BRIEFING PAPER

Regulation and Implementation of Mobile Internet Quality of Service:
Role and Scope of Civil Society Organisations

With the ongoing debate on net neutrality and digital inclusion, one must not forget the need and importance of providing quality internet services to the consumers. Successful net neutrality and digital inclusion would negate its purpose if the quality standards at the consumer end are meek. To ensure quality standards of wireless data services, the Telecom Regulatory Authority of India (TRAI) has formulated specific parameters or the Quality of Service (QoS) standards which all service providers and mandated to follow. This briefing paper underscores the importance of Civil Society Organisations' (CSOs') intervention in buoying and enhancing the regulation and implementation of the captioned quality standards. The paper maps the role that the CSOs have been playing and highlights the gaps which need to be plugged and could be plugged through certain recommendations.

Background

As per a recent report entitled, 'Mobile Internet in India 2014', owing to mobile internet, the average monthly mobile bill for users has increased by 13 percent from Rs387 in 2013 to Rs439 in 2014[1]. In 2013, where mobile internet accounted for 45 percent of the total bill, the same accounted for 54 percent of the total bill in 2014.

India has experienced an exponential growth in the mobile internet market over the last few years. Driven by demand, the market seems to be only growing further. It is estimated that by June 2015, the total number of mobile internet users in India will cross 213mn. In 2013, there were 173mn mobile internet users.[2]

To ensure that this dynamic growth is accompanied by competition, efficiency as well as consumer satisfaction, it is important that the same be supported by a framework of well-structured regulations. The focal point of this paper is QoS of mobile internet in India and the role that CSOs need to play in fostering the same.

Concept of QoS (in Mobile Internet)

In the international paradigm, QoS has been defined as specific requirements provided by a network to the users, which are necessary in order to achieve the required functionality of an application (service).[3] These requirements act as a scale to evaluate the performance of the service providers.

In India, TRAI *vide* the Standards of QoS for Wireless Data Services Regulations 2012, hereafter referred to as Regulation 2012), has defined QoS as the "main indicator of the performance of telecommunication network and of the degree to which such network conforms to the standards of such quality of service" specified in the notification. (Refer to Table 1: QoS parameters as recognised by TRAI).

Table 1: QoS Standards as per TRAI	
Name of Parameter	**Benchmark**
Regulation 2012	
Service Activation/ Provisioning	Within 4 hours with 95% success rate
Successful Data Transmission Download Attempts	> 80%
Successful Data Transmission Upload Attempts	> 75%
Minimum Download Speed	To be measured for each plan by the service provider and reported to TRAI
Average Throughput for Packet Data	> 75% of the subscribed speed
Latency	Data < 250 ms
PDP Context Activation Success Rate	≥ 95%
Drop Rate	≤ 5%
Amendment 2014	
Minimum Download Speed	≤ 80% of the usage time
Source: TRAI Website,http://www.trai.gov.in/Content/Regulation/0_3_REGULATIONS.aspx	

The regulation enlists the benchmarks for QoS which service providers rendering, Unified Access Service (UAS) as well as cellular mobile telephone service are mandated to follow. On the basis of their performance vis-à-vis the QoS benchmarks, service providers are required to submit quarterly reports to TRAI. In case of non-compliance of a standard, TRAI may levy fine up to Rs50,000 (per parameter) and in case of subsequent non-compliance a fine up to Rs1,00,000.[4] Further, if the service provider delays in submitting the quarterly report to TRAI, there is a fine of Rs5000 per day and in case of false reporting a fine of Rs10,00,000.[5]

Relevance of CSOs/Consumer Groups' Representation

Consumers are the *raison de' etre* of all economic activities in all economies. Production is usually driven by consumer demand – willingness to pay and ability to pay. The satisfaction of consumer interests provides the necessary stimulus for economic growth.

Given that the economic interests of powerfully organised producers and inadequately organised consumer groups often clash at the level of the industry, there is a case for regulators which not only takes into account views and interests of all stakeholders but also ensures that the consumers have the opportunity as well as capacity to voice their opinions regarding the conduct of regulation and supply of the services.

