

CUTS Comments on TRAI Consultation Paper on Review of Quality-of-Service Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline)

Background

Consumer Unity & Trust Society (CUTS) expresses its gratitude to the Telecom Regulatory Authority of India for inviting comments and suggestions on the Consultation Paper on Review of Quality-of-Service Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline). We have closely examined the Consultation Paper and also reviewed the comments submitted by other stakeholders on key issues arising out of the Consultation Paper. Based on our review and further analysis, CUTS is pleased to submit its comments on the Consultation Paper.¹

About CUTS

CUTS² is an independent, nonpartisan, and non-profit policy think and action tank that has been working towards enhancing the regulatory environment through evidence-based policy and governance-related interventions across various sectors and boundaries. In its 40 years of operation, CUTS has come a long way from being a grassroots consumer centric organisation headquartered in Jaipur, having centres in Delhi³, and Kolkata⁴, to now opening overseas Resource Centres in Vietnam⁵, Kenya⁶, Zambia⁷, Ghana⁸, Switzerland⁹, and in the United States of America.¹⁰ CUTS has been actively representing consumers' interest before different state governments and central government ministries through various programme centres, namely: Centre for International Trade, Economics & Environment (CITEE)¹¹; Centre for Consumer Action, Research & Training (CART)¹²; Centre for Human Development (CHD)¹³ and Centre for Competition, Investment & Economic Regulation (CCIER).¹⁴

CUTS works on various issues to foster an inclusive digital economy¹⁵ which include issues of telecom and broadcasting, privacy and data protection, e-commerce, fintech and digital payments, among others. Particularly, CUTS has conducted various studies and events in the

¹ [Telecom Regulatory Authority of India Consultation Paper on Review of Quality-of-Service Standards for Access Services \(Wireless and Wireline\) and Broadband Services \(Wireless and Wireline\)](#)

² [CUTS International – Consumer Unity & Trust Society \(cuts-international.org\)](#)

³ [CUTS Delhi Resource Centre](#)

⁴ [CUTS CRC](#)

⁵ [CUTS HRC](#)

⁶ [CUTS Nairobi](#)

⁷ [CUTS Lusaka](#)

⁸ [CUTS Accra](#)

⁹ [CUTS Geneva](#)

¹⁰ [CUTS WDC](#)

¹¹ [CUTS Citee](#)

¹² [CUTS Cart](#)

¹³ [CUTS CHD](#)

¹⁴ [CUTS CCIER](#)

¹⁵ [Inclusive Digital Economy - Ccier \(cuts-ccier.org\)](#)

telecommunications (telecom) sector, such as Demystifying Reality from Myth for 5G in India¹⁶; Coding and Enforcing Mobile Internet Quality of Standards in India¹⁷, Consumer Broadband Labels for Greater Transparency & Informed Consumers¹⁸, Towards Effective Choice: A Nation-Wide Survey of Indian TV Consumers¹⁹, Elements of Ethical Framework for 6G and Creating Opportunities for India and Australia²⁰, Understanding and Highlighting Stakeholders' Perspectives on Caller Name Presentation (CNAP) in Telecommunication Services²¹, Understanding and Highlighting Consumers' Perspectives in the debate of regulation of Over the Top (OTT) Communication Services²², and Bringing Forth a Consumer Perspective on Wi-Fi 6E²³, among many others.

CUTS also works with various ministries and government departments for advocacy efforts²⁴ on issues within digital economy, more recently on the draft broadcasting bill²⁵, draft guidelines for prevention and regulation of dark patterns²⁶, draft registration of consumer organisations (amendment) regulations²⁷, draft telecommunication mobile number portability regulations²⁸, digital competition²⁹, competitive neutrality³⁰, among others. Based on such evidence-based studies, CUTS is pleased to submit its comments on the Consultation Paper. Please find below our question-wise response to the Consultation Paper.

Question-1: What are the possible reasons for increasing gaps between the QoS reported by the service providers and the QoS experienced by the consumers? How this gap can be bridged?

While QoS is measured on objective and technical facets of network performance like reliability, latency, and bandwidth, QoE concentrates on the subjective and perceived service quality from the consumer's viewpoint, including factors like ease of use, reliability, and satisfaction.³¹ Further, the awareness of QoS parameters enables consumers to have clearer expectations for an improved QoE. This has also been highlighted in a survey on Mobile

¹⁶ [research-report-5g-in-india-demystifying-reality-from-myth.pdf \(cuts-ccier.org\)](#)

¹⁷ [Coding and Enforcing Mobile Internet : Quality of Standards in India - ccier \(cuts-ccier.org\)](#)

¹⁸ [Project Launch Meeting “Consumer Broadband Labels: For Greater Transparency & Informed Consumers” - ccier \(cuts-ccier.org\)](#)

