SANDVINE

Regulatory Quality Monitoring

Protect consumers by monitoring quality standards for all networks

REGULATORY QUALITY MONITORING DELIVERS:

Quality KPIs
Measures three key performance indicators (KPI) for consumer broadband: throughput, latency, and packet loss

Complete Network View
Displays scoring for all traffic, all the time, with no sampling bias

Contextual Awareness
Facilitates root cause analysis for quality of experience (QoE) issues through contextual awareness

Application-Specific Scoring
Applies KPIs to an application transformation matrix to display how subscriber performance will translate to QoE for web traffic, video streaming, social networking, gaming, up/download, and voice applications

MARKET OVERVIEW

Telecommunications regulators are struggling to define quality metrics for broadband performance that can be measured consistently across multiple access types (i.e., DSL, Cable, Mobile, and WiFi) and capture the actual performance quality delivered during peak usage times.

Today, the subscriber experience is primarily driven by data performance and not voice. Therefore, measurement tools need to be modernized to this new era where application types and content categories have different performance requirements. In the Global Internet Phenomena Report, video is reported to be more than 60% of traffic; a key reason for the increase is that video is incorporated into many of the applications subscribers value most. To capture the individual user experience, quality monitoring solutions need to be aware of these mash-up applications and the requirements for phenomenas like video, and have visibility into the devices that are being used by subscribers.

With OTT-applications, consumers are becoming increasingly sensitive to degrading QoE when they are paying for content being delivered to them. The increasing sensitivity at the subscriber level drives the regulators to enforce a "Truth in Advertisement" policy and a bare minimum for bandwidth delivered to consumers. For operators, the challenge is to find one solution that can measure their performance accurately through their whole footprint, and not solely rely on speed tests from third parties.

Figure 1

OFCOM has previously implemented Truth in Advertisement policies in the UK. Speeds used in broadband advertising should be based on the download speed available during peak hours to at least 50% of customers, instead of the former 10%, to reflect reality

ISP/s	Technology	Old Advertised Speed	New Advertised Speed
BT, PlusNet, Sky & TalkTalk	ADSL2+	14-17 Mbit/s	10-11 Mbit/s
BT, EE, Plusnet, Sky & TalkTalk	FTTC	38 Mbit/s	36 Mbit/s
BT	FTTC	52 Mbit/s	50 Mbit/s
BT, EE, Plusnet, Sky & TalkTalk	FTTC	76 Mbit/s	63-67 Mbit/s
Virgin Media	DOCSIS/cable	50 Mbit/s	54 Mbit/s
Virgin Media	DOCSIS/cable	100 Mbit/s	108 Mbit/s
Virgin Media	DOCSIS/cable	200 Mbit/s	213 Mbit/s
Virgin Media	DOCSIS/cable	350 Mbit/s	362 Mbit/s

SOLUTION OVERVIEW

At the core of Sandvine's Regulatory Quality Monitoring solution is Sandvine's ScoreCard, which gives an executive view of how the network is performing and how popular services and applications are being experienced by end users.

For regulators who have deployed a nationwide monitoring solution, ScoreCard shows all operators' network performance while measuring the actual performance delivered, regardless of the access technology being used. This view gives regulatory bodies the complete picture needed to make sure that operators are being honest in their advertisement and that consumers are getting the service quality they pay for.

This contextually aware solution scores QoE based on key factors such as device, application (and category), and location. With Sandvine's industry-leading traffic classification, key performance indicators are being measured across all traffic, all the time, so even when it becomes encrypted, the QoE can be measured correctly.

Quality of Experience Metrics

ScoreCard measures three key metrics that can be used to determine the experience on a per-application, per-subscriber level. These three metrics have been called out by the United States Federal Communications Commission (FCC) as well as the European Union's Body of European Regulators for Electronic Communications (BEREC) as KPIs for measuring subscriber experience.

Throughput: Every 250ms, ScoreCard measures the upload and download traffic performance. Sub-second, frequent measurements provide a better view of application performance versus the one or five minute averages collected by other systems.

Latency: Each session/connection's latency on the access and internet side is measured to determine if latency issues are related to the network operator's access network or the content provider's network.

Packet Loss: Each session/connection's packet loss on the access and internet side is measured to determine if packet loss is on the network operator's network or the content provider's network.

Figure 2

ScoreCard provides regulators with a complete view of the performance of operator networks inside a country and reports on three key KPIs: throughput, latency and packet loss

With Regulatory Quality Monitoring, operators and regulators get actionable insights into how the network is performing and a comprehensive view of the QoE being delivered to end users at all times.

ABOUT SANDVINE

Sandvine helps organizations run world-class networks with Active Network Intelligence, leveraging machine learning analytics and closed-loop automation to identify and adapt to network behavior in real-time. With Sandvine, organizations have the power of a highly automated platform from a single vendor that delivers a deep understanding of their network data to drive faster, better decisions. For more information, visit **sandvine.com** or follow Sandvine on Twitter at **@Sandvine.**

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USA
2055 Junction Avenue
Suite Number 105
San Jose,
CA, 95131
USA

EUROPE
Svärdfiskgatan 4
432 40 Varberg,
Halland
Sweden
T. +46 340.48 38 00

CANADA
408 Albert Street,
Waterloo,
Ontario N2L 3V3,
Canada
T. +1 519.880.2600

ASIA
RMZ Ecoworld,
Building-1, Ground Floor,
East Wing Devarabeesanahalli,
Bellandur, Outer Ring Road,
Bangalore 560103, India
T. +91 80677.43333

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