A recent survey revealed that 89 percent of respondents believed that data services on their mobile phone were not good while 43 percent complained that the connectivity was poor.[6] More importantly, the survey revealed that 77 percent of the surveyors considered that TRAI had not taken adequate steps to address such issues in the sector.[7]

Against this background, it is crucial for CSOs to play an active role in bridging the gap between consumers, TRAI as well as the service providers. Not only should they reflect consumer concerns but also relay the challenges faced by service providers in implementing the QoS parameters. Furthermore, they should detect potential degradations in service quality over time and report the same to the regulator

CSOs/ Consumer Groups' Representation under TRAI

1. Legal structure

The TRAI Act, 1997 explicitly underscores the importance of consumer welfare *vis-à-vis* services provided by the providers. In order to provide space for effective consumer representation, TRAI passed the Regulation on Guidelines for Registration of Consumer Organizations/Non-Governmental Organisations (NGOs) and their Interaction with TRAI, 2001. The regulations provide specific guidelines for registration of CSOs and Non-Governmental Organisations (NGOs) with TRAI.8 The registered organisations have the privilege of obtaining data from TRAI and attending special meetings with the regulatory board where they are given an opportunity to voice their opinions.9

The said regulations were later revised and replaced by the Registration of Consumer Organisations Regulations in 2013 on the basis of stakeholder consultations (including consumer advocacy groups).10 The core objective of reviewing the Regulation was to bring transparency with the registration process and enhance effective communication between the consumer groups and TRAI.

Currently, there are forty two consumer organizations (National and State level) registered with TRAI.11 The Consumer Affairs (CA and QoS) Division, as the name suggests is responsible for the registration and interaction of consumer groups and framing and monitoring of QoS by service providers.12

2. Role and scope

Although, many CSOs and consumer groups have played a significant role in general regulation making process and awareness segment of the telecommunications sector, their interventions in the mobile internet QoS segment has been limited.

In case of QoS, there are two crucial areas where CSOs in India need to play an important role, these are – regulations and effective implementation.

2.1 Regulation of QoS

In case of regulations pertaining to the Quest, TRAI frames the same and releases the draft on its official website for public comments. The draft is available for a certain period for comments and an extended period for counter comments. In such cases, it is essential for CSOs and relevant stakeholders to provide comments/suggestions to TRAI. Furthermore, organisations registered with the TRAI should not only provide comments but also actively voice their opinion in special meetings and open floor discussions with TRAI as well as the media.

An example of an organisation that has played an active role in providing comments on the QoS is Voluntary Organisation in Interest of Consumer Education (VOICE), a consumer protection group set by teachers and students of the Delhi University in 1983. When the draft 'Amendment to the Standards of Quality of Service for Wireless Data Services Regulations, 2012', were laid out in the public domain, VOICE strongly advocated for prescribing benchmarks of minimum download speed.

Opinion of VOICE on Minimum Download Speed

"It is high time that all parameters related to QoS for Wireless Data Services are prescribed and monitored. This probably one the rare product/service where a buyer does not know what he is buying as the Internet Service Provider (ISP) will keep on changing the specification of the service on offer at his whims and fancies even overlooking the basic trade norms. Unless the buyer is told of the specifications of the service being offered how the consumer can demand performance. And the Licensor as well as the regulator has overlooked this basic fact and have not provided a proper definition to all aspects of internet. Obviously, the ISPs do not believe in self-regulation as no ISP has defined his offerings clearly. Then there is a misleading sales pitch – 'Speed upto ….Mbps….' which does not guarantee any performance.

Further, all ISPs should be mandated to specify minimum performance on not only download speed but upload speed as well for each plan.

Source: Inputs received from VOICE

Similarly, other groups, such as the Internet Society (ISoc), Consumer Protection Association, National Centre for Human Settlements and Environment (NHSCE), Association of Unified Telecom Service Providers of India (AUTSPI) and Haryana Technical Association, have also played an active role in providing comments to TRAI on QoS regulations.

However, on comparing the dynamism of stakeholders in providing comments on TRAI's draft regulations/etc., it is noted that service providers have been much more active in voicing their opinions as compared to CSOs.13 It is therefore argued that to ensure that inputs of all stakeholders is relayed to TRAI, more CSOs need to participate in providing substantial inputs.

