



OPENSIGNAL

The End-User Connectivity Experience: Closing the information gap and empowering policymakers, regulators and consumers

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Agenda

1. Opensignal Overview
2. QoS vs QoE: Shifting the Industry Mindset
3. Consistent Quality (CQ): A Better Way to Measure Real Experience
4. Global Network Excellence Index: Comprehensive Ranking System
5. Measuring Consistent Quality across different technologies
6. Summary

Global reach, global expertise, global insight



118 

operators in over 50 countries

billions 

of crowdsourced network data points collected

225+ 

Mobile, broadband and market
insight reports published in 2023

A long history of regulatory & institutional partnership

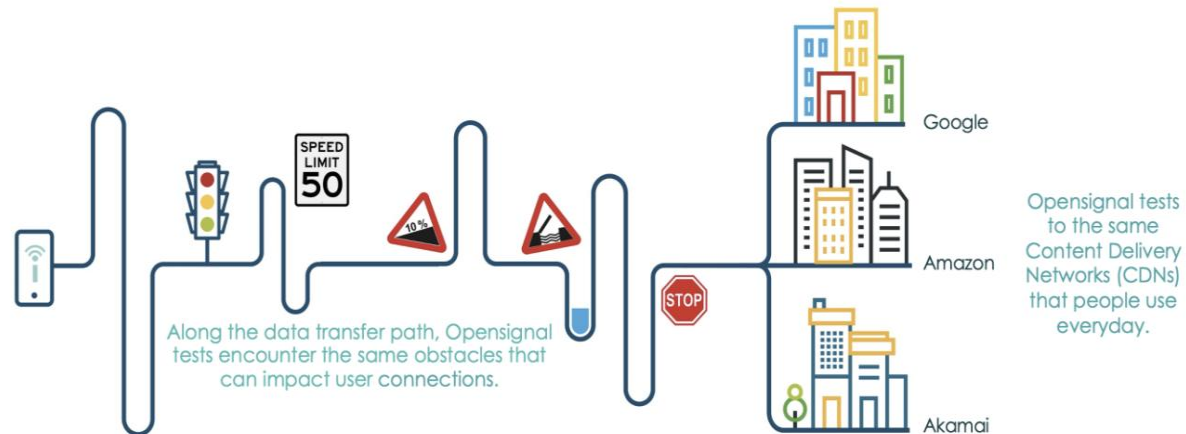


Revealing the truth about network experience

Real Network Experience

Real devices, real locations, real traffic to real endpoints

Opensignal tests follow the same device-to-CDN paths encountered by real users every day.



Methodology	Geographic reach	Network performance	End-to-end subscriber experience	Competitive data
Opensignal data	✓	✓	✓	✓
Server side testing	✓	✓	-	✓
Operator generated insights	✓	✓	-	-
Drive/walk testing	-	-	✓	✓

Opensignal: QoS vs. QoE — Defining the Difference

	Quality of Service (QoS) Network-Centric (Technical)	Quality of Experience (QoE) User-Centric (Satisfaction)
What it Measures	Technical KPIs of the network (e.g., bandwidth guarantee)	The end-user's perception and satisfaction with the service provided
Opensignal Metrics	Standard technical metrics like: <ul style="list-style-type: none"> - Download/Upload Speed (Throughput) - Latency, Jitter, Packet Loss 	Experiential metrics that correlate network performance to specific user activities: <ul style="list-style-type: none"> - Video Experience (Stalling, Quality) - Games Experience (Responsiveness) - Voice App Experience (Call clarity) - Consistent Quality
Data Source	Traditional testing and network probes	Crowdsourced, real-world data collected 24/7 from millions of users' devices
The Analogy	<i>The plumbing of the network (pipes, pressure)</i>	<i>The quality of the shower (temperature, consistency, enjoyment)</i>

Why “Good Enough” matters?

