Cellular Operators Association of India

RSM/COAI/188
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Dear Sir

Sub: COAI inputs to draft regulations on "Standards of Quality of Service for Mobile Data Services Regulations, 2012"

This is with reference to TRAI's draft regulation on Standards of Quality of Service for Mobile Data Services Regulations, 2012" dated 9th July 2012.

In this regard, please find enclosed the detailed industry inputs on the same.

We sincerely hope that our submissions will merit your kind consideration.

Regards,

Rajan S. Mathews
Director General-COAI

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I. Preamble

a. The mobile sector in India is characterized by intense competition. As compared to other parts of the world, the number of service providers in a service area is the highest and the tariffs are the lowest. The mobile service is extremely affordable and the same is driving the take-up and usage of service.

b. The mobile market is also growing at a rapid pace with subscriber additions in the range of 8 to 10 million every month and the mobile industry faces resource constraints to cope with the high subscriber additions.

c. With low PC penetration of around 4% and high wireless tele-density (77%) mobile phone has become an alternative/best medium to provide data services to the masses. The adoption of smart phones and availability of content such as Facebook, Twitter, Youtube etc on mobile has encouraged wireless subscribers to use data services. However, the market is yet to reach a quantum to plan widespread networks. Thus, the data services over mobile phone have a promise for future growth in India. Voice is still the killer application which continues to drive current revenues and uses the maximum resources of the networks.

d. Moreover, the Indian operators face a major spectrum constraint. The average spectrum with an operator in India is much below the international average. No spectrum has been granted to the operators for the past two years. The last auction was in 2010 of 3G & BWA spectrum. In 2.1 GHz band, the operators just have only one carrier to provide 3G services, which takes care of both the R99 and HSPA handsets. This forces them to plan their networks in a much different manner than compared to their counterparts globally.

e. Internationally, there are no QoS benchmarks for Mobile data defined in Europe, Asian countries. This is despite South Korea and Japan having a large and very mature Data usage market.

f. India is a fledgling market from the data perspective and its utility. Applications, utilities, content, proliferation of Smart phones and access are still to develop. Despite the introduction of 3G and BWA, the demand beyond some top cities still has to take off. In such a scenario we have very limited experience available. The networks for mobile data are still to evolve and usage patterns still to emerge to determine where the demand exists. At this stage, to prescribe stringent standards for measuring and achieving benchmarks for data services, be it for 2G, 3G, EVDO or BWA, is premature. We may as a market, exchange the experience and growth in demand, however, achieving stringent benchmarks on a predominant voice network will impact the future development and growth of networks. **We suggest at this stage we should track the growth of data services to make a more informed regulation which will serve the consumers and protect the interest of all stakeholders including service providers.**

II. Impact of this Regulation

a. The draft Regulation, considers the mobile data QoS for an entire LSA whereas even now, data roll-outs are limited to some top cities and not the entire LSA (depending upon the demand). Hence, applicability of these regulations on the entire LSA too would be **incorrect and will force the operators to roll out the network in the areas where there is no demand/network or commercial viability**.

b. One of the biggest advantages of a data network is to maximize capacity utilization, however, if circuit switch principles are applied on the packet switching i.e. sparing a dedicated channel for data like voice, then the entire advantage of migrating towards an NGN environment i.e., data/IP network will be lost. We should observe trends to arrive at futuristic monitoring benchmarks to bettering the customer experience rather than dis-incentivizing growth of data networks.

c. Moreover, Network roll out decisions of licensees are dependent on two main aspects - Regulatory/Licensing conditions which the licensees are bound by and their own business case. The measure of QoS is dependent on roll out of the networks. Apart from meeting the license conditions, **the licenses cannot be forced to rollout their networks in areas, where there is no business viability.**

III. QoS should be driven by market forces

a. In a scenario of intense competition and MNP it is inherent, and now intrinsically built into the nature of the Indian telecom market environment for the operators to regularly monitor their networks to provide good Quality of Service to the customers. Moreover, with comparable tariffs and equivalent services, the operators themselves are under pressure to maintain their QoS in case they need to attract new customers as well as retain their existing customers. Hence Quality of Service (QoS) is driven by market forces rather than by Regulatory intervention.