2.2 Implementation of QoS

In case of implementation of the QoS, the role of CSOs has been rather latent. In fact, based on secondary research, it has been found that no such organisation essentially works on the issues of implementation (which extends to include monitoring and evaluation) of the QoS in mobile internet. A couple of implications of limited interventions have been cited below:

2.2.1. Auditing and Accountability

One may commend TRAI's agility in compiling and publishing the quarterly reports submitted by various service providers regarding their performance *vis-à-vis* QoS Standards.14 The authority has also been proactive in auditing the said reports and publishing the same, albeit the Regulation 2012 provides that TRAI 'might' audit the reports (and not 'shall').

For the purpose of auditing, TRAI has 'appointed' three agencies (namely, M/s CS Defamations Research Services Pvt. Ltd, M/s TUV SUD South Asia and M/s IMRB International) to conduct the audits.15 Although the complete audit reports (including methodology) are available on the websites of these agencies and TRAI, one might question the 'appointment' of these agencies. Were these agencies appointed through a process of competitive bidding? What is the tenure for which the captioned agencies are responsible for such audits? Should not the contract of these agencies be fixed for a certain period and then opened for bidding?

To make the process of audit more transparent and authentic, it is crucial for CSOs to question and determine and question the complete process of auditing itself.

2.2.2. Publication of Reports by Service Providers

Regulation, 2012, section 6 (2) *de jure* mandates that service providers should 'publish, for the information of consumers' its performance with respect to the QoS. However, *de facto* no such information is available on the official website of any of the service providers in India. If the reports are to be published (as per the Regulation 2012), TRAI needs to specify where and how the information should be published while the CSOs should ensure the same is accordingly published and made easily available to consumers. As currently no such information is available on the official websites of the service providers.

It is therefore argued that the CSOs need to build their capacity to be able to monitor the implementation of the regulations pertaining to the QoS. The objective here is dual pronged. Firstly, this will help TRAI in monitoring the QoS transparently and efficiently. Secondly, this would help in bridging the gap between framing and implementing the QoS. Interaction with the consumers will reflect the ground results of regulations while interaction with service providers will help them assess challenges faced while implementing the QoS parameters. Subsequently, they will be able to provide TRAI with strong evidence-based inputs for improved QoS regulation.

Recommendations and Conclusion

CSOs engagement in QoS regulation has increased in the past few years. However, to realise the regulation, it is important for CSOs to intervene at the implementation level as well.

While active intervention of CSOs is strongly argued, one must not overlook the hurdles

which limit the participation of the CSOs. Often CSOs suffer from – financial limitations, poor regulatory response, information asymmetry and lack of training and capacity building. Some of the recommendations put forth through this paper, keeping in mind the limitations are as follows:

- **Collaboration of CSOs**
  CSOs must collaborate their strengths to effectively tackle the issues pertaining to QoS, especially the CSOs registered with TRAI. Such CSOs might meet periodically to channelise their inputs and subsequently relay the same to TRAI in the special meetings and open floor discussions. Further, Indian CSOs might also collaborate with international experts or international groups like the International Governance Forum and the International Telecommunication Union to keep abreast of the developments in the QoS which take place at the international-level.

- **Good practices of CSOs abroad**
  CSOs in India should learn from at the good practices of CSOs abroad working in this field. One such international organisation is LIRNEasia, a regional Information and Communication Technology policy and regulation think tank active across Asia Pacific. The oganisation has been active in research and advocating for effective QoS standards across Asia.

- **Outsourcing Internet Measurement**
  As mentioned above there are only three 'appointed' agencies which audit the QoS standard reports of service providers. It is important for CSOs to advocate for more institutions to partake such evaluation. Internationally, various internet measurement platforms have emerged in the past few years. Further, such platforms are being deployed by Regulators, Consumers and ISPs. For example, SamKnows, a private organisation has become popular in collecting internet data for quality measurement amongst Regulators across (including United States, United Kingdom,

Singapore, Brazil and Canada). Another example is Broadband Internet Service mark (BISmark), an initiative by Georgia Tech for (broadband) internet measurement. Civil society and consumer groups in India could advocate for deployment of such organisations. This would save time and efforts in data collection and provide space for efficient data *vis-à-vis* QoS analysis.