¹⁹ [TV Consumer Market Study - ccier \(cuts-ccier.org\)](#)

²⁰ [Ethical 6G – Identifying Elements of Ethical Framework for 6G and Creating Opportunities for India and Australia - ccier \(cuts-ccier.org\)](#)

²¹ [Understanding and Highlighting Stakeholders' Perspectives on Caller Name Presentation \(CNAP\) in Telecommunication Services - ccier \(cuts-ccier.org\)](#)

²² [Understanding and Highlighting Consumers' Perspectives in the debate of regulation of Over the Top \(OTT\) Communication Services - ccier \(cuts-ccier.org\)](#)

²³ [Understanding Consumer Perspectives on 6GHz Band - ccier \(cuts-ccier.org\)](#)

²⁴ [Advocacy - Ccier](#)

²⁵ [CUTS Comments on Broadcasting Services \(Regulation\) Bill, 2023](#)

²⁶ [CUTS Comments on Draft Guidelines on Prevention and Regulation of Dark Patterns](#)

²⁷ [CUTS comments on TRAI Consultation Paper on the draft Registration of Consumer Organisations \(Amendment\) Regulations, 2023](#)

²⁸ [CUTS comments on Draft Telecommunication Mobile Number Portability \(Ninth Amendment\) Regulations, 2023](#)

²⁹ [advocacy-joint-open-letter-by-stakeholders-to-the-mca-on-the-digital-competition-bill.pdf \(cuts-ccier.org\)](#)

³⁰ [Promoting Competitive Neutrality in Government Using Advocacy](#)

³¹ [Improving End-User Experience through Analytics: Quality of Experience \(QoE\) and Quality of Service \(QoS\) for RTC](#)

Internet Service in India: Quality of Service³², conducted by CUTS in 2015, which examined the awareness QoS parameters framed by TRAI. It was found that in Rajasthan, only one percent of the respondents said they were already aware of the same, while 93 percent did not know about the standards but were keen to know. The same numbers for West Bengal were 17 percent and 65 percent respectively; while for the National Capital Region it was six percent and 81 percent respectively.³³ It also suggested institutionalising mechanisms to periodically collect and review consumer feedback about QoE, to inform targeted efforts to improve QoE. Unless consumers regain the power to hold service providers to account, and express their experiences and challenges, much success in this area will be elusive.

It has been observed that typically, Indian consumers are only informed about the potential maximum speeds and data usage limits when selecting a broadband service. Terms like "fast" or "hi-speed" are commonly used without providing detailed insights into service performance aspects such as minimum speed, latency, bandwidth, and potential losses or congestion. Hence, there is no doubt that consumers deserve explicit, easy to understand, and truthful details about pricing, performance, and other service terms.³⁴

In this regard, broadband labels³⁵ can help promote well informed, educated and responsible consumers and act as a tool for consumers to make an informed choice for broadband services. It will also instil competition in the market and create incentives for providing better QoE to consumers and ensuring consumer welfare.

Globally too, broadband labels aim to provide consumers with clear and standardised information for making informed decisions. For example, recently, in the United States, the Federal Communications Commission (FCC) mandated adoption of broadband "nutrition" labels.³⁶ Starting from April 10, large ISPs have been mandated to display broadband labels at any point of sale, whether online or in physical stores. These labels are required for all standalone home or fixed internet service, as well as mobile broadband plans. Providers must prominently display the label, not just an icon or link, near the associated plan's advertisement. The labels will include details such as broadband prices, introductory rates, data allowances, broadband speeds, and links for further information on available discounts, network management practices, and privacy policies.³⁷ Thus, policies promoting the disclosure of QoS information via broadband labels is crucial for improving the QoE for consumers. CUTS had also made similar recommendations to TRAI and the regulator had kindly included those in its discussion paper. However, the idea could not be taken forward by the regulator for the reasons best known to it. In this regard, a few sample consumer broadband labels have been inserted below along with a youtube video³⁸, for the regulator's

³² [Coding and Enforcing Mobile Internet : Quality of Standards in India - ccier \(cuts-ccier.org\)](#)

³³ [Mobile Internet Services in India-Quality of Service](#)

³⁴ [Consumer Broadband Labels: Information towards Empowerment](#)

³⁵ [Presentation on Consumer Broadband Labels for Greater Transparency & Informed Consumers](#)

³⁶ [CONSUMER BROADBAND LABELS NOW REQUIRED NATIONWIDE AT ONLINE AND IN-STORE POINTS OF SALE](#)

³⁷ [BROADBAND CONSUMER LABEL REQUIRED FOR MOST INTERNET SERVICE PROVIDERS](#)

³⁸ [Consumer Broadband Labels: Strengthening Disclosure and Transparency of Broadband Services in India-YouTube](#)

kind reference.

