



The End-User Connectivity Experience:

Closing the information gap and empowering policymakers, regulators and consumers

Mohamed Abbas

Principal Analyst, MEAI

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



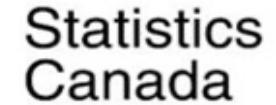
of crowdsourced network data points collected

225+



Mobile, broadband and market
insight reports published in 2023

A long history of regulatory & institutional partnership

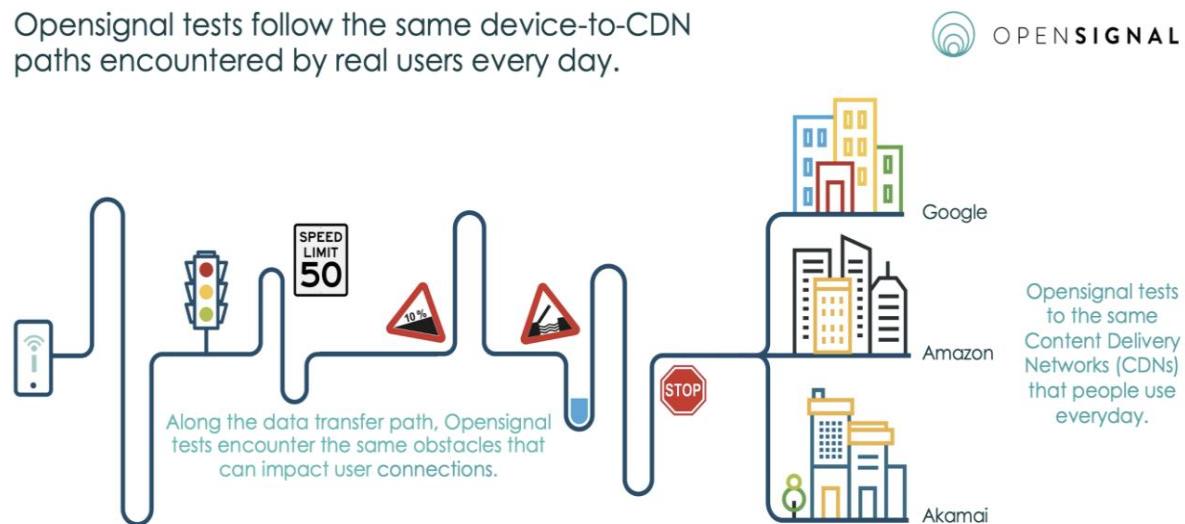


Revealing the truth about network experience

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: - Download/Upload Speed (Throughput) - Latency, Jitter, Packet Loss	Experiential metrics that correlate network performance to specific user activities: - 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

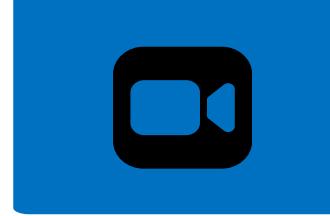
4K quality for stunning visuals

Voice & Video



WhatsApp

Stable calls without interruptions



Zoom

Uninterrupted meetings anytime, anywhere



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.



Fortnite

Low latency for smooth gameplay



PUBG

Stable connection for every match

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

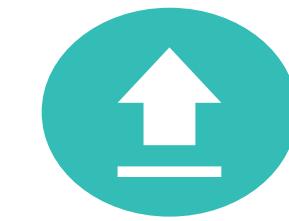
How do we define it?

