

TIM BRASIL

ITU Workshop on Telecommunication Service Quality

Istanbul, Turkey, 3-4 September 2018

Customer Experience - CEx

A path of TIM Network Evolution

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Agenda

— **TIM Brasil**

About us

Context & Concept

Existing scenarios

Benefits

Quality and information usage
Associated costs reduction

Multi Collectors Project

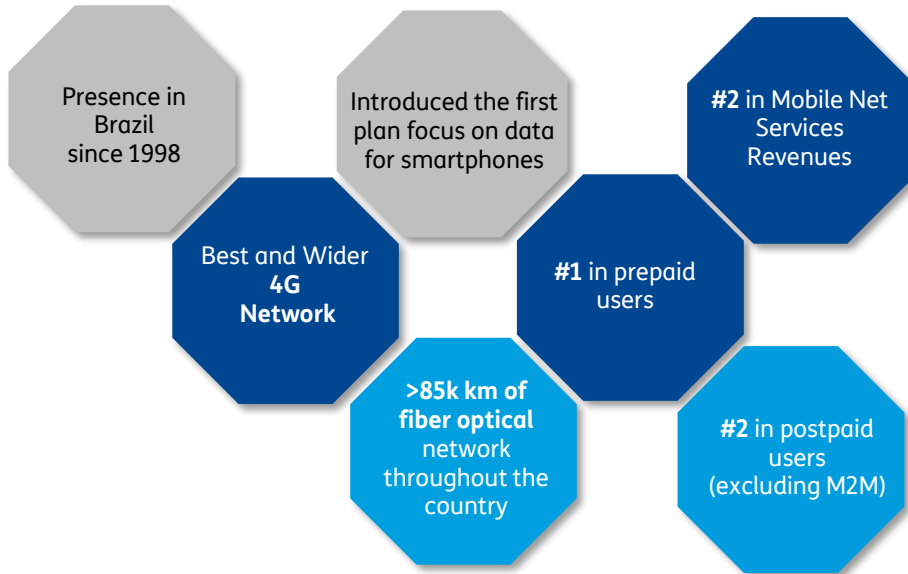
Highlights
Measurement evolution

ANATEL

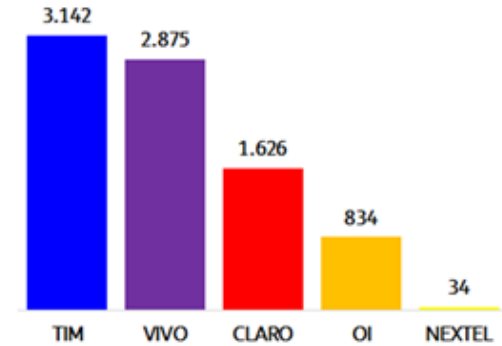
Mobile indicator
Broadband indicator

TIM Brasil

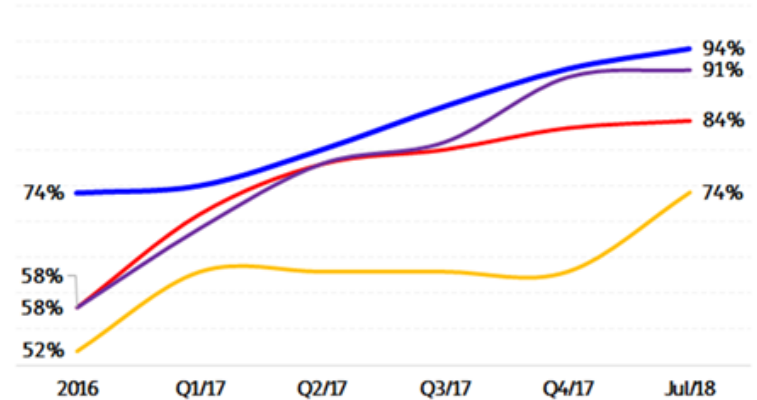
About us



4G Coverage View Jul/18 (Cities)



