

Dados de QoE, satisfação do cliente e NPS



Testes de Velocidade e Crowdsourcing



Network Performance Data



Network name
SIM Code
MCC/MNC



Connection types
Wi-Fi BSSID
RSSI
Wi-Fi security
Wi-Fi speed
Frequency



Server name
Sponsor name
Country
Latitude/longitude



User: country/region
Sub/sub-subregion
City
Postal code
Latitude/Longitude
Distance to server
Location accuracy



Download speed
Upload speed
Latency
Jitter
Packet loss



Traceroute IP
Hop latency

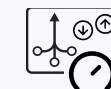
Signal Data



Cell ID
Cell type
PCI
TAC
LAC
CID
PSC
UARFCN
ARFCN
EARFCN
BSIC

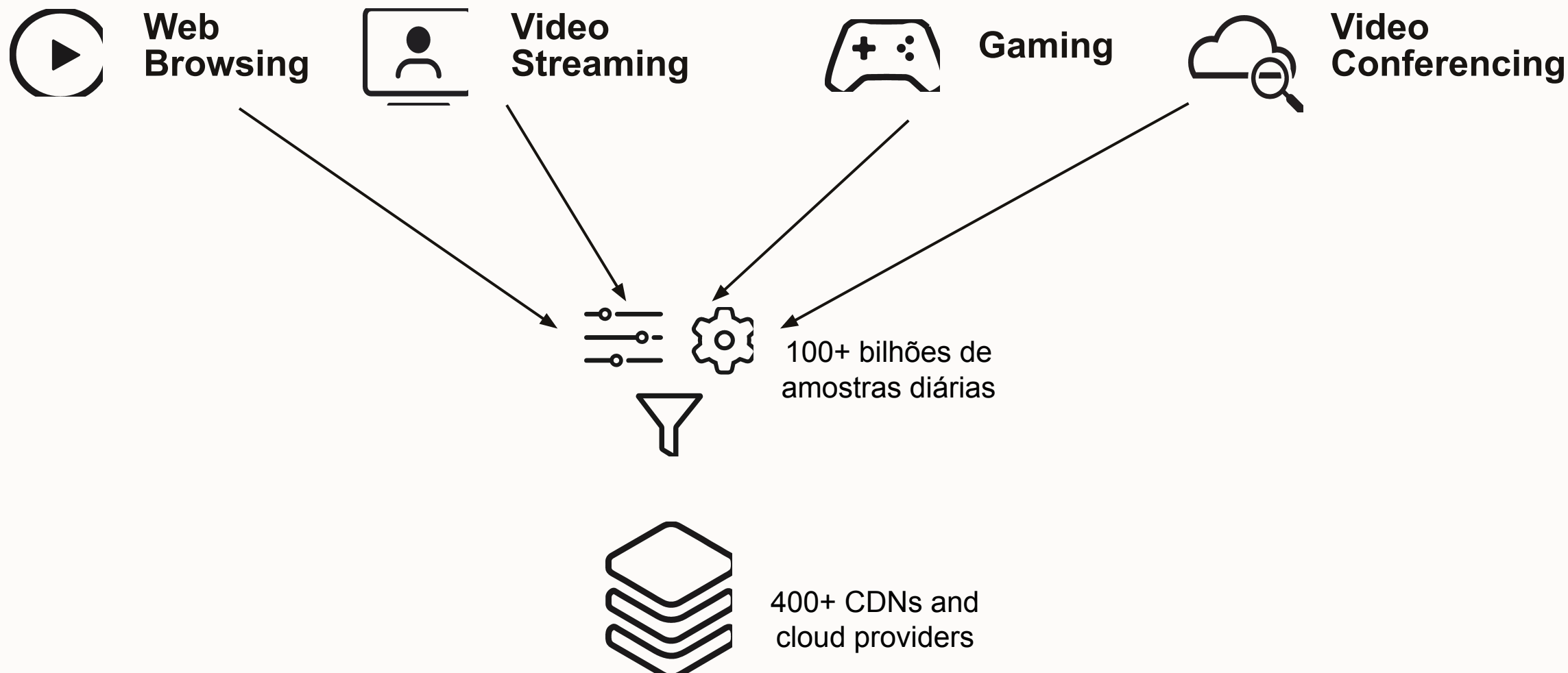


ASU level
dBm
Signal level
LTE timing advance
CDMA
EVDO info
SNR
RSRQ
RSRP
CQI



Carrier aggregation
Cell bandwidth

QoE de Aplicações de Uso Real !



QoE de Aplicações de Uso Real !



Web
Browsing



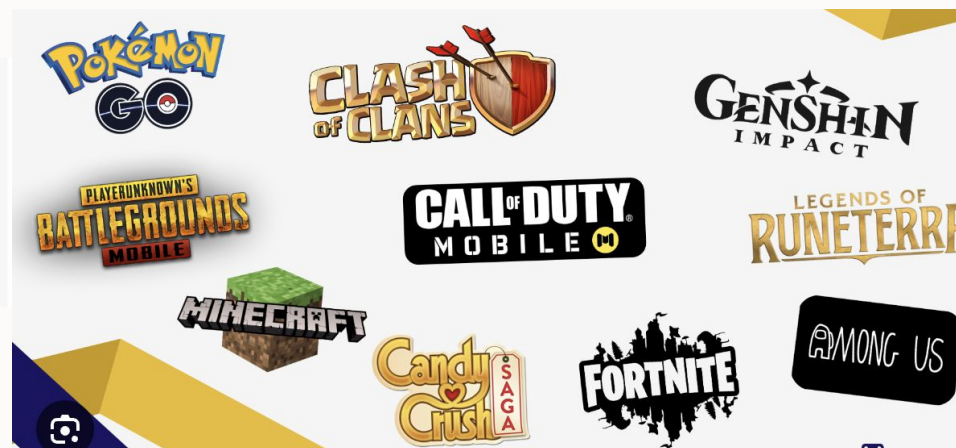
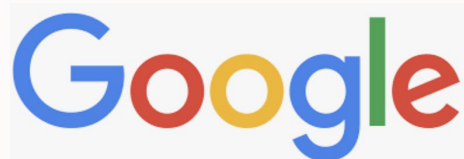
Video
Streaming



