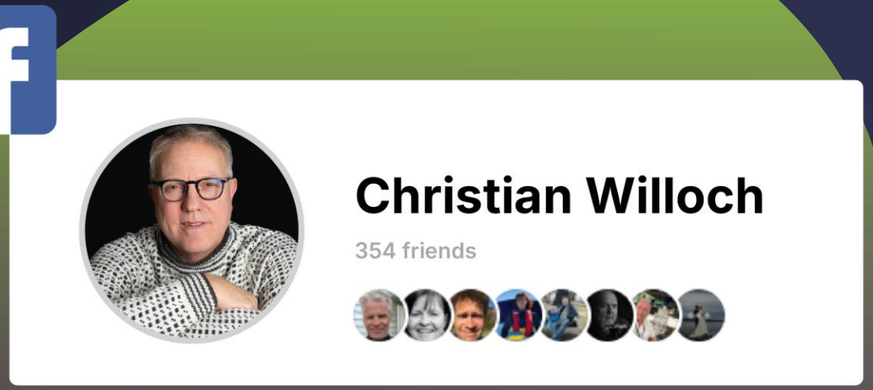
# Using Ecosystem Feedback to Improve Product Adoption

**CHRISTIAN WILLOCH**

Executive Advisor, Radical Innovation, Ruter As

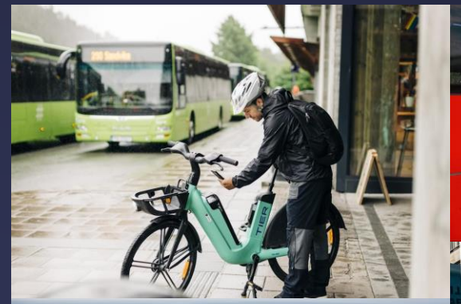



# This is not a friend

# This is not a car

# This is not food delivery

# This is not public transportation



Over 40 % of Norway's population live their lives in the Oslo region.

# 55 % percent of Norway's public transport trips are carried out by Ruter.

# «Sustainable Freedom of Movement for All»

Ruter#

?