Streaming Video



YouTube

Buffer-free
streaming



Netflix

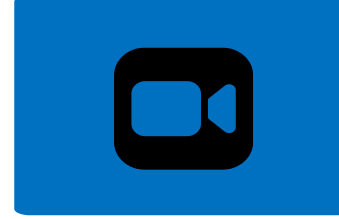
4K quality for
stunning visuals

Voice & Video



WhatsApp

Stable calls
without
interruptions



Zoom

Uninterrupted
meetings anytime,
anywhere

Web Browsing



Chrome

Quick loading and
efficient performance
guaranteed.



Safari

Smooth navigation
for seamless browsing
experience.

Social Media



Facebook

Instant updates
keep users
informed



Instagram

High-resolution
images captivate
audience attention.

Mobile Gaming



Fortnite

Low latency for
smooth
gameplay



PUBG

Stable
connection for
every match

Speed Isn't Enough: What Really Matters to Consumers?

How do we define it?

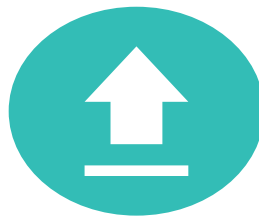
Excellent Consistent Quality (ECQ) – Evaluates how **consistently** networks support everyday applications such as video streaming, video calls, and gaming, ensuring a seamless user experience