Gaming



Video
Conferencing



Métricas de QoE



**Web
Browsing**



**Video
Streaming**



Gaming



**Video
Conferencing**

- Page load time
- Time to first byte
- Page load success

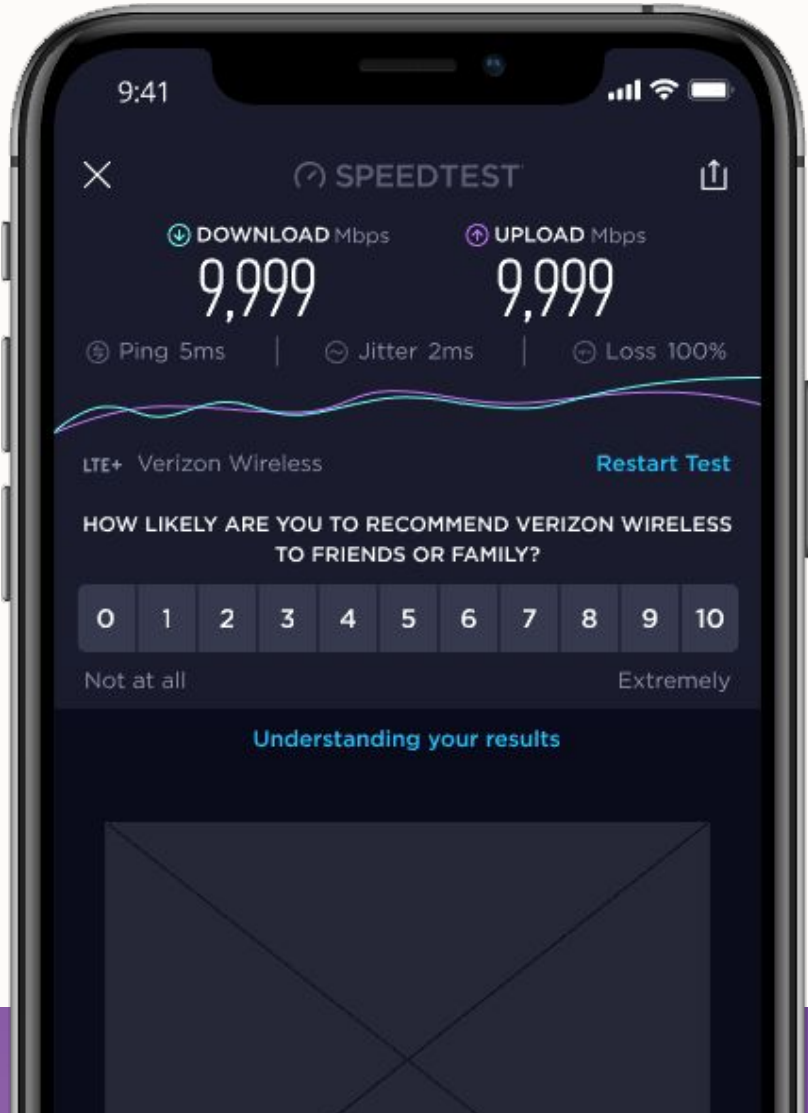
- Video start time
- Rebuffering
- Resolução
- Video start failure