27th September 1825

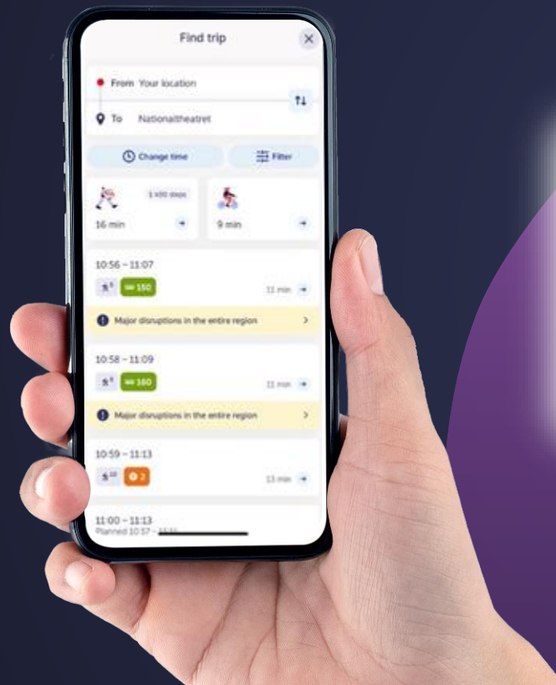
Paper

NFC 2005

Smartphone 2012

Billetter
Tickets

Billetter
Tickets

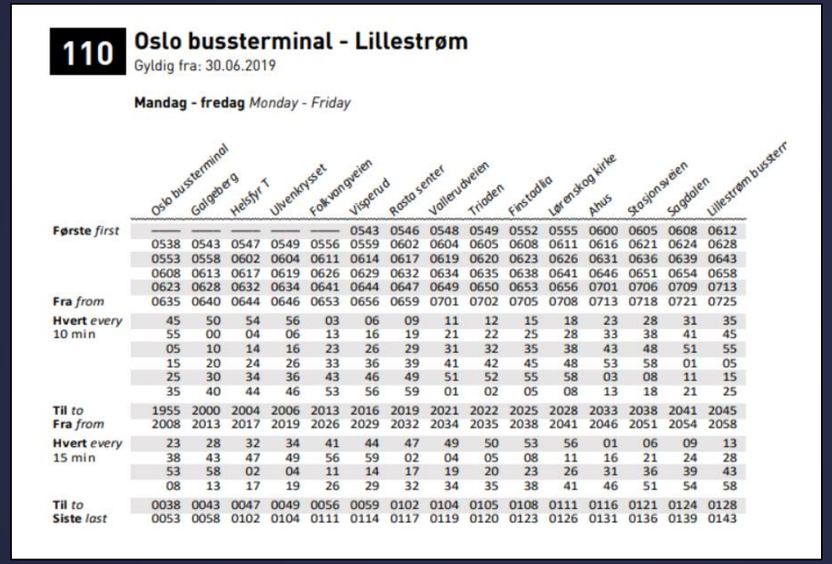

Find trip
From Your location
To Nationaltheatret
Change time
Filter
16 min
9 min
10:56 – 11:07
150
11 min
Major disruptions in the entire region
10:58 – 11:09
160
11 min
Major disruptions in the entire region
10:59 – 11:13
2
13 min
11:00 – 11:13

1490 steps
16 min

9 min

# From a Legacy of Several Proprietary Systems To a Datacentric Solution Based On Standards

The front facing the customer has been digitized and changed.. but the underlying information is based on historical methods