- **Collaboration with the Universities**
  For technical assistance in monitoring and/or evaluating the QoS, CSOs could collaborate with Universities having technical expertise. For instance, Indian Institute of Technology (IIT) has collected internet data from four service providers across rural as well as urban locations. At the international-level, some of the Universities which have developed a model to evaluate QoS performance of service providers are: Aalto University (Netradar model) and University of Pisa (Portolan model).[16] Hence, the CSOs might urge Indian Universities to develop a framework for QoS evaluation and collaborate with them to conduct third party assessments.

- **Creation of complaint redressal mechanisms**
  Advocate setting up of a complaint redressal mechanisms for consumer complaints related to Internet connectivity. Merely assessing quality of service parameters and asking ISPs to submit, is not sufficient. A consumer redressal mechanism which is transparent and swift needs to be put in place.

- **Privileges given to registered CSO/NGOs**
  The CSOs/NGOs registered with TRAI is an opportunity for close focussed interaction which has not been capitalised. TRAI should use this platform to build the capacity and involvement of the registered organisations. For instance, CSOs should advocate for biannual meetings with TRAI to have focussed discussions on the issues pertaining to QoS, etc. Further, (as done earlier) a fund could be allocated to the registered CSOs to enable them to carry out related functions and awareness programmes.

Endnotes

1 "Mobile Internet Report 2014" 2014. Internet & Mobile Association of India.

2 Ibid

3 de Gouveia F.C., Magedanz T., "Quality of Service in Telecommunication Network", Technical University of Berlin, Berlin, accessed June 1, 2015, http://www.eolss.net/sample-chapters/c05/e6-108-14-00.pdf

4 "The Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service (Second Amendment) Regulation 2012", 2012, Telecom Regulatory Authority of India, accessed June 1, 2015, http://www.trai.gov.in/content/VerReg/106_0_0.aspx

5 Ibid

6 "Internet Users Have Little Trust for Operators, TRAI Survey", Indian Express, April 17, 2015, accessed June 1, 2015, http://www.newindianexpress.com/cities/bengaluru/Internet-Users-Have-Little-Trust-for-Operators-TRAI-Survey/2015/04/17/article2768575.ece

7 Ibid

8 "Regulation on guidelines for registration of Consumer Organizations/ Non-government Organizations (NGOs) and their Interaction with TRAI, 2001", 2001, Telecom Regulatory Authority of India, accessed June 1, 2015, http://www.dot.gov.in/sites/default/files/15jan2001.pdf

9 Organisations which are not registered with TRAI are invited for open house discussions but not given a speaking slot. They can only speak in the open floor discussion

10 Press Release No. 11/2013, "Registration of Consumer Organisations Regulations, 2013", Telecom Regulatory Authority of India, 2013, accessed June 1, 2015 http://www.trai.gov.in/WriteReadData/WhatsNew/Documents/11-2013-Press%20Release%20on%20regulation%20on%20registration%20of%20CAGs.pdf

11 "List of Consumer Advocacy Groups registered with TRAI" Telecom Regulatory Authority of India, accessed June 1, 2015, http://www.trai.gov.in/WriteReadData/ConsumerGroup/Document/consumerref.pdf

12 "Manual Under Section 4(1) (b) of the Right to Information Act, 2005" Telecom Regulatory Authority of India, accessed June 1, 2015, http://trai.gov.in/WriteReadData/userfiles/file/rti/RTI-Act_TRAI-Website-06.03.13.pdf

13 Comments and counter comments submitted to TRAI can be viewed by public. On analysing the stakeholders who have been actively commenting on the QoS Regulations, it is noted that the service providers have been far more active than the CSOs.

14 Quality of Service Consultation Papers, Telecom Regulatory Authority of India, accessed June 1, 2015, http://www.trai.gov.in/Content/CONSULTATION/23_CONSULTATIONS.aspx

15 "Direction No. 301 – 1/ 2013 – PMR – QoS Oct 2013", Telecom Regulatory Authority of India, accessed June 1, 2015, http://www.trai.gov.in/WriteReadData/Direction/Document/direction-18102013.pdf

16 Bajpai V. and Schönwälder J., "A Survey on Internet Performance Measurement Platforms and Related Standardization Efforts", University of Bremen, accessed June 1, 2015 http://vaibhavbajpai.com/documents/papers/proceedings/lsmp-comst-2015.pdf