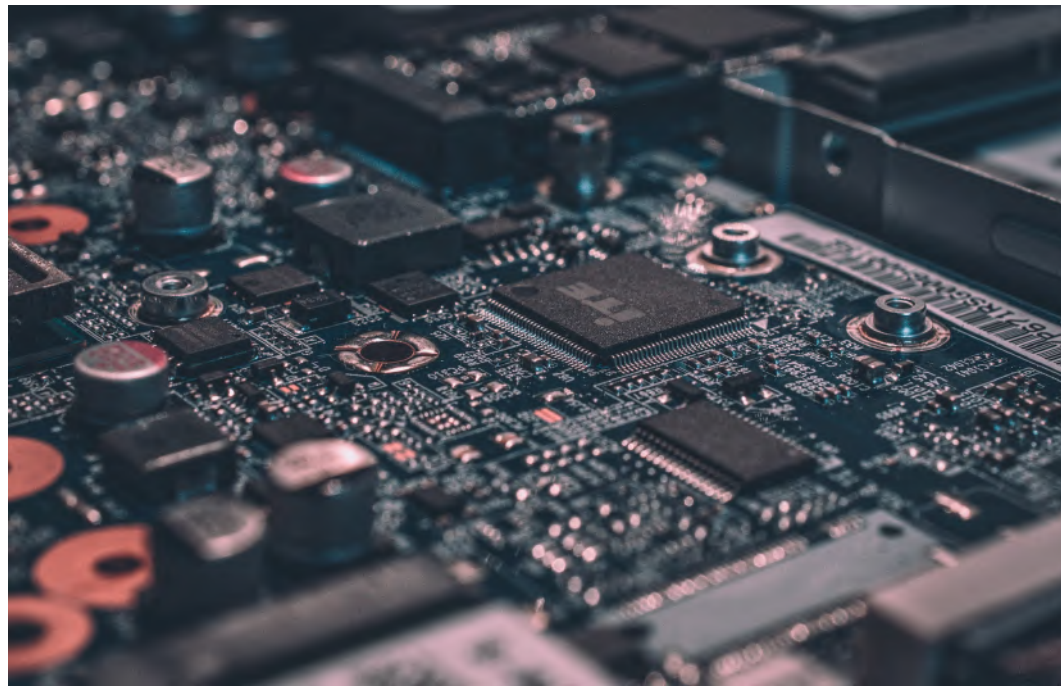


Application Aware Root Cause Analysis

A Quality of Outcome user trial with Comcast customers

Bjørn Ivar Teigen Monclair
bjorn@domos.no

Quality of Outcome:
One Network Quality framework - three audiences



Vendors and Operators

Precision
Repeatability
Composability



Applications

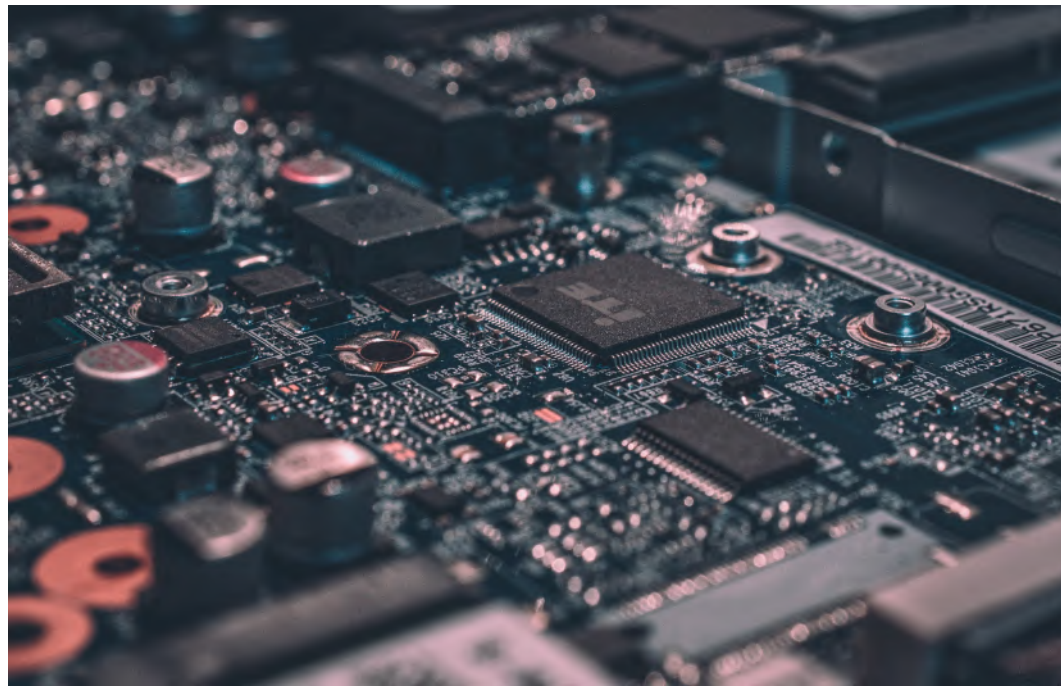
Want network to not cause problems
Want to help the end user succeed



The end user

Is the network causing problems?
If yes, how do I fix it ASAP

Quality of Outcome:
One Network Quality framework - three audiences



Vendors and Operators

- Precision
- Repeatability
- Composability

Quality attenuation (TR-452.1)



Applications

- Want network to not cause problems
- Want to help the end user succeed

Expected stability + root cause analysis



The end user

- Is the network causing problems?
- If yes, how do I fix it ASAP

QoO score + root cause analysis

Methodology

- Email sent out to existing Comcast customers
 - Would you like to participate in study on app performance.
 - Note. High participation rate!
- They get: A new router, 200\$ gift card, to be part of the study
- Initial questionnaire in intro email - 300 respondents
- Random selection of 25 participants
- New Router shipped, with instructions on setup.
- Normal usage for a week (no optimization or anything, only measurements)
- They had have at least 4 devices connected for a week to get the post-trial questionnaire
- Participants got the tool with a 1 min explainer video. Next they answer questionnaire.
- [Report](#)

Known Weaknesses:

- Selection Bias
 - Gift card is a tactic to avoid getting only "geeks" (a common problem for these types of studies) and to get a more representative population
- Low N
- Domos does not do device fingerprinting and many devices in the tool would only show up as mac address

What if? App Performance per Device

App performance varies by app type and time (due to location and usage). Use this tool to explore how different apps perform over time.

Select application type:

VIDEO CONFERENCE

GAMING

STREAMING

Select time period:

HOUR

DAY

WEEK

Top ways of improving your network



1. Improve **9** devices by up to **58%** each with **higher bandwidth**
2. Improve **3** devices by up to **13%** each with **a WiFi extender**
3. Improve **1** devices by up to **5%** each with **app prioritization**

Improve by up to **+50%** with higher bandwidth



23 hours ago

now

Improve by up to **+57%** with higher bandwidth



Questionnaire — How did people like QoO?

People like QoO

86%

Says QoO more **accurately** reflects experience than their bandwidth

14% neutral - 0% negative

100%

Says the tool that showing network quality in QoO is **better** than speedtest and latency and jitter

86%

Says it is somewhat, very or extremely **important** that QoO is independent

86%

Would be likely or very likely to **recommend** the QoO tool

to a friend or colleague

How well does QoO match your experience?