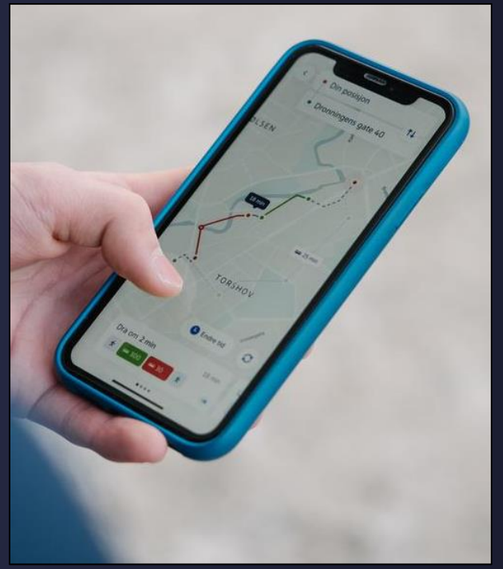


**110** **Oslo bussterminal - Lillestrøm**

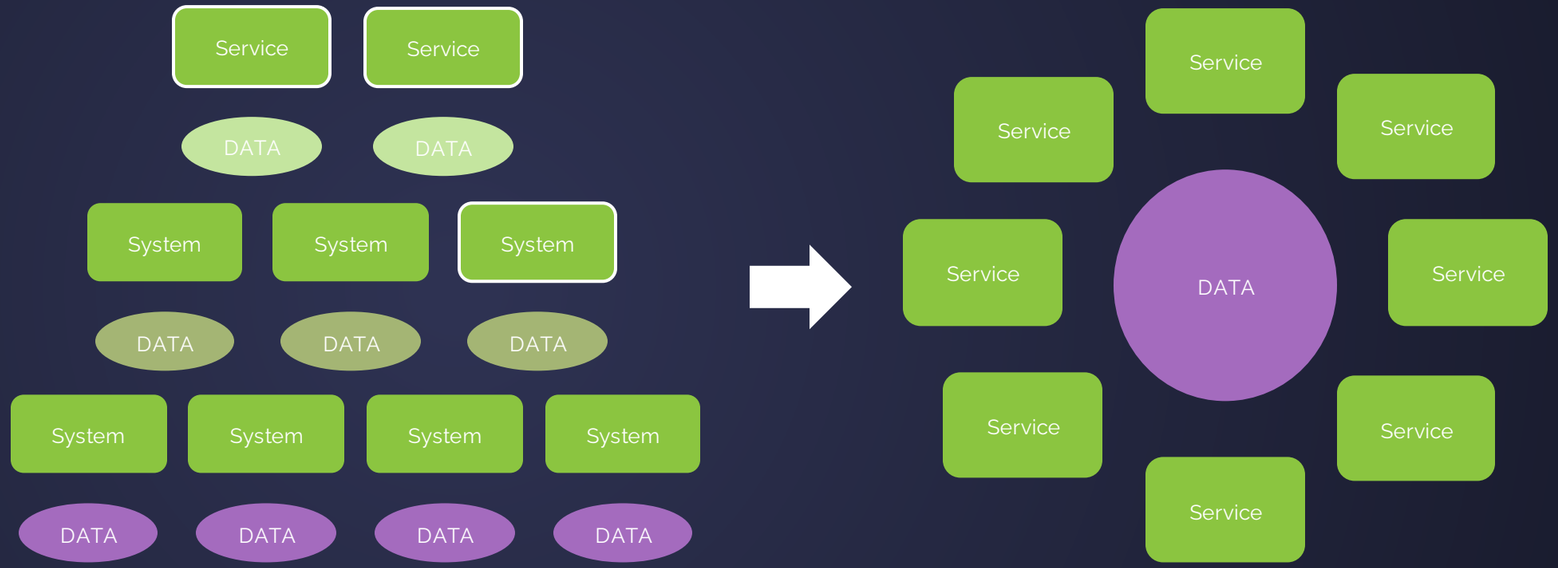
Gyldig fra: 30.06.2019

**Mandag - fredag** *Monday - Friday*

| | Oslo bussterminal | Galgeberg | Hellfyr T | Ulvenkrysset | Folkvangveien | Visperud | Rosta senter | Vollerudveien | Trioden | Finstadlia | Lørenskog kirke | Ahus | Stasjonsveien | Sagdalen | Lillestrøm bussterr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Første** *first* | — | — | — | — | — | 0543 | 0546 | 0548 | 0549 | 0552 | 0555 | 0600 | 0605 | 0608 | 0612 |
| | 0538 | 0543 | 0547 | 0549 | 0556 | 0559 | 0602 | 0604 | 0605 | 0608 | 0611 | 0616 | 0621 | 0624 | 0628 |
| | 0553 | 0558 | 0602 | 0604 | 0611 | 0614 | 0617 | 0619 | 0620 | 0623 | 0626 | 0631 | 0636 | 0639 | 0643 |
| | 0608 | 0613 | 0617 | 0619 | 0626 | 0629 | 0632 | 0634 | 0635 | 0638 | 0641 | 0646 | 0651 | 0654 | 0658 |
| | 0623 | 0628 | 0632 | 0634 | 0641 | 0644 | 0647 | 0649 | 0650 | 0653 | 0656 | 0701 | 0706 | 0709 | 0713 |
| **Fra** *from* | 0635 | 0640 | 0644 | 0646 | 0653 | 0656 | 0659 | 0701 | 0702 | 0705 | 0708 | 0713 | 0718 | 0721 | 0725 |
| **Hvert** *every* 10 min | 45 | 50 | 54 | 56 | 03 | 06 | 09 | 11 | 12 | 15 | 18 | 23 | 28 | 31 | 35 |