- Latency
- Jitter
- Packet Loss

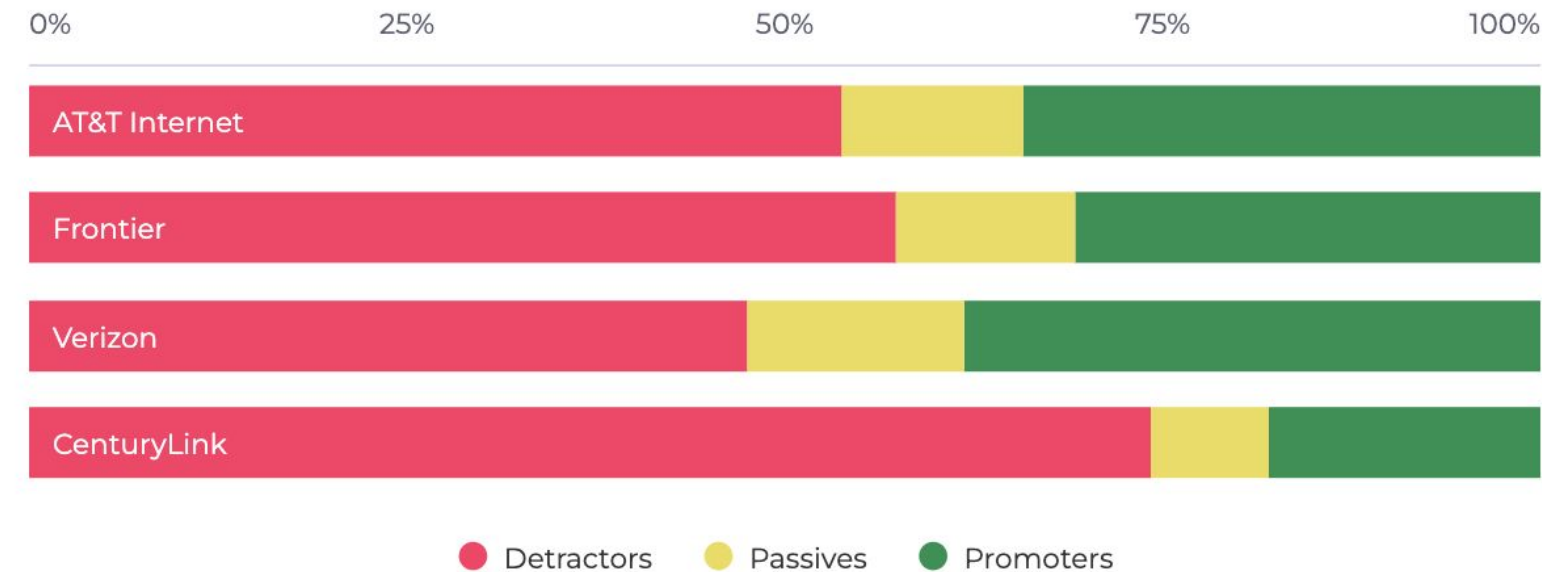
- Latency
- Jitter
- Packet Loss



Net Promoter Score

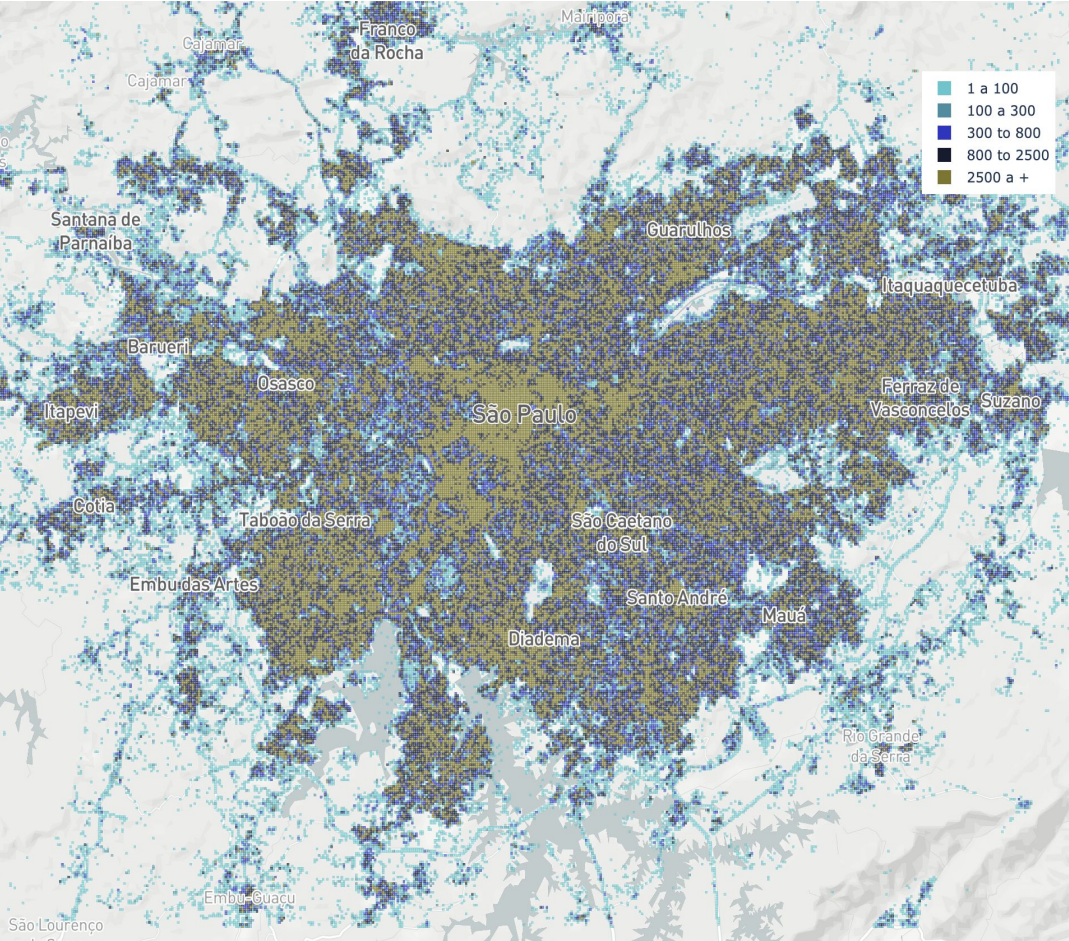


▼ NPS Distribution

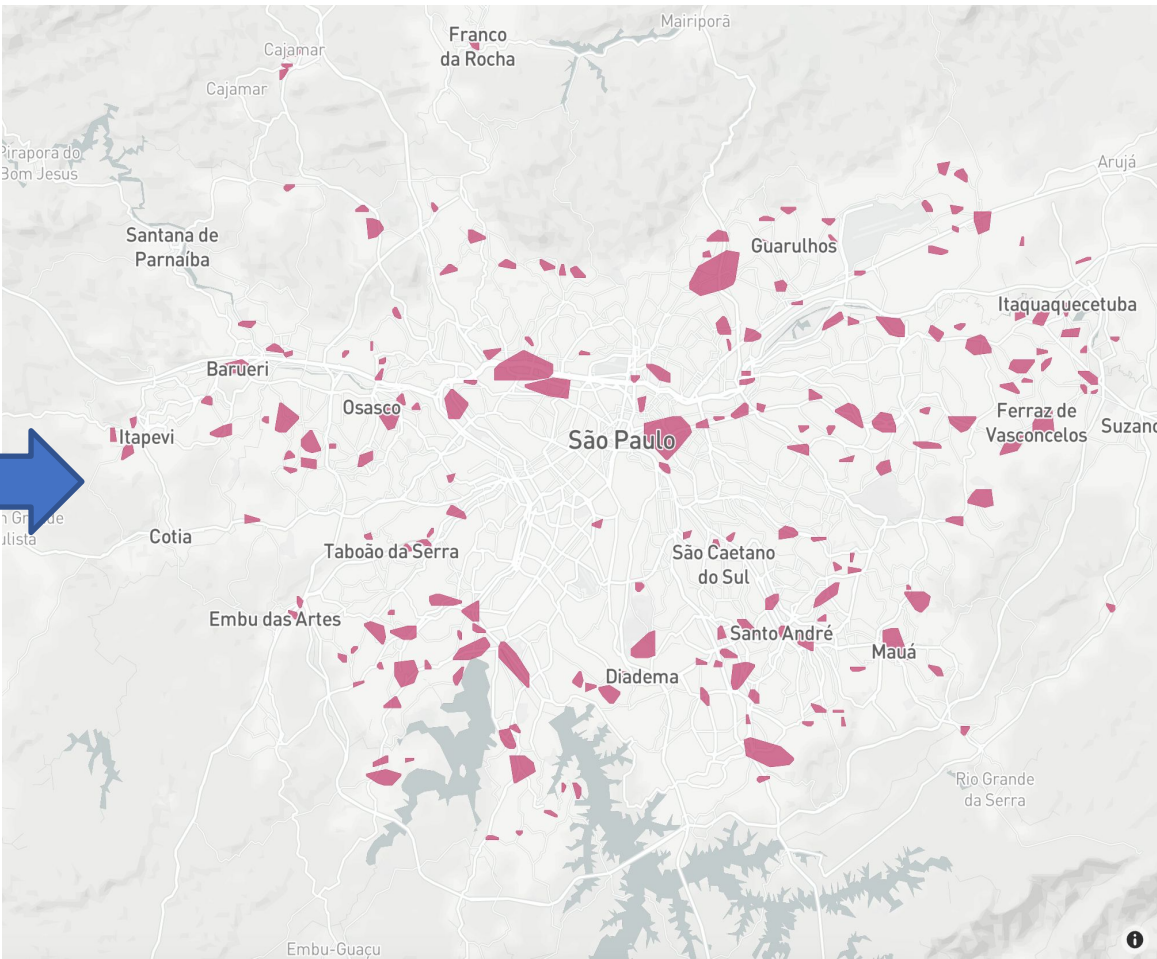


Identificação de Clusters de Baixo QoE

Dados de QoE



194 Clusters



Priorização de Clusters de Baixo QoE

