

ITU Workshop on Telecommunication Service Quality Regulatory Frameworks and Experience-Driven Networking

Geneva, 26 November 2018

Programme and presentation material available at

<https://www.itu.int/en/ITU-T/Workshops-and-Seminars/qos/201811/Pages/Programme.aspx>



Takeaways and Conclusions

1. The 53 countries who responded are considered relatively higher than previous surveys from ITU-T SG12 yet falls short of being representative of the 193 ITU countries and regions.
2. 77% of the respondents are involved in Regulatory Frameworks with more focus on QoS than QoE, various methodologies depending on the service, varied enforcement and publication strategies.
3. Drive tests are dominantly used to assess mobile networks on annual basis whereas fixed networks are reported on monthly basis using operator reports.
4. Some of the respondents requested assistance from the ITU capacity building, consultancies, workshops and Database for benchmarking of Regulatory Frameworks and practices

Suggestions to ITU-T SG12

1. ITU-T SG12 should identify QoS and QoE parameters for each service where possible and define them as a standard
2. ITU-T SG12 should determine measurement methodologies and equipment for each parameter defined.
3. ITU-T SG12 should give reference targets measured for each parameter
4. ITU-T SG12 should provide reference supplements on enforcement and publication approaches.
5. ITU-T SG12 would launch Questionnaire on annual basis using experts who attend SG12 as contact points as well as ITU Regional and Area offices to facilitate responses.
6. ITU-T SG12 to embark on Workshops and Seminars in Arab, CIS and Asia regions
7. ITU-T to provide a reference database for updating Regulatory frameworks and practices.



Takeaways and Conclusions

1. Countries take different approaches to QoS/QoE regulation depending on the market status, legal framework, etc
2. Some approaches are oriented to enforcement and sanctioning while others focus on transparency and user's empowerment
3. With new technologies, come new requirements!
4. In 5G, speed is no longer the main concern, other parameters are becoming relevant for QoE.
5. QoS/QoE information needs to be understood from a non-technical perspective

Suggestions to ITU-T SG12

1. Create references to national frameworks for service quality regulation
2. Take into account that the new technologies have different requirements (ex. Latency and delay in 5G)
3. An standardized IP network measurement framework is needed (take into account new protocols)
4. How to inform QoS/QoE results to the final user.
5. Tools to empower the users are needed as well as capacity building

Takeaways and Conclusions

1. Operators agree that non-binding surveys are important because they influence the Market and Business, BUT they need to use Standards (not hidden methods), recognize Statis. Ties!
2. Hard to translate from QoE back to QoS and Network Action, BUT all measurements (even surveys) result in network tuning and improvements!
3. When NOT to test: Price more critical than QoS/QoE.
4. When to STOP testing: Consistent High Quality results (fixed access on fiber facilities).

Suggestions to ITU-T SG12

1. When we supply a long list of KPIs, if we can provide priority in a given context, it will help Net operations.
2. We question whether surveys really represent user experience! Recs could first assess usage patterns before deciding sample plan and apps tested.
3. Definitions of QoE MUST be well-defined! UE quality also critical!
4. Need to include Service pre-requisites in Assessment (e.g., DNS resp. time)



Session 4: Performance indices to guarantee superior broadband quality of experience

Takeaways and Conclusions

1. Need to transition from KPI to KQI, QoS to QoE
2. New video streaming quality assessment tools such as P.1203 can provide valuable information on network health, as well as diagnosing root cause of problems
3. Entire chain determines the QoE, inc. CDN and UE
4. “Average” KPI’s are meaningless
5. Need to understand what drives overall customer perception of quality

Suggestions to ITU-T SG12

1. Client-centric monitoring as complement to network-centric solutions
2. New streaming assessment models for 4K/UHD and new video codecs
3. Focus on how to intelligently combine KPIs, similar to ETSI work
4. How to standardize weighting, to provide unique results



Takeaways and Conclusions

1. To perform QoE assurance using ML and data analytics it's advised to:
 1. Do not try to learn too much
 2. Use knowledge gained from models and any available side information
 3. Do not ignore the lower layers of the communication stack
2. E.FINAD overview, methodology and models
3. Singapore experience in using AI and ML to assess mobile network QoE
4. Overview of ETSI ISG on Experiential Networked Intelligence

Suggestions to ITU-T SG12

1. Establish liaisons with ETSI ISG ENI, FG ML5G and other groups in this space



**Welcome of new SG12 participants and
tour of ITU premises:**

**27 November, 10h30,
ITU Montbrillant Reception Desk**



**ITU-T Study Group 12 opening plenary:
27 November, 11h00, Room C**