| | 55 | 00 | 04 | 06 | 13 | 16 | 19 | 21 | 22 | 25 | 28 | 33 | 38 | 41 | 45 |
| | 05 | 10 | 14 | 16 | 23 | 26 | 29 | 31 | 32 | 35 | 38 | 43 | 48 | 51 | 55 |
| | 15 | 20 | 24 | 26 | 33 | 36 | 39 | 41 | 42 | 45 | 48 | 53 | 58 | 01 | 05 |
| | 25 | 30 | 34 | 36 | 43 | 46 | 49 | 51 | 52 | 55 | 58 | 03 | 08 | 11 | 15 |
| | 35 | 40 | 44 | 46 | 53 | 56 | 59 | 01 | 02 | 05 | 08 | 13 | 18 | 21 | 25 |
| **Til** *to* | 1955 | 2000 | 2004 | 2006 | 2013 | 2016 | 2019 | 2021 | 2022 | 2025 | 2028 | 2033 | 2038 | 2041 | 2045 |
| **Fra** *from* | 2008 | 2013 | 2017 | 2019 | 2026 | 2029 | 2032 | 2034 | 2035 | 2038 | 2041 | 2046 | 2051 | 2054 | 2058 |
| **Hvert** *every* 15 min | 23 | 28 | 32 | 34 | 41 | 44 | 47 | 49 | 50 | 53 | 56 | 01 | 06 | 09 | 13 |
| | 38 | 43 | 47 | 49 | 56 | 59 | 02 | 04 | 05 | 08 | 11 | 16 | 21 | 24 | 28 |
| | 53 | 58 | 02 | 04 | 11 | 14 | 17 | 19 | 20 | 23 | 26 | 31 | 36 | 39 | 43 |
| | 08 | 13 | 17 | 19 | 26 | 29 | 32 | 34 | 35 | 38 | 41 | 46 | 51 | 54 | 58 |
| **Til** *to* | 0038 | 0043 | 0047 | 0049 | 0056 | 0059 | 0102 | 0104 | 0105 | 0108 | 0111 | 0116 | 0121 | 0124 | 0128 |
| **Siste** *last* | 0053 | 0058 | 0102 | 0104 | 0111 | 0114 | 0117 | 0119 | 0120 | 0123 | 0126 | 0131 | 0136 | 0139 | 0143 |