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



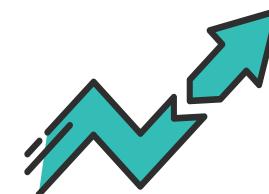
Download
Throughput



Upload
Throughput



Latency



Jitter



Packet
Discard Rate



Time to
First Byte

≥ 5
Mbps

≥ 1.5
Mbps

≤ 50
ms

≤ 12
ms

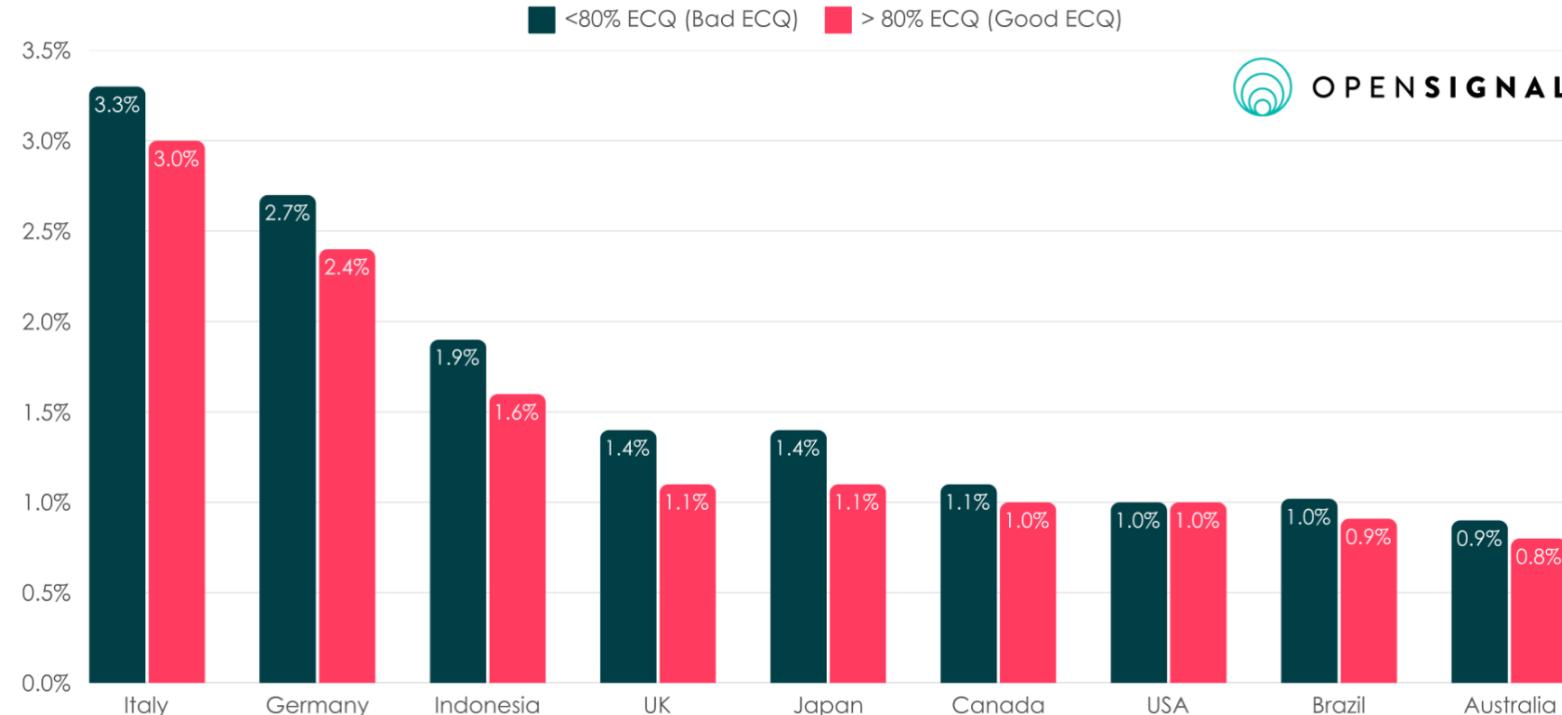
$\leq 1\%$

≤ 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?