Ranking de prioridade por polígono

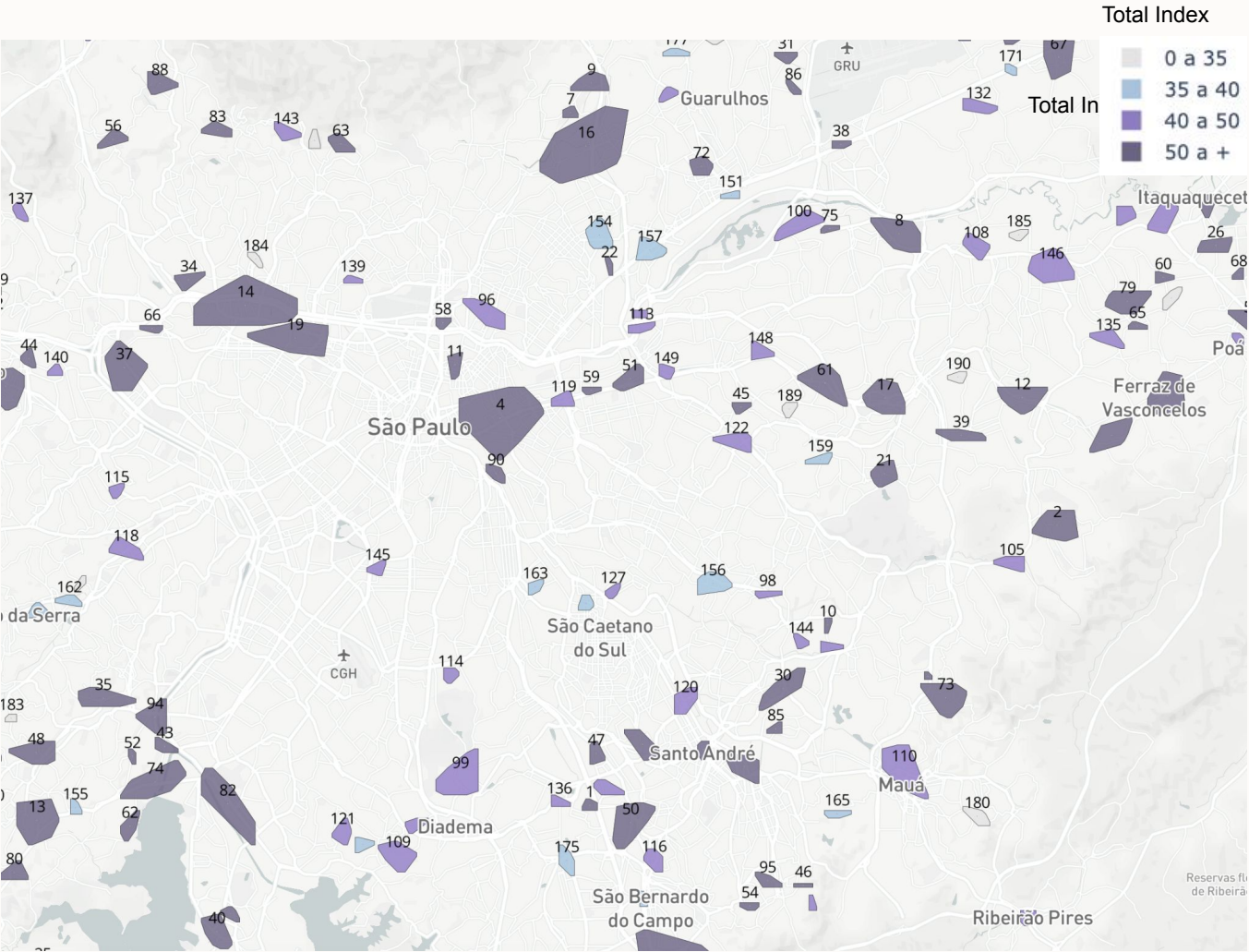
- Download **Throughput** (Mbps)
- **Web** Page Load Time (ms)
- **Gaming** Latency
- **Video Streaming** Time to Start
- **Quantidade de amostras**

$$Total\ Index = \sum_{k=0}^n weight_k * feature_k$$

Total Index	Priority	Polygons
60 to +	P0	8
50 to 60	P1	37
40 to 50	P2	43
0 to 40	P3	20