4G Population - Comparative Other Operators



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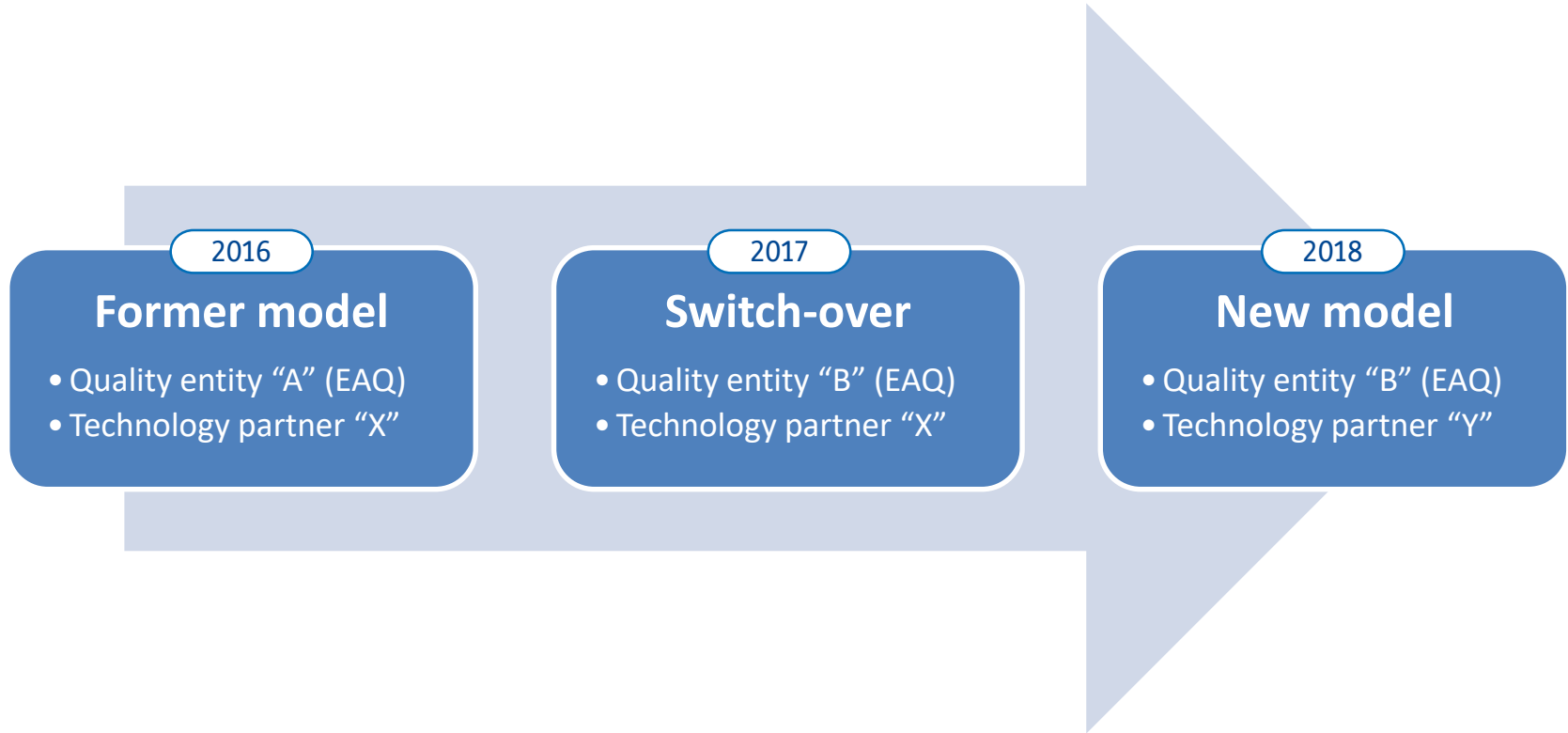