Performance Thresholds



Download
Throughput

≥ 5
Mbps



Upload
Throughput

≥ 1.5
Mbps



Latency

≤ 50
ms



Jitter

≤ 12
ms



Packet
Discard Rate

$\leq 1\%$



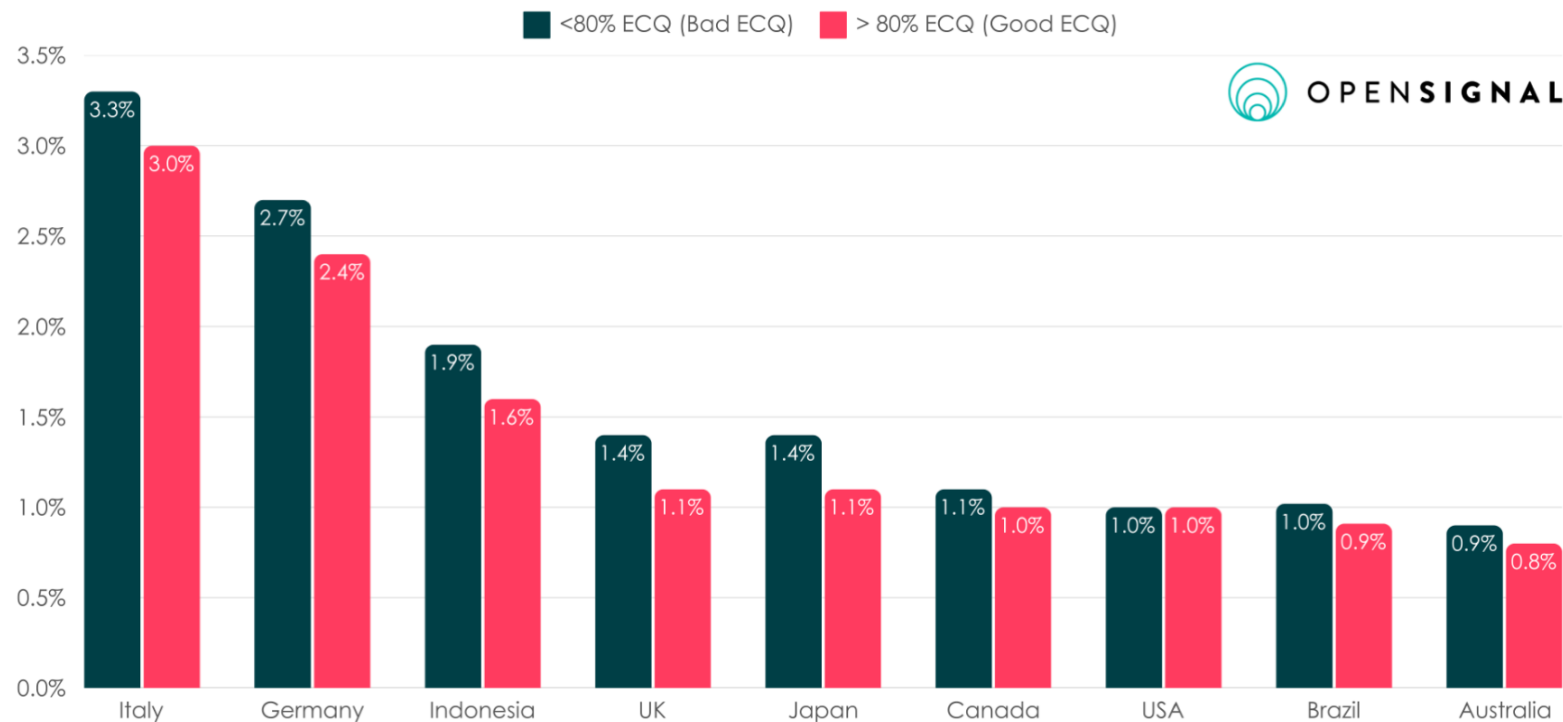
Time to
First Byte

≤ 0.8
seconds

Why Consistent Quality Matters?

When subscribers experience dropped calls, failed connections, or prolonged buffering, frustration builds. And what happens next?

Churn Rates for Subscribers >80% ECQ vs. <80% ECQ



Source: Opensignal proprietary data. Data collection period is 28 June 2024 to 3rd January 2025. Churn is calculated on monthly basis

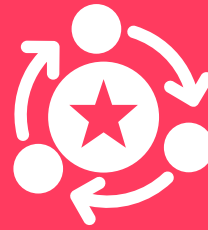
It is also a focal point of our Global Network Excellence Index

We've developed a new **Global Network Excellence Index** to provide a country-level ranking of **mobile network excellence**, evaluating countries across three core pillars:



The proportion of time mobile users spend connected to 4G and 5G network, which supports high speed mobile broadband.

Is the latest network infrastructure available?



The percentage of mobile subscribers' network experience is above the thresholds required for common applications.

Is the typical service level sufficient?




The average download speed experience by mobile subscriber on 4G and 5G network, respectively

How futureproof are the network?

Global Network Excellence Index – What's included?

- **Global Analysis:** A country-level ranking of 130+ countries.
- **Customized Filters:** Group results by region, small vs. large land mass, and national income level.
- **Consistent Methodology:** A country's Global Network Excellence Index rank is the average of its global rank across our measured categories.
- **Regular Updates:** The Index is updated quarterly on a standard cadence


Global Network Excellence Index

The **Global Network Excellence Index** is a comprehensive ranking system that evaluates mobile markets worldwide, providing insights into infrastructure readiness, user experience, and ability to support future digital demands.

[More](#)

Want to receive updates? [Sign up](#)

Choose a view: Leaderboard World map

Choose a time period: Year: 2025 2024 Quarter: Q1 Q2 Q3

Land Area:

- ☐ Small
- ☐ Large

Region:

- ☐ East Asia and Pacific
- ☐ Latin America and Caribbean
- ☐ North America
- ☐ Sub-Saharan Africa
- ☐ Europe and Central Asia
- ☐ Middle East and North Africa
- ☒ South Asia

Economic Group:

- ☐ AU55
- ☐ G7
- ☐ GCC
- ☐ EU27
- ☐ G20
- ☐ OECD

Income Level:

- ☐ High income
- ☐ Upper middle income
- ☐ Lower middle income
- ☐ Low income

Reset Filters

Global Network Excellence Index

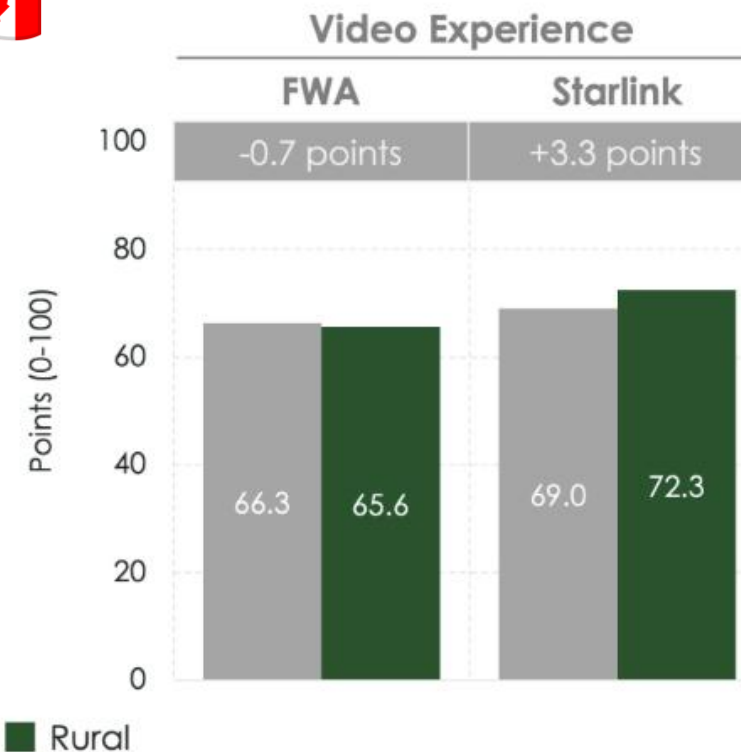
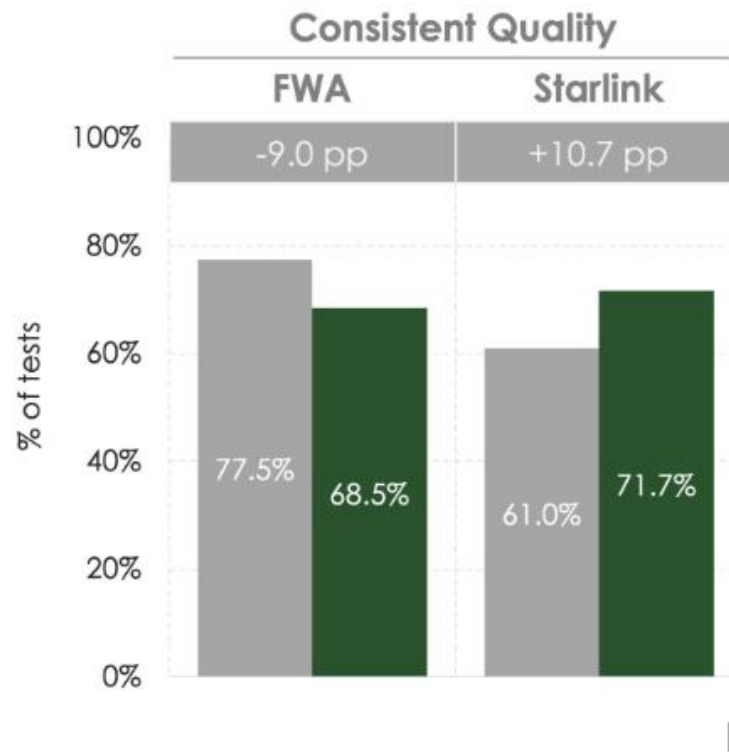
Table shows: Rank Value Download table

Country	Overall Rank	4G/5G Availability	Excellent Consistent Quality	4G Download Speed	5G Download Speed
India	1	1	1	3	2
Maldives	2	5	2	1	1
Sri Lanka	3	2	3	4	-
Bangladesh	4	3	4	2	-
Pakistan	5	4	6	5	-
Nepal	6	6	5	6	-

Learn more about Global Network Excellence:
<https://www.opensignal.com/global-network-excellence-index>

Measuring Consistent Quality across different technologies

FWA provides a more consistent experience than Starlink in urban areas, however, Starlink outperforms FWA in rural areas



Data collection period: 1st August – 29th October 2024 | © Opensignal Limited

Summary

- **QoE over QoS:** Consistent Quality (CQ) measures whether common apps run smoothly and consistently, not just how fast the network is, which is what consumers care about.
- **ECQ:** Defines **thresholds** across throughput, latency, jitter, packet loss, and TTFB for everyday consumer use cases (HD/4K, live, gaming).
- **Global Network Excellence Index:** Ranks 130+ countries on access to mobile broadband, sufficiency, and future-readiness; updated quarterly.

Thank you for your time

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