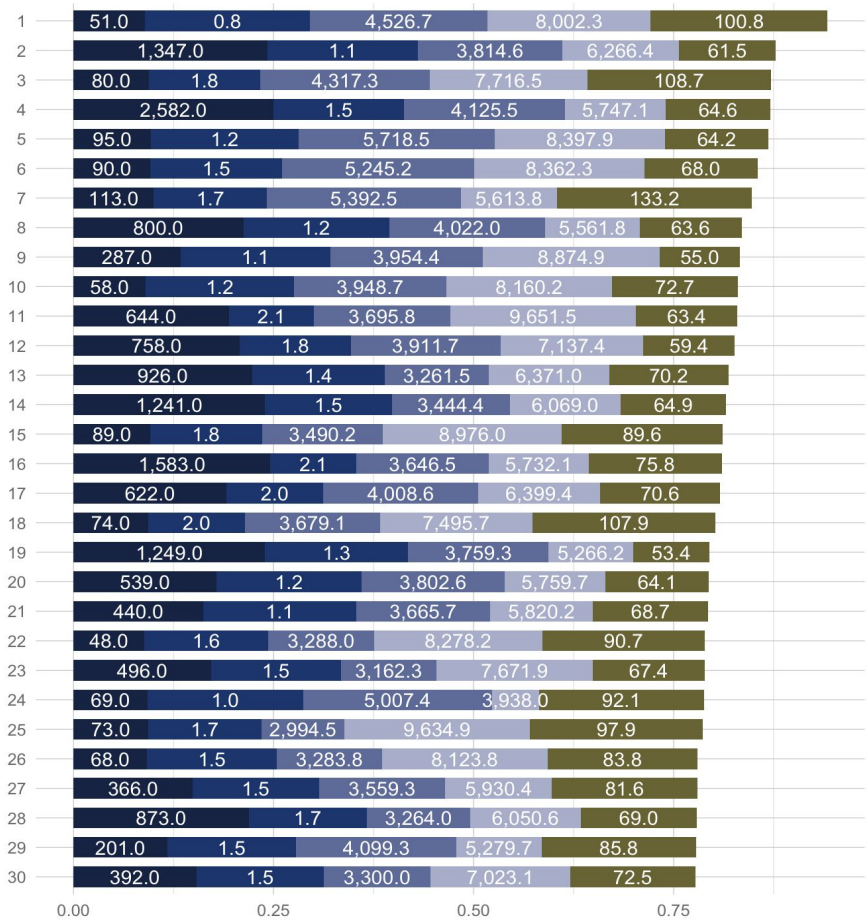
Dimensionar valores (0 a 1) e, em seguida, atribuir pesos a cada recurso e classificar de 0 a 100:

Priorização de Clusters de Baixo QoE

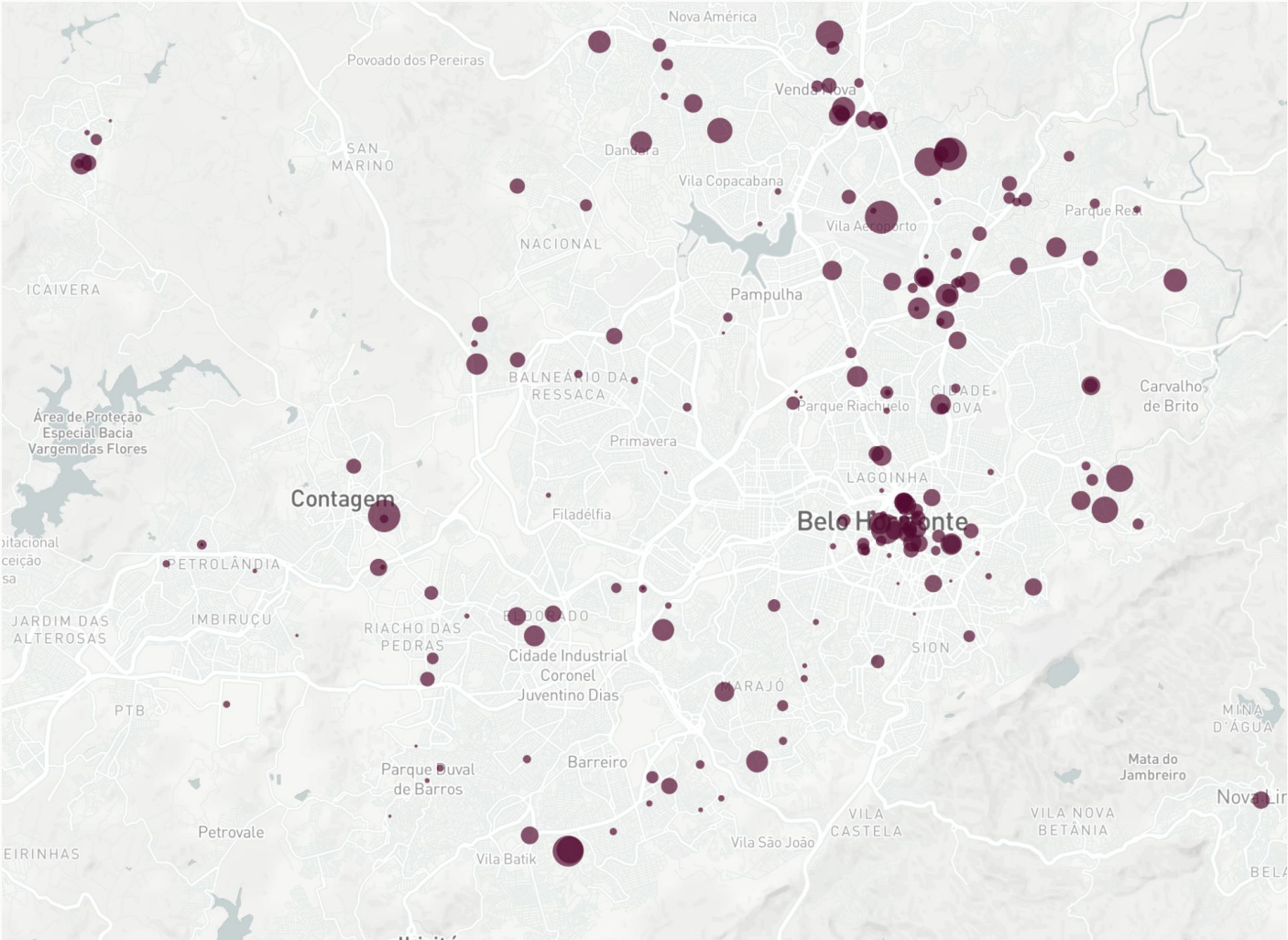


Top 30 Cluster that need attention

Q2 2023 - QoE Data

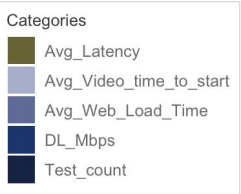
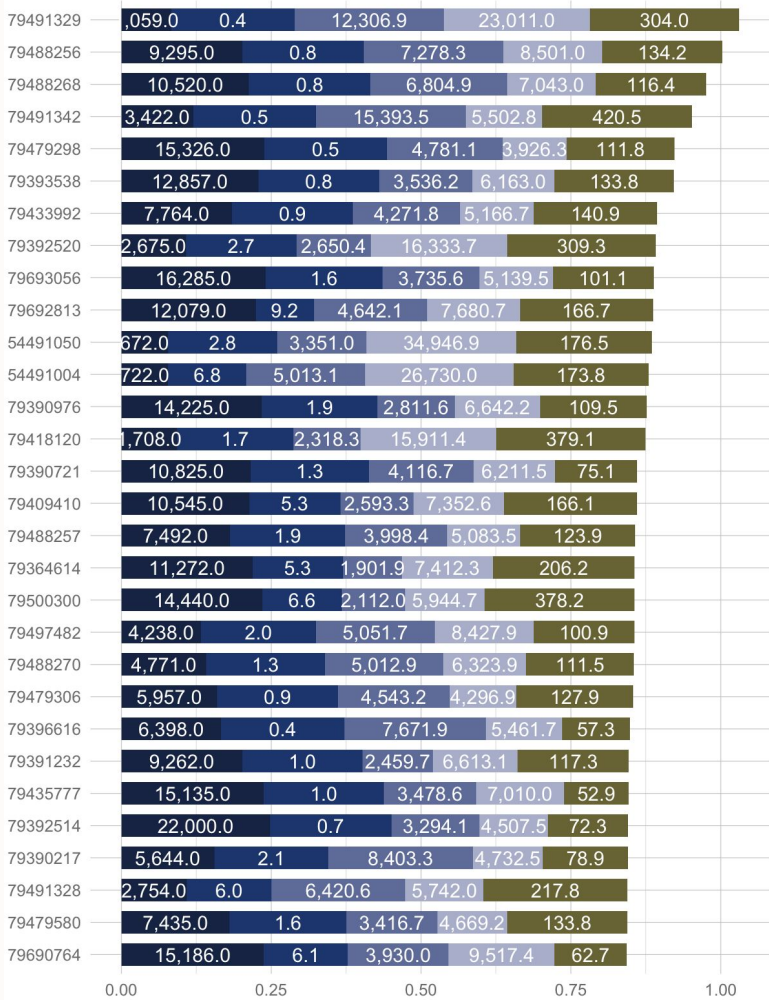