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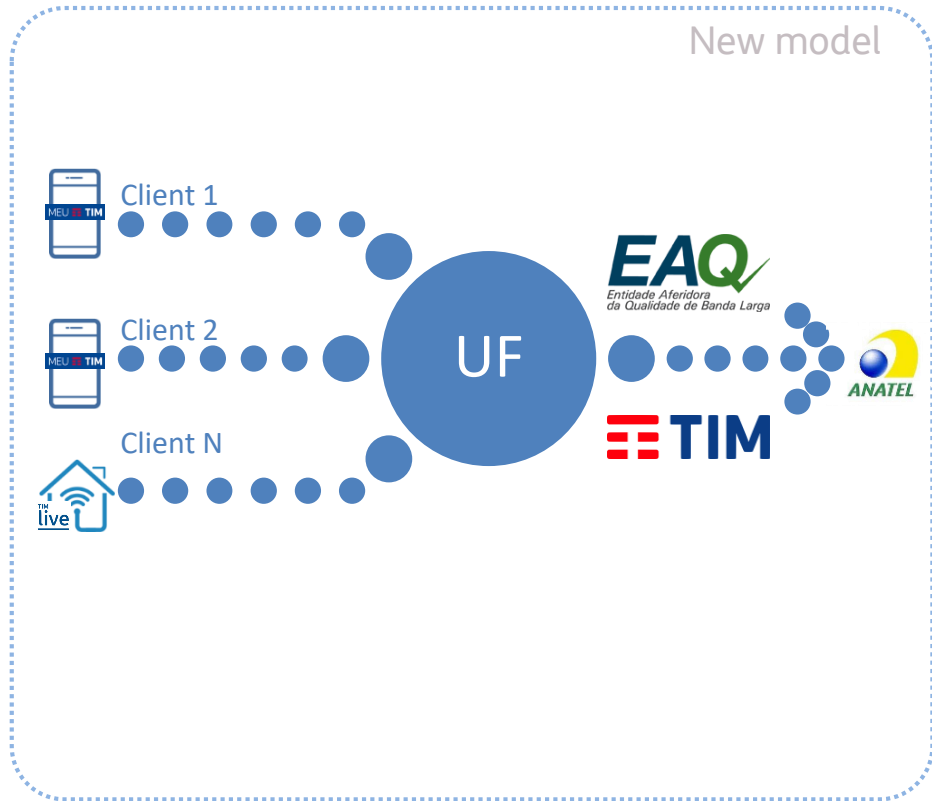
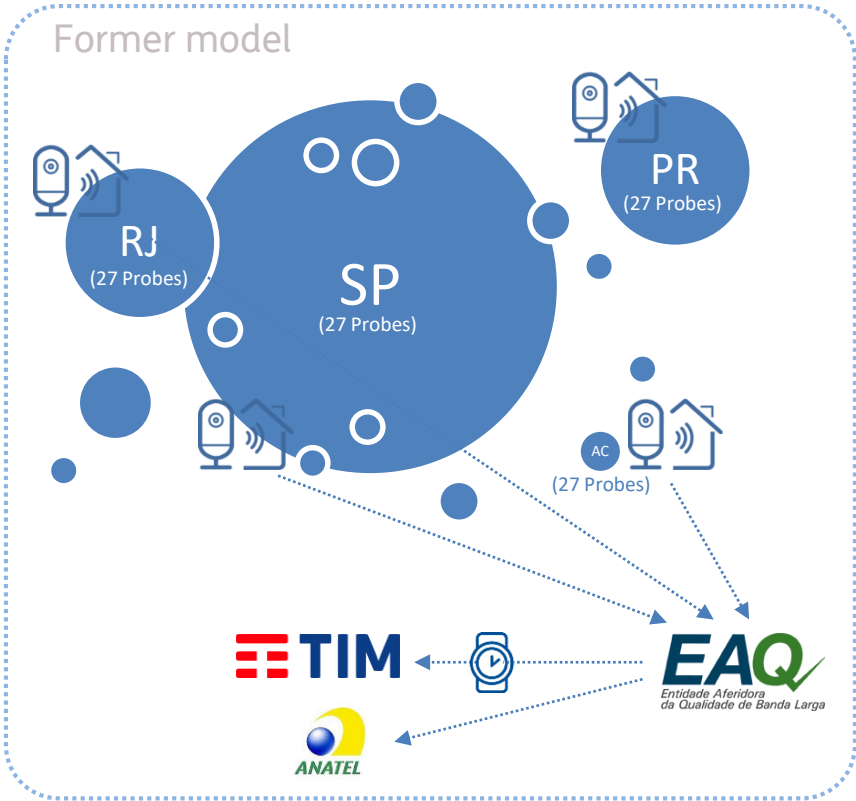