In light of the above, it is submitted that as the competition increases and market evolves, **we should progressively move towards a regime of forbearance with regard to QoS for mobile rather than introducing new/ additional parameters of QoS, our aim should be to progressively reduce the parameters reported to TRAI.**

Notwithstanding, the above, our comments on the Mobile data services parameters as proposed by TRAI for existing subscribers are as below:

1. Service Activation/provisioning (Proposed Benchmark- 3hrs with 95% success rate)

The Authority would appreciate that operators are providing various modes (such as IVR, SMS, USSD, Easy Recharge and Call Center) to their customers for service activation/provisioning and the TAT (Turn Around Time) for these modes should be

measured differently. The activation TAT as per the present network experience is **12hours (with 90% success rate) for activation of services through call centre and within 24 hours, for activation through other offline modes such as web, IVR and SMS.** This activation/provisioning covers only back-end activities at service provider's end and does not cover any delay happening due to user behavior i.e. customer inability to download an application , handset compatibility etc.

It is therefore suggested that the benchmark should be within 12hours with 90% success rate for call centre and within 24 hours for activation through other modes such as IVR, web and SMS.

It may also be noted that in certain cases like provisioning of international roaming for data, credit worthiness, etc. is to be checked for the subscribers and in some other special cases, subscriber verification is to be conducted, which might take a little more time. Thus, such special cases should be exempted from these timelines.

2. **Successful data transmission download attempts (Proposed Benchmark >90%)**

AND

3. **Successful data transmission upload attempts (Proposed Benchmark >85%)**

a. While, we understand that the objective of these parameters is to ensure that the radio network does not have any problem in terms of data connectivity. However, TRAI should acknowledge the fact that the above parameters have direct bearing on the type of service being accessed, consumer/user behavior such as number of subscribers browsing the data services, low coverage area, location of the customer, peak/ off peak time, kind of device being used, external factors like availability of link between web server and the telecom network, availability of web server, website behavior, etc. Thus, keeping these factors in mind, meeting the proposed benchmark in normal/practical conditions is not feasible. Internationally also, no regulator has prescribed/set such benchmarks for data services.

b. As acknowledged by TRAI, these parameters can be checked under test environment with a dedicated server and dedicated bandwidth within the operator's Network. **We therefore recommend that these parameters should not be made mandatory, however, should only be voluntary for the operators should be strictly based on the test results being conducted under controlled conditions in a circle.**

c. Further, we suggest that below points should also be considered w.r.t. the measurement methodology of these parameters:

i. The measurement methodology proposed by TRAI using a test server and a test file is acceptable, however number of test probes at different locations will lead to huge cost burden for the operators, hence it is suggested to have a centralized server per

LSA.

ii. Only **FTP server based testing is suggested** (Web server based testing would be taxing for the operator).

iii. **File size (3G):** For download Testing 5 MB file size is acceptable however for Upload testing 500 KB file size should be used as per the general principle of IP.

iv. **File size (2G):** 200 KB for testing download and 60 KB for testing upload.

v. **No. of attempts:** 50 attempts per quarter

vi. In the measurement methodology document, the definition of 'unsuccessful' upload/download should be changed from within 60 seconds to within 120 seconds for the above recommended file sizes.

vii. The parameters shall be measured for 2G and 3G only.

Thus, it is recommended that this **KPI/parameter should only be for monitoring purposes and not be a part of QoS Regulation.**

4. **Minimum download speed (To be measured by the service providers and reported to TRAI)**

a. As acknowledged by the Authority, the speed of the packet data is dependent on various factors such as number of subscribers browsing the data services, low coverage area, location of the customer, peak/ off peak time, kind of device being used, external factors like availability of link between web server and the telecom network, availability of web server, website behavior, etc., which are dynamic in nature and service provider does not have any control on the same.

b. It is to be noted that the concept of minimum download speed cannot be there in a multiple access scenario due to the problems of clutter, interference, fading, etc. Further, the test results are taken from the test server by downloading/uploading a file, whereas the customer accesses the internet which is completely in an uncontrolled environment (No QoS guarantee).

c. **Hence, we should not advertise and create confusion in the market which will lead to major customer dis-satisfaction, which is avoidable.**

d. Internationally, no regulator has prescribed/set such benchmarks and has left it to the operator's discretion to adopt a measurement methodology that best reflect their operating environment and conditions. The excerpt from IDA Singapore publication dated Jan 30, 2012 w.r.t. Publication requirement for all ISPs is as below:

Quote

"IDA will not prescribe the methodology that ***ISPs should use to measure and compute the typical download speeds for publication,*** *..... This will allow some flexibility* ***for ISPs to adopt a measurement methodology that best reflect their operating environment and conditions".***