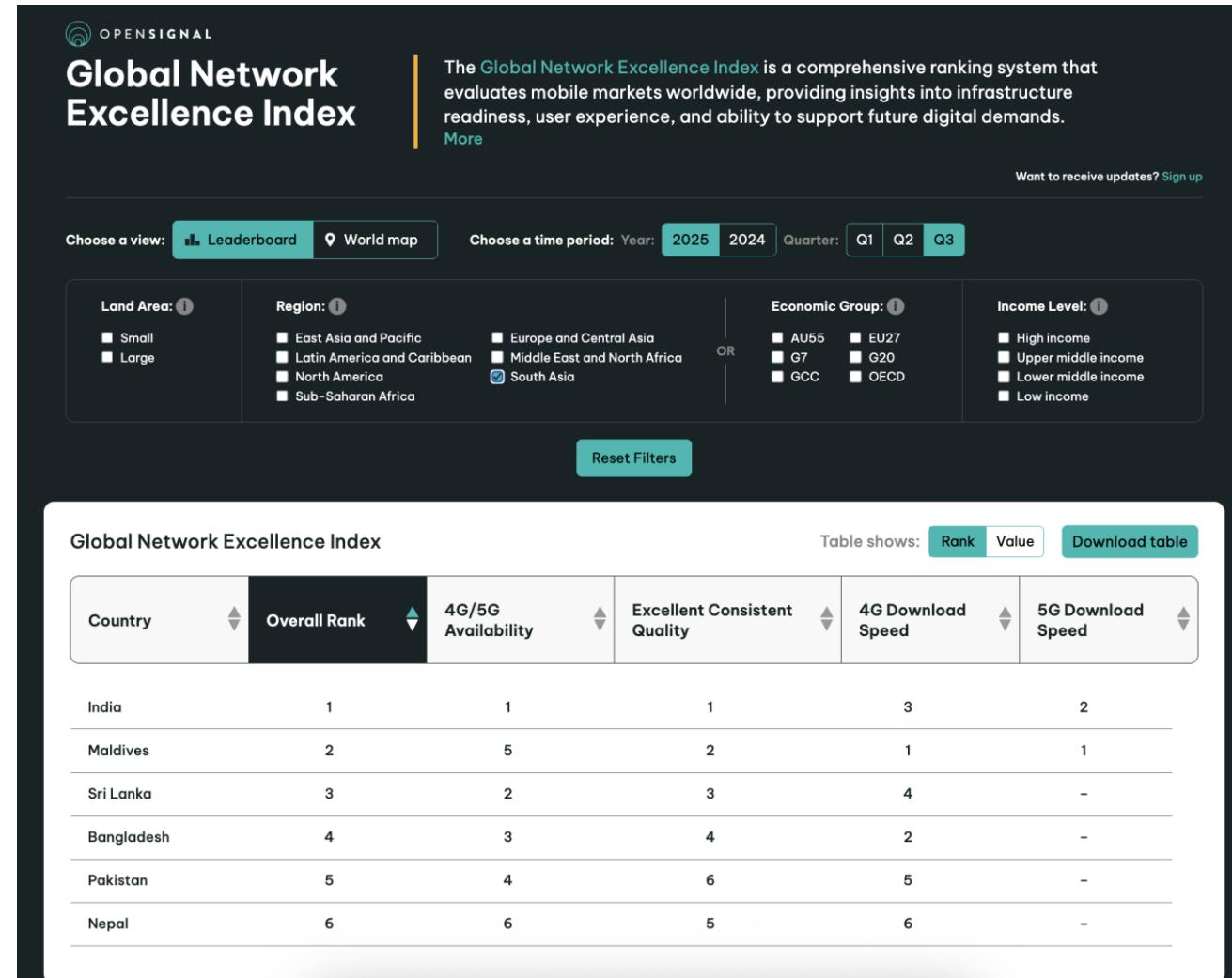


The average download speed experience by mobile subscriber on 4G and 5G network, respectively

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



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](#) [Europe and Central Asia](#)
[Latin America and Caribbean](#) [Middle East and North Africa](#)
[North America](#) [Sub-Saharan Africa](#) [South Asia](#) OR Economic Group: [AU55](#) [EU27](#)
[G7](#) [G20](#)
[GCC](#) [OECD](#) Income Level: [High income](#)
[Upper middle income](#)
[Lower middle income](#)
[Low income](#)