Priorização associada a Cell_ID



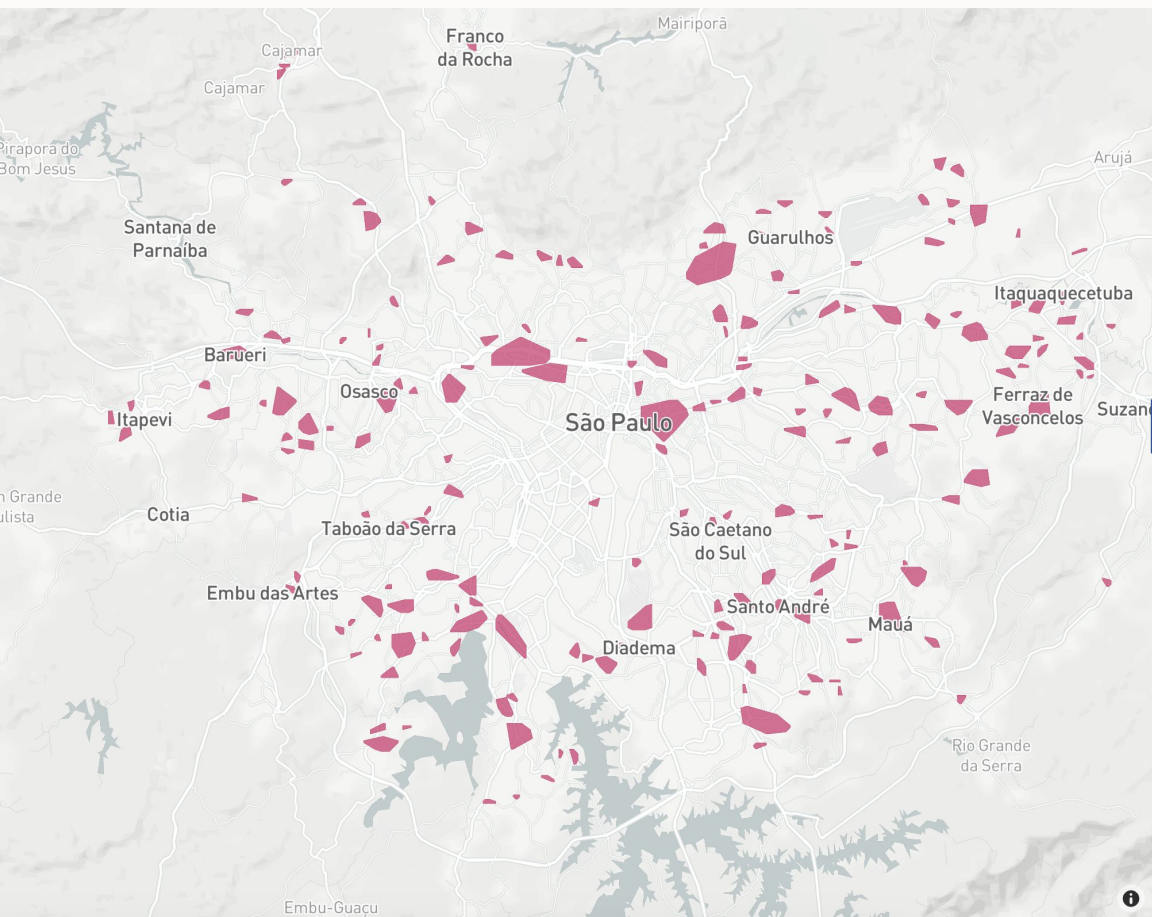
Top 20 Cell IDs that need attention

Cell Rebel Data - Q4 2022

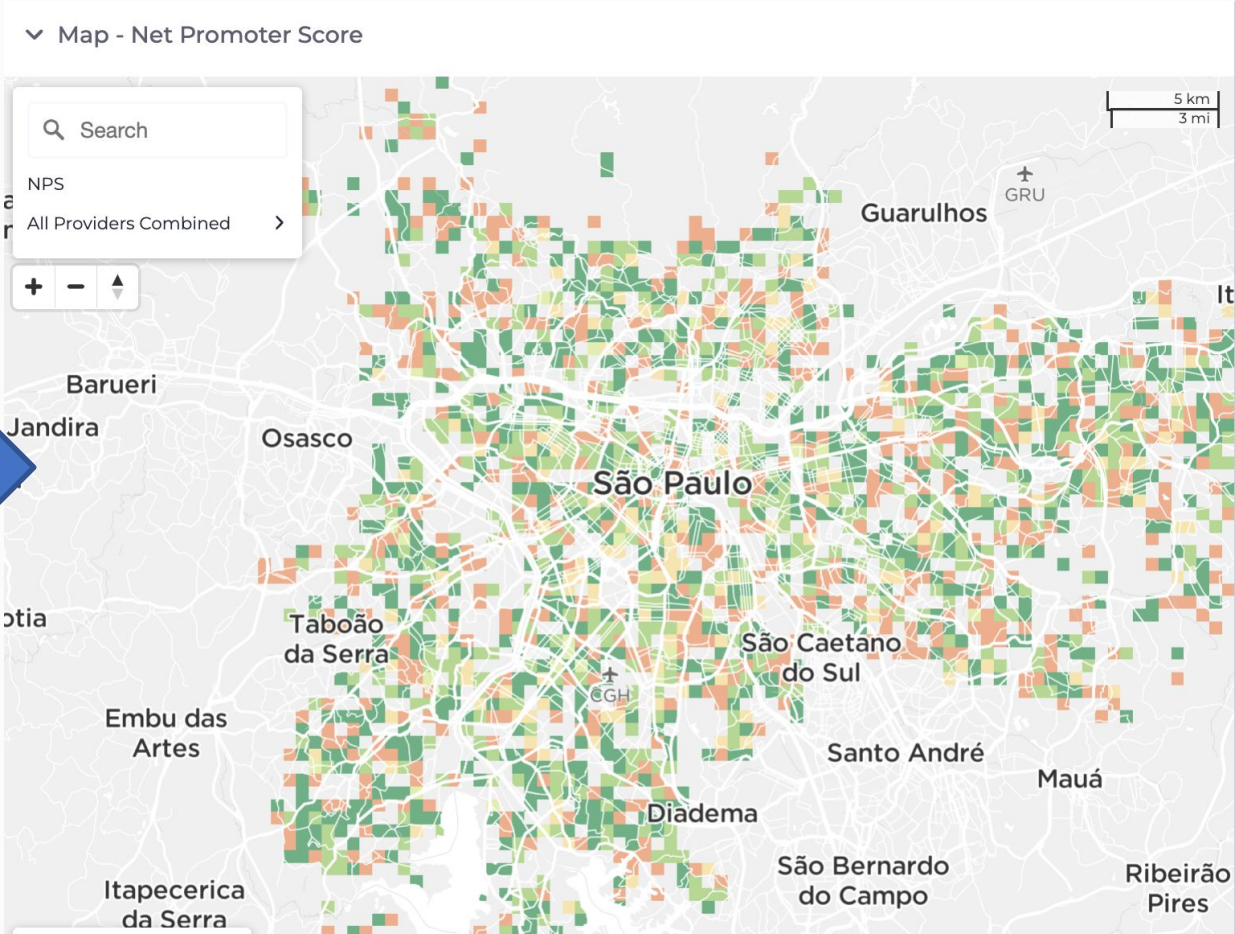


Baixo QoE e NPS

Clusters Baixo QoE

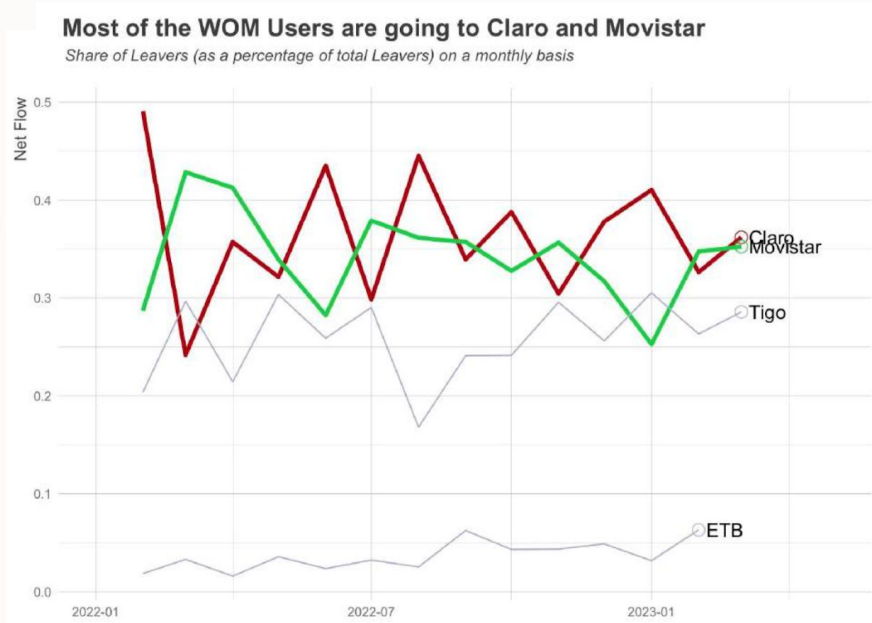
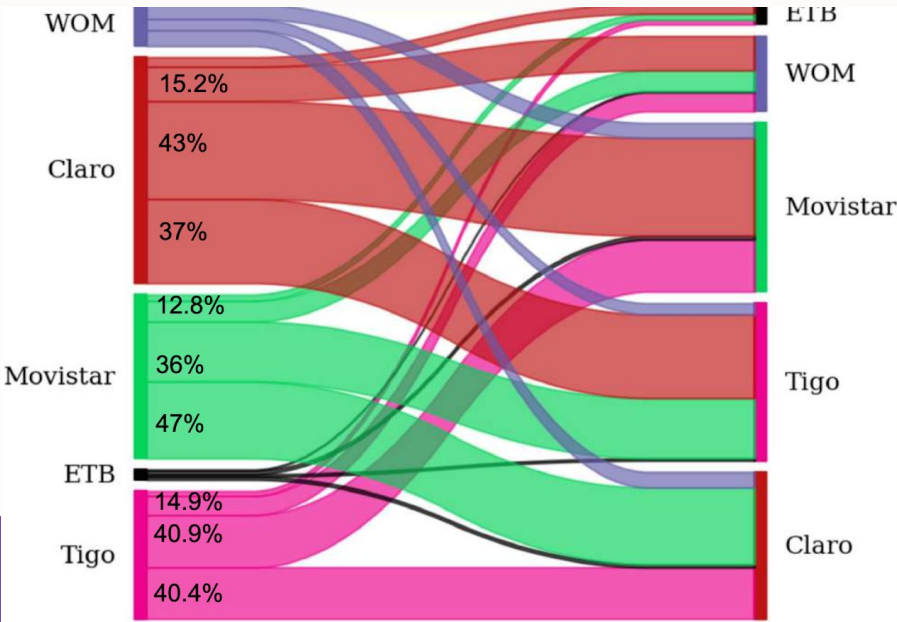