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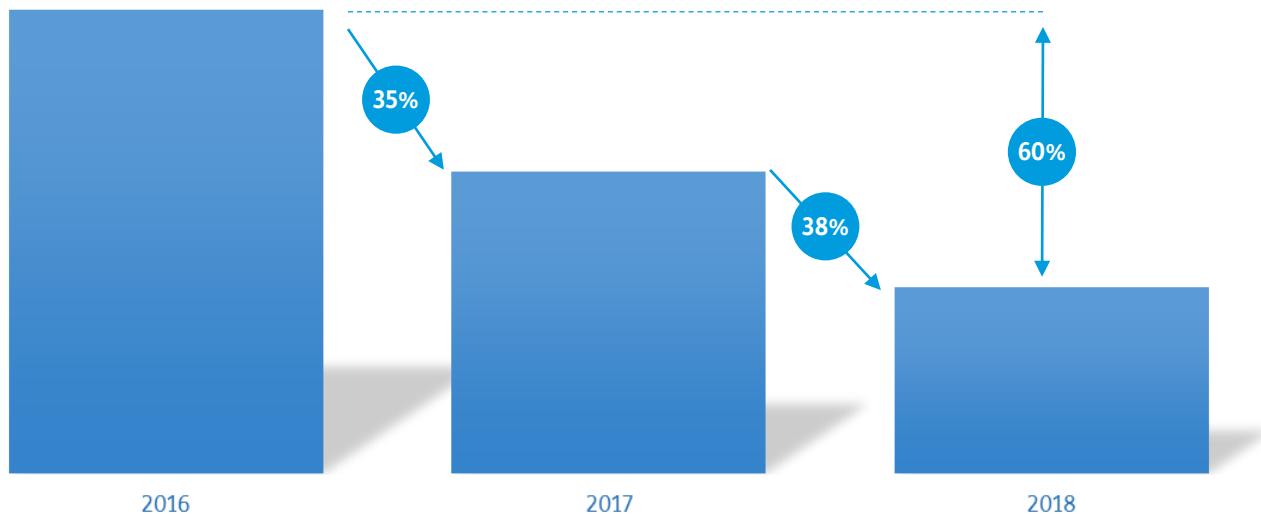
Quality and information usage