CONSUMER BROADBAND LABEL		
QoE Parameter	Download (in Mbps)	Upload (in Mbps)
Max Speed	1.8	1.2
Average Speed	1.2	1.0
Social networking	★★★★☆	
Video streaming	★★★★★	
HD video	★☆☆☆☆	
Mapping apps	★★★☆☆	
Web browsing	★★★★☆	
Messaging apps	★★★★☆	
Voice calling	★★★★★	
Data pricing	Limit	Upgrade
Rs 100/pm	1 GB	5p / MB
Rs 200/pm	2 GB	5p / MB
Guidance notes: - Choose a plan based on your needs - 5min of Youtube streaming @ 240p will consume 15MB of data - 5min of Facebook browsing will consume XXX of data - Example: With a 1GB plan, you can watch 30 Youtube videos of 5min each, and spend XXX minutes on Facebook		

Qualitative Label

CONSUMER BROADBAND LABEL		
QoS Parameters	Download	Upload
Max Speed	1.8 Mbps	1.2 Mbps
Average Speed	1.2 Mbps	1.0 Mbps
Latency	32ms	
Availability	89%	75%
DNS delay	289ms	
Stability: Mean Time Between Switch	2.1s	3.5s
Service quality	Assessment	
Activation time	10 hours, max. 3.5 hours avg	
Coverage	Bih: Coverage: 70% Rural: 50% Urban: 89% National: 18/22 circles	
Performance improvement over last year	Speed: ++ (25%) Latency: No change Stability: - (10%) Coverage: +++ (50%)	
Network improvement practices		
Content Delivery Networks	Enhanced performance for Facebook, Youtube	
Data compression proxies	Ad blocker, image compression	
Available capacity for new users	65% utilization	
Goals for 2017	Coverage inc. to 95% Avg. speed to 1.5Mbps	

Quantitative Label

figure 1. Consumer Broadband Labels³⁹



figure 2. Youtube Video on Consumer Broadband Labels

Further, there is also a need to raise awareness and build the capacity of consumers, consumer organisations and relevant stakeholders, on issues pertaining to the need to create a demand for standard nutrition labels and test broadband services on specific parameters like building capacity and providing tools to verify claims made by service providers.⁴⁰ This includes educating these groups about the significance of transparent information dissemination, ensuring that consumers are equipped to make informed decisions.

³⁹ [Brochure-Consumer Broadband Labels.pdf \(cuts-ccier.org\)](http://cuts-ccier.org/Brochure-Consumer_Broadband_Labels.pdf)

⁴⁰ [Consumer Broadband Labels: Information towards Empowerment](#)

Question-2: To support emerging applications and use cases please suggest a transparent framework for measurement and reporting of QoS and QoE especially in 4G and 5G networks considering relevant standards and global best practices.

As highlighted above, the introduction of broadband labels offering consumers clear information on quality metrics, pricing, and customer service can help bridge the gap between the promised quality and the actual QoE for consumers. Under the project on broadband labels, the CUTS report on "Design Parameters for Internet Nutrition Labels in India" by IIT Delhi⁴¹ delves into essential aspects for crafting effective Internet nutrition labels tailored to the Indian context. Key design parameters outlined include:

1. Standardised measurement methodologies for crucial performance indicators such as latency, packet loss, and jitter to ensure consistent reporting across different service providers. These methodologies should also include other factors such as maximum speed, average speed, latency, DNS delay, coverage, stability, download speeds, which are important for on demand videos, consistency of network speed, and security and privacy features.
2. Granularity in reporting Key Performance Indicators (KPIs) to provide meaningful insights at the city level, aiding consumers in making location-specific decisions. Public reporting of network performance data would also allow consumers to compare services based on QoS metrics.
3. Parameters to uphold accountability and transparency in the telecommunications sector. Holding service providers accountable for reported KPIs, ensuring they accurately reflect the quality of service offered to consumers.

Also, initiatives aimed at educating consumers and consumer organisations about QoS standards will empower them in making informed decisions when selecting network services. The development of a consumer feedback mechanism would also enable the collection of real-time insights on network performance and consumer satisfaction.

Question-7: What should be the approach for adoption of ‘QoS by Design’ framework by the service providers to ensure that new generation wireless networks are planned, implemented and maintained to deliver required level of measurable QoS and QoE?

While the adoption of measurable QoS and QoE metrics are important to deliver the required level of measurable QoS and QoE, it is also important to underscore the importance of transparency in broadband services. Transparency in broadband services becomes increasingly important as consumers use high-demand applications such as online gaming, video conferencing, streaming, VoLTE, and IPTV, which require more data and lower latency. As QoS requirements rise, so do customer expectations for QoE. Thus, there is a need to include consumer broadband labels, as discussed above, into the design frameworks to promote transparency and accountability for improved QoE.