*"**IDA acknowledges that various factors can affect the broadband Internet access speed experienced by an end user and some of these factors may be beyond the ISPs" control**. For example, the location of the web content and the capacity provided by the content owner may negatively affect one's surfing experience if the content owner has not provided adequate capacity to meet the demand. Other factors like the device being used to surf the Internet (e.g., PC, mobile handset), the number of concurrent end users accessing the same content at that time and the types and number of concurrent applications running on one's device can also slow down one's Internet access speeds. For mobile broadband plans, access speeds may be further constrained by the inherent nature of wireless technologies. One's mobile broadband Internet surfing experience may be affected by the strength of radio signals at different locations. Different building structures may also weaken radio signals thus affecting users" surfing experience. <u>End users should bear these factors in mind when accessing broadband Internet services".</u>*

Unquote

We therefore suggest that this parameter **<u>should not be a part of QoS regulation</u>**.

5. **<u>Average throughput for packet data (Proposed benchmark- 90% of the subscribed speed)</u>**

a. **The Authority is proposing that an average throughput for packet data sh**ould be 90% of the subscribed speed. In this regard, it should be noted that the subscribed speed is a theoretical maximum speed under ideal conditions and should not be compared/used for measuring QoS.

b. Also, it is technically not feasible to specify a uniform average speed for Wireless data services across all wireless networks covering all service providers as data speed is being determined basis various factors which may be beyond service provider's control at any point of time.

c. We are able to identify very wide band of typical Average data speed which will not be useful for informing the customer, as it may be construed as misleading information since same is dependent on various factors which are dynamic in nature and service provider does not have any control on the same.

d. Therefore, we propose that while communicating data browsing speed details in customer facing communications incl. advertisements, we may inform the peak speed in the communication with the disclaimer. This disclaimer can be made mandatory for the service provider to specifically mention in all customers facing communications. The text of the suggested disclaimer is as follows:

"*The data browsing speed specified above is a peak speed. Actual Speed experienced by the Customer may vary and depends upon various factors such as Number of subscribers browsing the data services, low coverage area, location of the customer, peak/ off peak time, kind of device is being used, external factors like website behavior etc.*"

As far as this parameter is concerned, it is recommended that this **KPI/parameter should not be a part of QoS Regulation.**

6. **Percentage of Node B/ BTS carrying less than 80% of the average throughput in a license service area**

   a. Customer dependency and usage plays a very important role in the final throughput generated by the cell-site. This is because the throughput especially in 3G depends upon the type of handset, applications browsed; radio conditions etc and shall not always demands high speed services e.g. social media updates, emails which are the most commonly used applications require only data in kilo byte whereas the technology is capable of Mbps. Also the 3G technology as per the 3GPP norms grants speed (RAB) based on application necessity and need not always provide high speed.

   b. Therefore, this KPI is not meaningful and shall result in misinterpretation of customer experience measurement.

   c. Moreover, Network roll out decisions of licensees are business dependent, Regulatory/Licensing conditions which the licensees are bound by. Apart from meeting the license conditions, **the licenses cannot be forced to rollout their networks in areas, where there is no business viability.**

   d. Thus, it is recommended that this **KPI/parameter should not be part of the QoS regulation.**

7. **Latency (Audio <150 ms, video <100 ms; Data<250 ms, Data interactive <75ms)**

   a. This should be measured end to end from sending point to receiving point and back to sending point (round trip). Moreover, we cannot measure the latency for real-time services like audio and video. The measurement method stated in the TRAI's measurement methodology document can only be used for test files and not for real-time services.

   b. Moreover, Latency is a network parameter and the only service impact it has is on a pre-negotiated QoS.

c. We also submit that the latency should be measured /kept separately for different technologies as below:

2G Latency (EDGE) - <=450 ms

3G / HSPA <= 200ms

8. **PDP context Activation Success rate (Proposed benchmark >=95%)**

We agree with the proposed benchmark However, PDP context activation success rate should be measured at the SGSN level.

9. **Drop rate (proposed benchmark <=2%)**

We believe that drop rate parameter is not very relevant for a QoS measurement for "Packet services". However, if at all Authority wants to keep this parameter then considering it as network level KPI, it is suggested to keep the drop rate at 10% initially. This will change once the operators start rolling out in smaller town and cities and rural areas and with the further growth of the data services in the country. Thus, this KPI may be reviewed later once the growth of data services increases significantly.

This KPI shall be reported based on statistical measures (counters) only and not through drive test.