Reset Filters

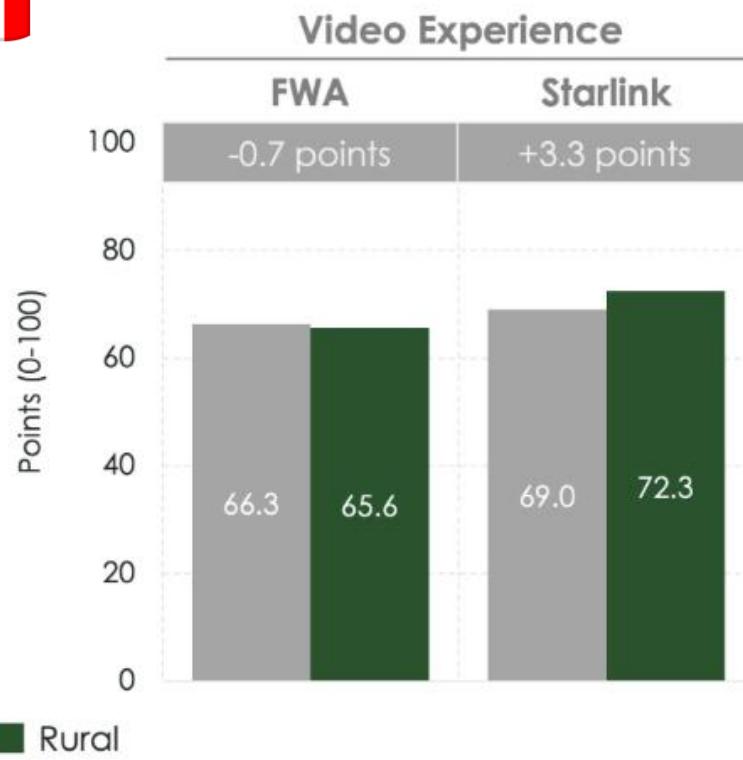
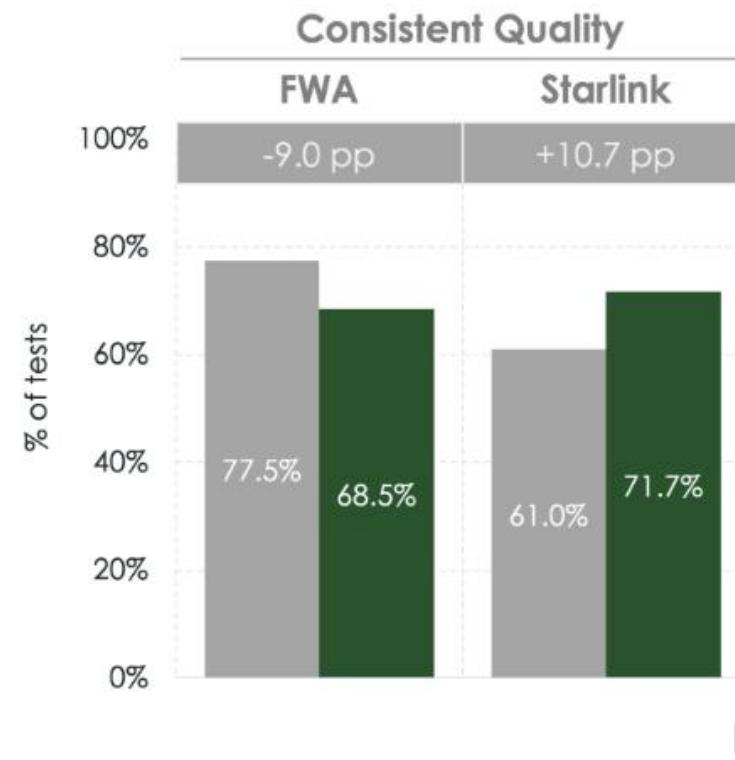
Global Network Excellence Index Table shows: [Rank](#) [Value](#) [Download table](#)

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

e: mohamed.abbas@opensignal.com