

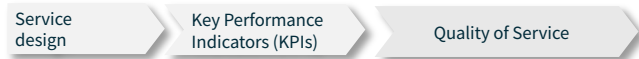
# Why QoE and User Experience Matter

From Key Performance Indicators to Real User Experience

## QoE brings your users into focus

Quality of Experience (QoE) is the **degree of delight or annoyance** of the user of an application or service (ITU-T P.10).

From a provider's perspective, you would typically measure quality with Key Performance Indicators — but these values are intended for a technical audience:



By using Key Quality Indicators, you take the perspective of your user. KQIs reflect the real customer experience:

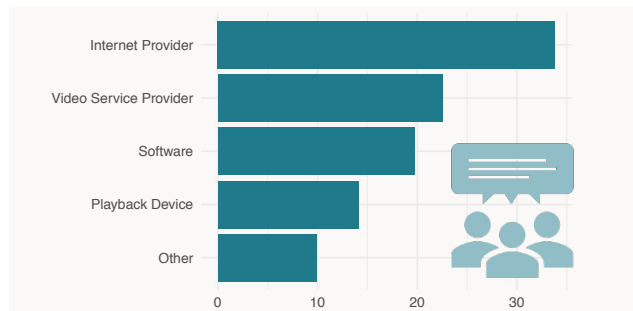


QoE-based service monitoring helps you identify bottlenecks and customer satisfaction issues. By increasing QoE, you can:

- Improve user satisfaction
- Increase engagement
- Prevent churn

## Find out what your customers care about

If you want to understand your users, **not only how** they perceive your service, but also their problems and needs, **subjective experiments** will deliver the right answers.



*Who do users blame for video quality problems? In one of our laboratory studies we confronted users with real video streaming issues. A survey among the participants showed that more than 30% of customers mostly blamed their Internet provider for issues during video playback.*

In a laboratory experiment, you could ask users for **direct feedback** on your service, including problematic cases such as poor video quality or network issues. Our academic partner TU Ilmenau offers testing services within laboratories equipped according to international standards.

Our approach consists of using this subjective data to **develop QoE models** that can predict the customer experience — without the need to constantly ask users for feedback.

## Want to know more?



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## Measure QoE in a customer-centric way

To get a view on your service QoE, we:

- Perform measurements in a customer-centric fashion, either from **real user devices**, or based on **automated network probes**
- Analyze the raw data with **the right QoE model** for your service
- Predict a **Mean Opinion Score (MOS)** that reflects the user QoE

Based on technical parameters such as video loading times or video coding settings, we can therefore quantify how a user would have rated his or her experience.

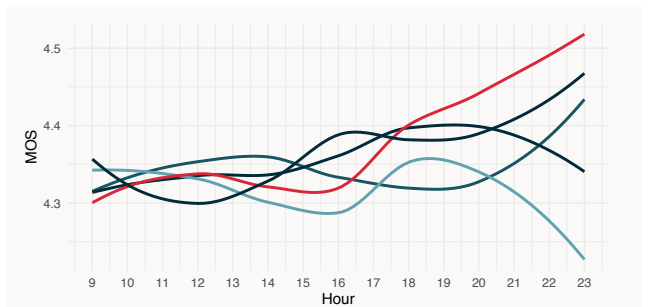
Measurements can be aggregated, filtered, and visualized. The MOS then serves as an easy-to-understand indicator for the overall service quality, as experienced by the user.

Together with the MOS, you get diagnostic data and QoS measures to help you perform root cause analyses for service problems, such as loading times and network statistics.



## Know where you stand against competitors

QoE measurements can help you understand how your service offerings compare against others. The data is based on automated measurements or real users via crowdsourcing campaigns.



*The above chart shows real data based on 4,000 measurements we collected at German customer homes during 2019. While others struggle to deliver the same video quality during peak hours, one ISP clearly delivers better video quality (MOS) throughout the evening.*

## What we can do for you

- **Model implementation:** Choosing or developing the right QoE model for your video streaming or web service, based on state of the art and standardized technologies
- **Measurement:** Setting up the entire measurement chain — from the client to data storage and visualization
- **Service analysis:** Compare your service against competitors from a QoE perspective, providing diagnostic data and root cause analyses
- **In-depth experiments:** Performing subjective QoE experiments together with our academic partner Technische Universität Ilmenau

In collaboration with