Benefits

Associated costs reduction

EAQ costs evolution



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Multi Collectors Project

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Multi Collectors Project

Highlights

- ✓ Dedicated servers to each Operator project
- ✓ Embedded solution, not dependent on volunteer membership
- ✓ Stand-alone and centrally management
- ✓ Greater representativeness of collected indicators from customer experience perspective
- ✓ Daily export of performed tests with sufficient detail for reporting, identifying offenders and effective triggers for corrections
- ✓ More than 1 million measurements/month, distributed by 3.296 municipalities throughout the country (jul-2018 data)
- ✓ Technical definitions with more effective participation, related to methodology and technological partners

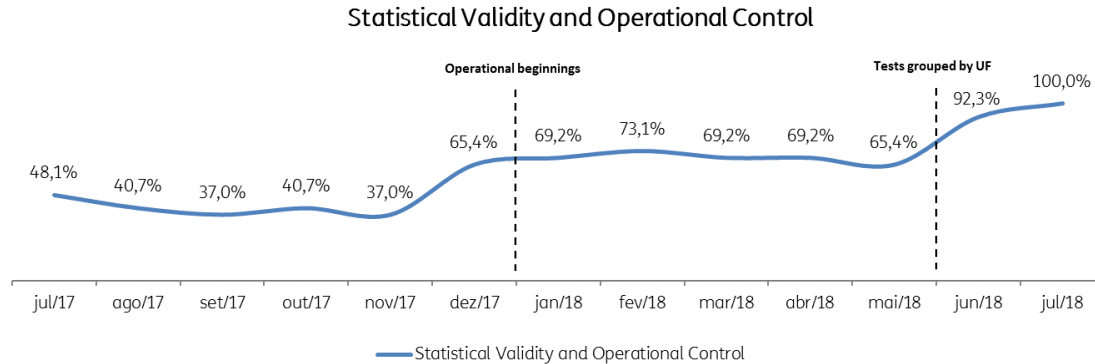
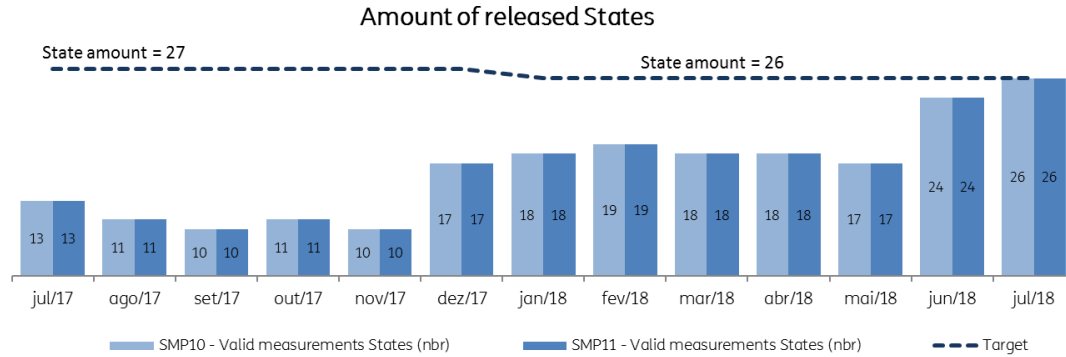


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Multi Colectors Project

Measurement evolution



Multi Collectors Project

Measurement evolution



Fixed probes without location identification, making it impossible for any analysis, diagnosis and improvement action

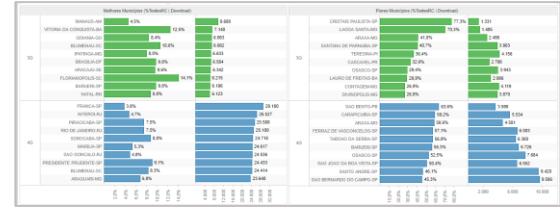
Basic KPIs and low capillarity (Network Technology used, Device Technology, Download and Upload Rates, Latency, Signal Level)

Mobile probes with better diagnosis possibilities actions for improvement



Experience KPIs (Network Technology used, Device Technology, Download and Upload Rates, Latency, Jitter, Packet Loss, Quality of Coverage, etc.)

Possibility of creating georeferenced accompaniments and also to correlate the results of the tests with KPIs coming from other sources of information of the own operator (Call Trace, CDRs, Signaling, etc.)



