# Take away, summary and conclusion from the QoS and QoE assessment and benchmarking for mobile networks Session

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# Outline of this Presentation

❖General Overview of the topic for this Session

❖List of Presenters and topics presented

❖Important Take Away from the different presenters

❖Summary & Conclussion

# General Overview of the Topic for this Session

❖ **QoS & QoE assessment and benchmarking for mobile networks**

➤ **Quality of service (QoS)** is the description or measurement of the overall performance of a service, such as a telephony or computer network or a cloud computing service, particularly the performance seen by the users of the network.(Basic definitions from wikipedia) This is considered objective and results based.

➤ **Quality of Experience** (**QoE**, less frequently **QoX** or **QX**) is a measure of the delight or annoyance of a customer's experiences with a service (e.g., web browsing, phone call, TV broadcast).QoE focuses on the entire service experience; it is a holistic concept, similar to the field of User Experience, but with its roots in telecommunication. .(Basic definition from wikipedia). This is considered subjective and base on customers perspective and how they feel.

❖ Assessment and Benchmarking for Mobile Networks: The session emphasized the importance of assessing and benchmarking Mobile Networks. This session focused on how QOS & QOE of Mobile Networks are assessed and best practice of benchmarking mobile Networks.

# List of Presenters and Topics Presented

❖ Brice Murara, RURA, Rwanda: *MNO Network Performance, QoS , QOE Enforcement , Rwanda's Experience*

❖ **Chuma Vuningoma**, Network Director, Airtel, Rwanda: *Regulatory frameworks for QoS and QoE assessment and benchmarking for mobile networks*

❖ **Samuel Agyekum**, NCA, Ghana: *Addressing QoS challenges within the African Sub-region: A 3-tier approach*

## Important take away from *MNO Network Performance, QoS , QOE Enforcement , Rwanda's Experience presentation*(Brice Murara, RURA, Rwanda)

❖ There should be the legal & regulatory aspects for QOS/QOE assessment. The parameters, KPI and threshold monitored should be included in operators license.

❖ Drive Test can be carried out. The presenter also mentioned that Network management system can be done as it gives Continuous monitoring (24 x7). The importance of drive testing to operator as compared to regulator described with but both focusing on customer satisfaction

❖ The Different Key Performance Indicators to be monitored were listed  but categorized under the following: Network Availability & Accessibilty, Service Accessibility, Retainability & Retainability for voice, SMS & data.

❖ Regulators are normally not familiar with Network troubleshooting, Planning & Optimization techniques.

❖ In order to publish measurement findings/results, it is a MUST to have confidence in the findings, network problems, possible causes,….

# Important take away from *Regulatory frameworks for QoS and QoE assessment and benchmarking for mobile networks presentation*(Chuma Vuningoma, Network Director, Airtel, Rwanda) *(Cont.)*

## Objectives of the Regulation

❖ To improve service quality

❖ To maintain service quality, while recognizing environmental and operating conditions

❖ To make QoS information available to Customers

❖ To improve operation and performance of interconnected networks

❖ To assist the development of related telecommunications markets

# Important take away from *Addressing QoS challenges within the African Sub-region: A 3-tier approach presentation*(Samuel Agyekum, NCA, Ghana)(cont.)

- **Perspectives to QoS Issues & Challenges**

❖ Policy- This perspective considers issues that can be attributed to the mandate and activities of relevant ministries, agencies and departments. The policies and regulations are important as they'll serve as the reference guidelines in assessing and benchmarking QOS/QOE of Mobile Networks

❖ Regulatory- This aspect considers issues that are influenced by the interventions or otherwise of the telecom regulator. The role should be played by the regulators in assessing and benchmarking QOS/QOE of Mobile Networks.

❖ Operational- This aspect considers issues that are contributed by Mobile Network Operators and Service Providers (E.g. Cellular Mobile (2G) licensees, 3G and BWA (4G) licensees)

# Summary & Conclusion

❖ The legal tools needs to evolve as new services are introduced frequently. The regulations and laws should be updated frequently.

❖ In order to increase the reliability of results , the QoS Monitoring Team of regulatory authority has to have necessary skills in Technology and Monitoring System. Training necessary from time to time in order to be updated.

❖ Services and KPIs to be measured need to be clearly defined and agreed between Regulators and operators.

❖ It is also confirmed and agreed that for proper QOS/QOE assessment and benchmarking it is good to make use of drive testing ,Network Management and customer surveys.

❖ There should be a systematic method of evaluating QOS issues prevalent in the African Sub-Region considering ITU definitions  and standards.

❖ There should be a synergy and working relationship between the 3 stake holders i. e Policy Makers, regulators and Operators

# Thank You