Further, the use cases and consumer expectations regarding new generation wireless networks

⁴¹ [Presentation on Design Parameters for Internet Nutrition Labels in India by IIT](#)

will also need to be clearly understood to design better QoE parameters which can be tested with respect to such services. For instance, the upcoming 6G telecommunications network is poised to significantly enhance and support other cutting-edge technologies such as the Internet of Things (IoT), machine learning (ML), artificial intelligence (AI), edge computing, haptic technology, and blockchain. This advancement is likely to lead to new use cases and experiences for both the industry and consumers. Broadly, these can be categorised into two types: those involving human interaction with machines, and those facilitating human-to-human interaction through the use of machines.⁴²

Further, the adoption of new WiFi technologies will also allow improved performance for smart home devices, such as virtual assistants and IoT devices.⁴³ In the CUTS study on Understanding Consumer Perspectives on 6GHz Band⁴⁴, 44 percent of consumers indicated that they would like to upgrade to the latest Wi-Fi technology, which supports high-end devices. Younger consumers are particularly keen on buying Wi-Fi-connected devices such as entertainment/gaming and wearables.⁴⁵

Therefore, considering the future trends of devices and the ecosystem that supports them, it is crucial to clearly understand consumer expectations concerning new generation wireless networks in order to design improved QoE parameters.

Question-8: What measures are required to accelerate the adoption of AI for management of QoE to reduce consumer complaints protectively and to enable near real time reporting of QoS performance to consumers?

If there are a significant number of complaints, the regulator should not necessarily focus on reducing them, but also on resolving these complaints timely and efficiently, thereby boosting customer satisfaction. Additionally, the regulator should actively encourage consumers and consumer organisations to voice their concerns. This can be achieved by streamlining the complaint submission process, making it more accessible and user-friendly, and empowering consumers to easily share their feedback.

Therefore, to accelerate the adoption of AI for management of Quality of Experience (QoE) and improve Quality of Service (QoS) standards for access services, the following recommendations are proposed:

1. *Incorporating Consumer Perspectives:* Incorporating consumer perspectives into the designing of AI tools for QoE management should be considered. This means not only focusing on technical optimisation but also understanding and addressing consumer needs and preferences. Studies must be undertaken to gauge consumer expectations, including prompt resolution of grievances, along with their perceptions and potential challenges. Furthermore, incorporating the insights of consumer organisations and making this data publicly accessible is advised. Also, the training datasets for AI tools need to be open for review, meet diverse Indian realities, focused

⁴² [understanding-6g-developments-and-challenges.pdf \(cuts-ccier.org\)](#)

⁴³ [research-report-examining-wi-fi-6e-for-india.pdf \(cuts-ccier.org\)](#)

⁴⁴ [Understanding Consumer Perspectives on 6GHz Band - ccier \(cuts-ccier.org\)](#)

⁴⁵ [findings-recommendations-understanding-consumer-perspectives-on-6ghz-band.pdf \(cuts-ccier.org\)](#)

on improving QoE, and its decisions should be subject to review and challenge by consumers.

2. *Promoting Transparency and Accountability:* Transparency and accountability are key principles that should underpin the adoption of AI. Measures that ensure transparency in AI algorithms and decision-making processes, as well as mechanisms for holding service providers accountable for the QoS they deliver, should be promoted. QoS parameters need to be defined at application level for bridging the gap between QoE and QoS. Such measures are also essential to mitigate any biases and discrimination that consumers may encounter due to AI system integration.
3. *Fostering Competition and Innovation:* Fostering competition and innovation is essential for driving improvements in QoE. This includes promoting an open and competitive market environment that incentivises service providers to invest in AI-driven QoS improvements and encourages the development of new technologies and solutions. Additionally, it is imperative to empower small and medium-sized enterprises (SMEs) by guaranteeing a level playing field, enabling them to harness AI effectively and efficiently to enhance their services and fulfil consumer expectations. Removing entry and operational barriers for SMEs would be essential in this regard.
4. *Safeguarding Consumer Privacy and Data Protection:* Given AI's reliance on data, safeguarding consumer privacy and data protection rights is paramount. Adherence to the principles delineated in the Digital Personal Data Protection Act, ensuring compliance with privacy standards, data minimisation, and safeguarding consumer rights is imperative. It is essential that any measures aimed at preserving subscriber data prioritise consumer protection, preventing any misuse or harm. Furthermore, the financial burden associated with data maintenance should not be shifted onto consumers.

Consumer Unity & Trust Society (CUTS) expresses gratitude to Telecom Regulatory Authority of India (TRAI) for inviting comments on the Consultation Paper on Review of Quality-of-Service Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline). CUTS looks forward to TRAI accepting the above suggestions and assisting in its efforts to empower consumers and ensure better Quality of Experience for the consumers. We would be glad to make an in-person presentation of our submission before TRAI.

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