Dados de NPS

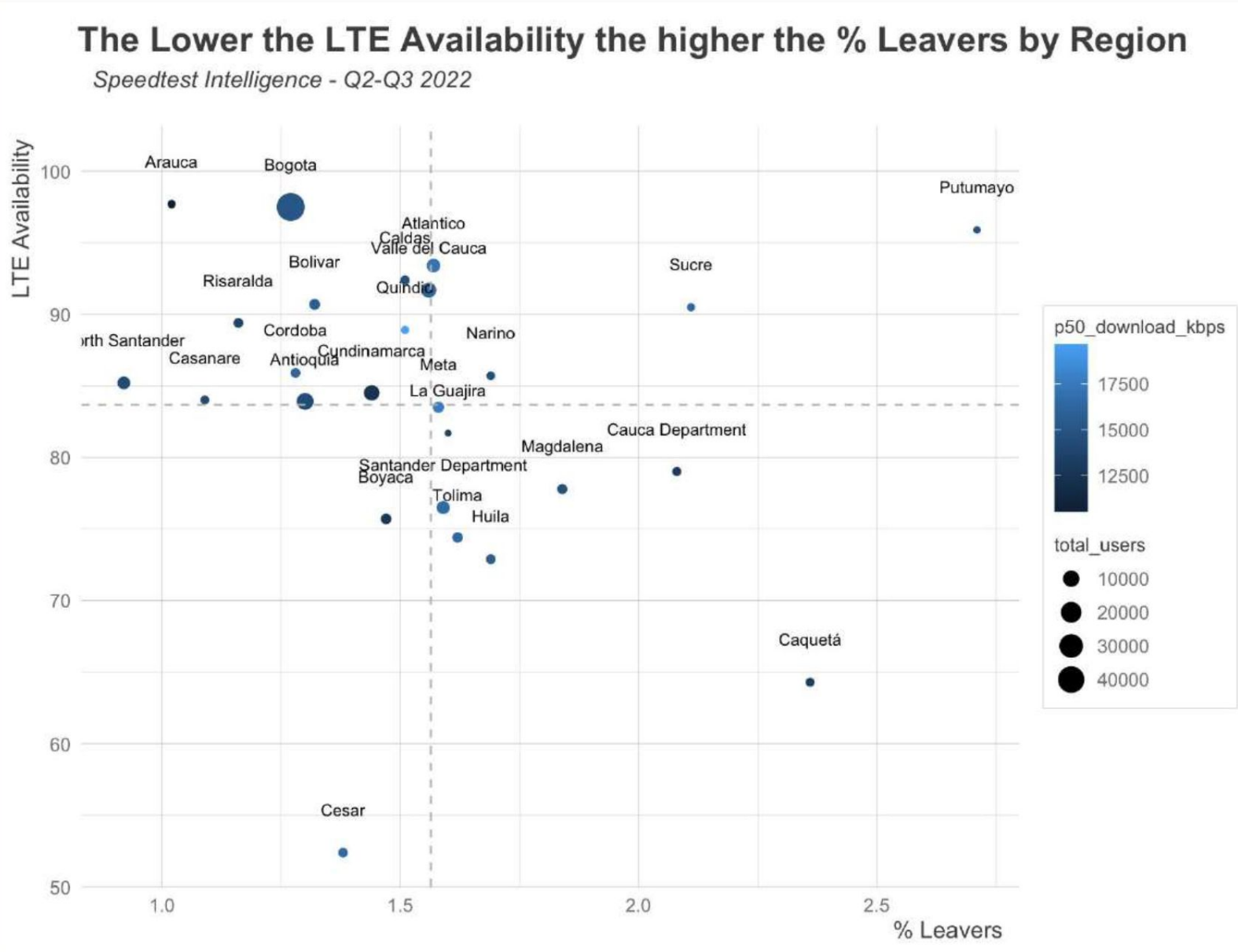


Análise de Churn

device_id	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Set	Oct	Nov
327031208	Tigo	Tigo	WOM	WOM	WOM	WOM	WOM	WOM	WOM	WOM	WOM
349860482	Claro	Claro	Claro	Claro	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo
224279958	Claro	Claro	WOM	WOM	WOM	WOM	WOM	WOM	WOM	WOM	WOM
192888306	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo	WOM	WOM	WOM	WOM	WOM
364367330	Claro	Claro	Claro	Claro	Claro	Claro	Claro	Claro	WOM	WOM	WOM
324989909	WOM	WOM	WOM	WOM	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo
191298419	WOM	WOM	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo
365511539	Claro	Claro	Claro	WOM	WOM	WOM	WOM	WOM	WOM	WOM	WOM
218685688	Claro	Claro	Claro	Claro	Claro	Claro	Claro	Claro	WOM	WOM	WOM
364251569	Tigo	Tigo	Tigo	Tigo	Tigo	Tigo	WOM	WOM	WOM	WOM	WOM



Análise de Churn



Obrigado!