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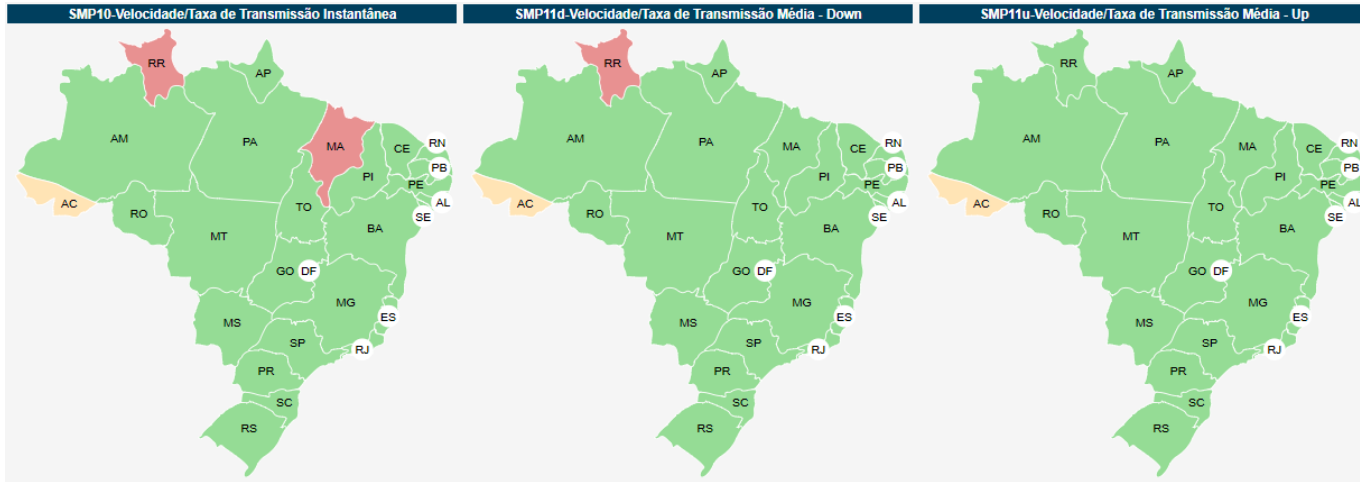
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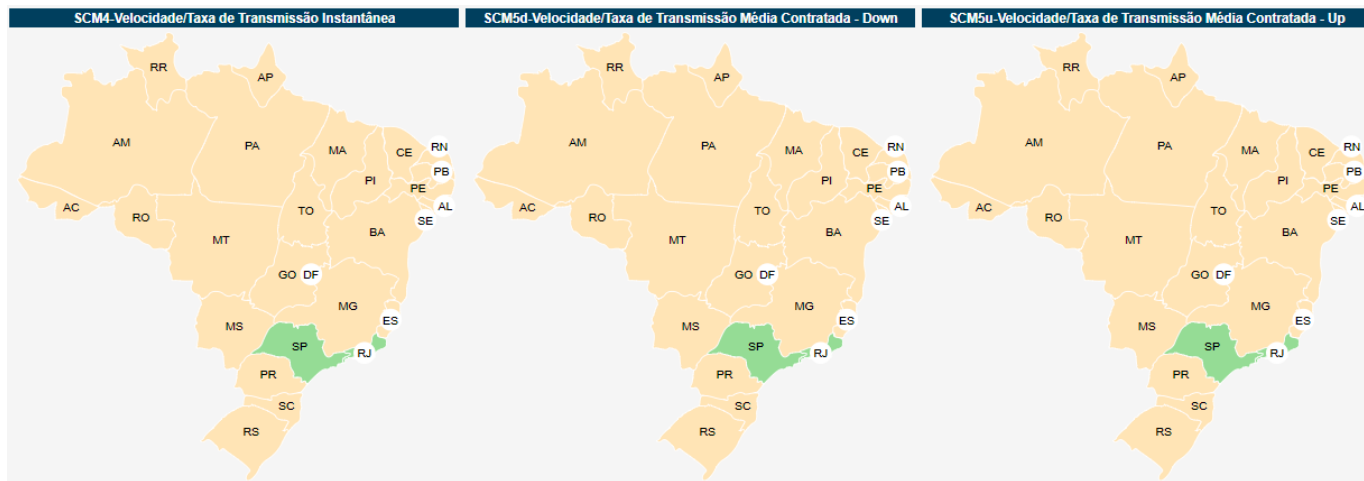
Mobile indicator
Broadband indicator

By jul-2018, ANATEL was able to release all mobile Federal States indicator

* TIM has no obligation to measure the indicators in Acre, as we do not have the minimum number of clients defined by the regulation



By jul-2018, ANATEL was able to release all broadband Federal States indicator



Thank you



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