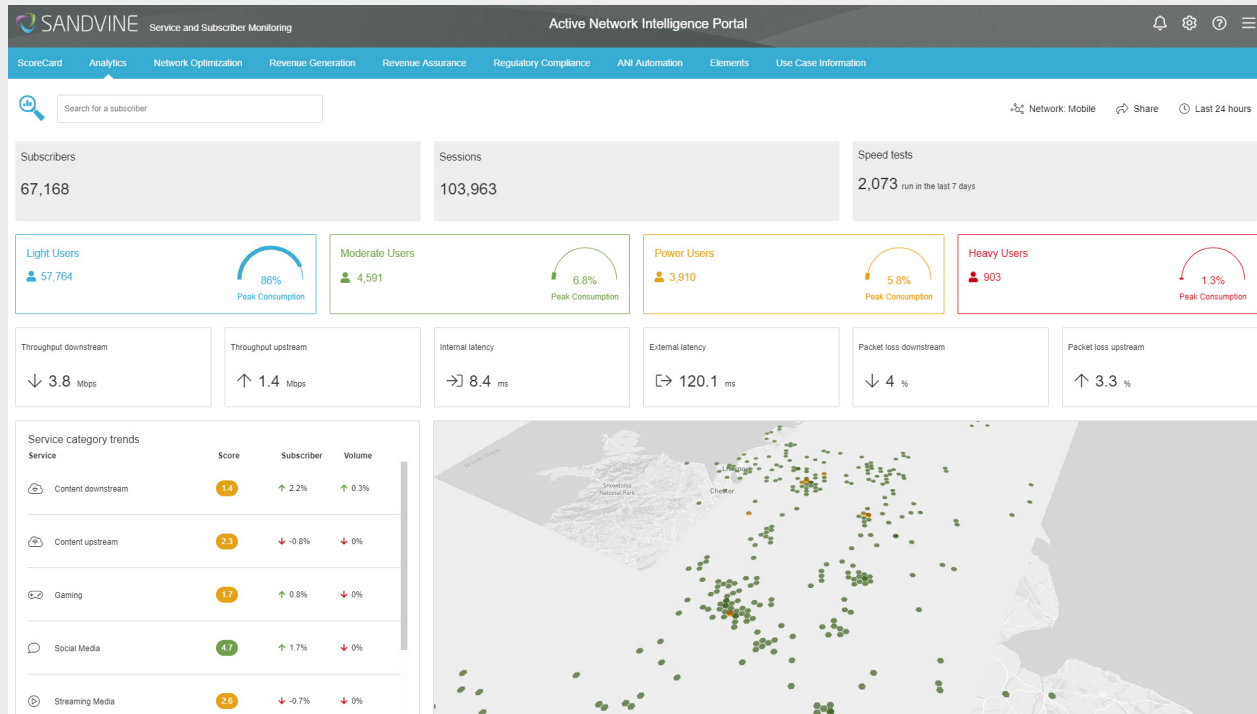
This use case also leverages Sandvine's unique QoE scoring for measuring the quality delivered for popular applications, by which customers traditionally measure their experience, including video, web, social, VoIP, gaming, upload, and download.

Available in real-time, this information empowers operators to take action and troubleshoot problems before quality issues pose a threat to customer satisfaction. As an added benefit, Sandvine's solution logs performance information, creating a valuable case history in the event that a customer calls to dispute the delivered QoE.

Figure 2

Drill into individual elements and understand performance metrics by plan, device, application, location, and software

When implemented, operators can monitor service performance and user QoE in near real-time, informing corrective action, resulting in improved QoE, reduced customer churn, and competitive differentiation based on customer experience within the market.

ABOUT SANDVINE

Sandvine's market-leading, cloudified Service Innovation and Intelligence portfolio helps customers deliver exceptional digital experiences and grow revenues. Our ability to classify over 95% of network traffic across mobile and fixed networks by user, application, device, location and other parameters creates uniquely rich, real-time network and service data. We then apply machine learning-based contextual insights to improve performance and enhance digital services. For more information, visit **http://www.sandvine.com** or follow Sandvine on Twitter **@Sandvine**.

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