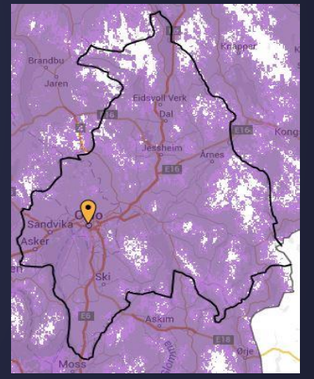
# Transition From a SYSTEM Centric Architecture to DATA Centric Architecture

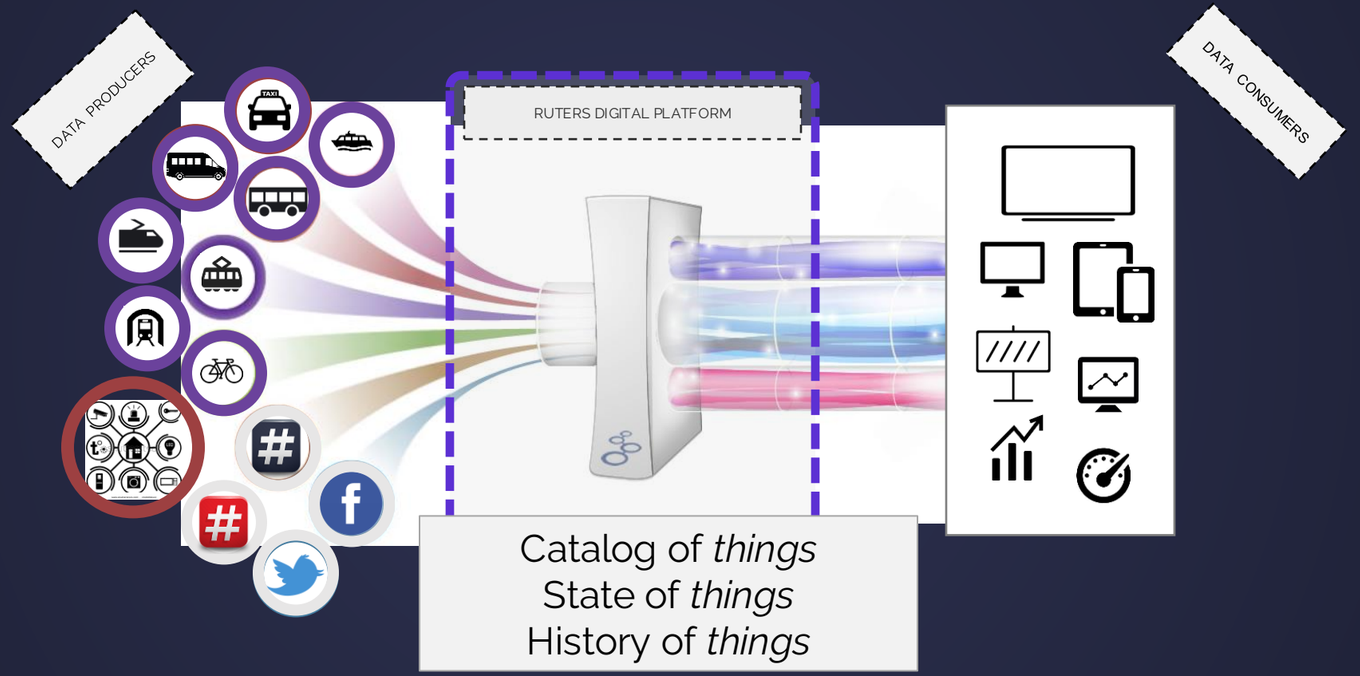


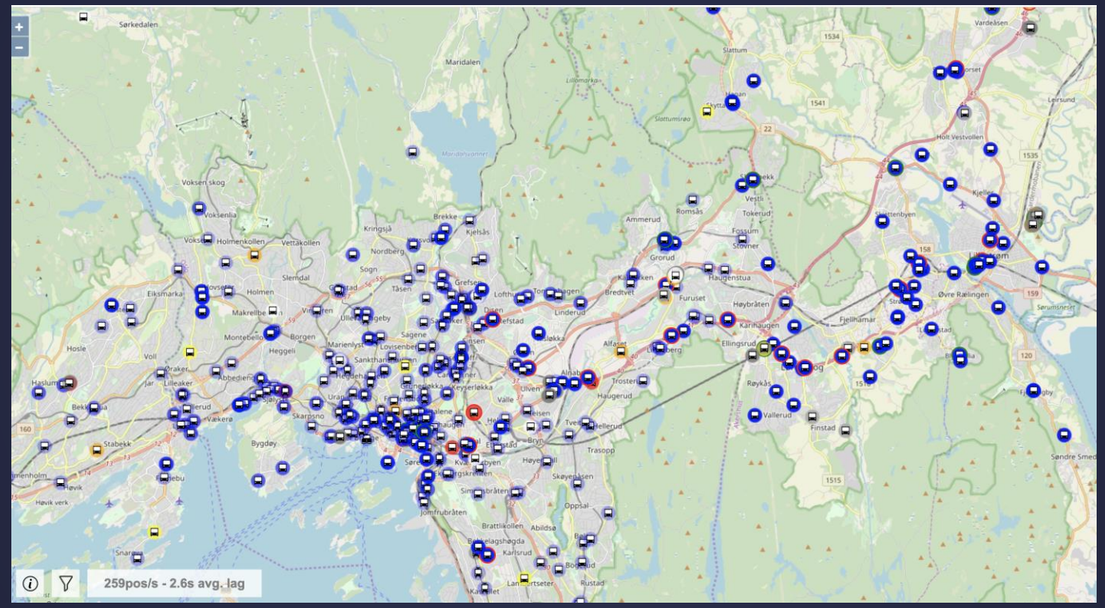
>96 % of the population have a smartphone (even higher numbers for our customers)

## Our Customers Are Already On-line..

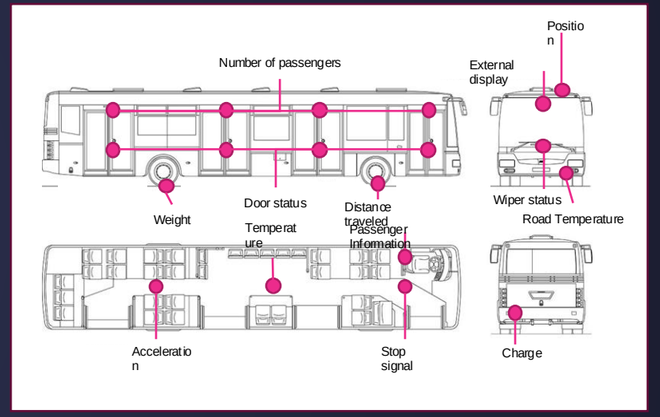
## .. And We Have Network Coverage



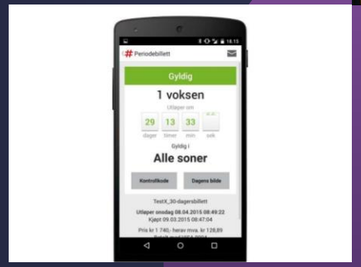

DATA PRODUCERS
RUTERS DIGITAL PLATFORM
DATA CONSUMERS
Catalog of *things*
State of *things*
History of *things*


259pos/s - 2.6s avg. lag

# The Digital Twin (Of a «Thing»)



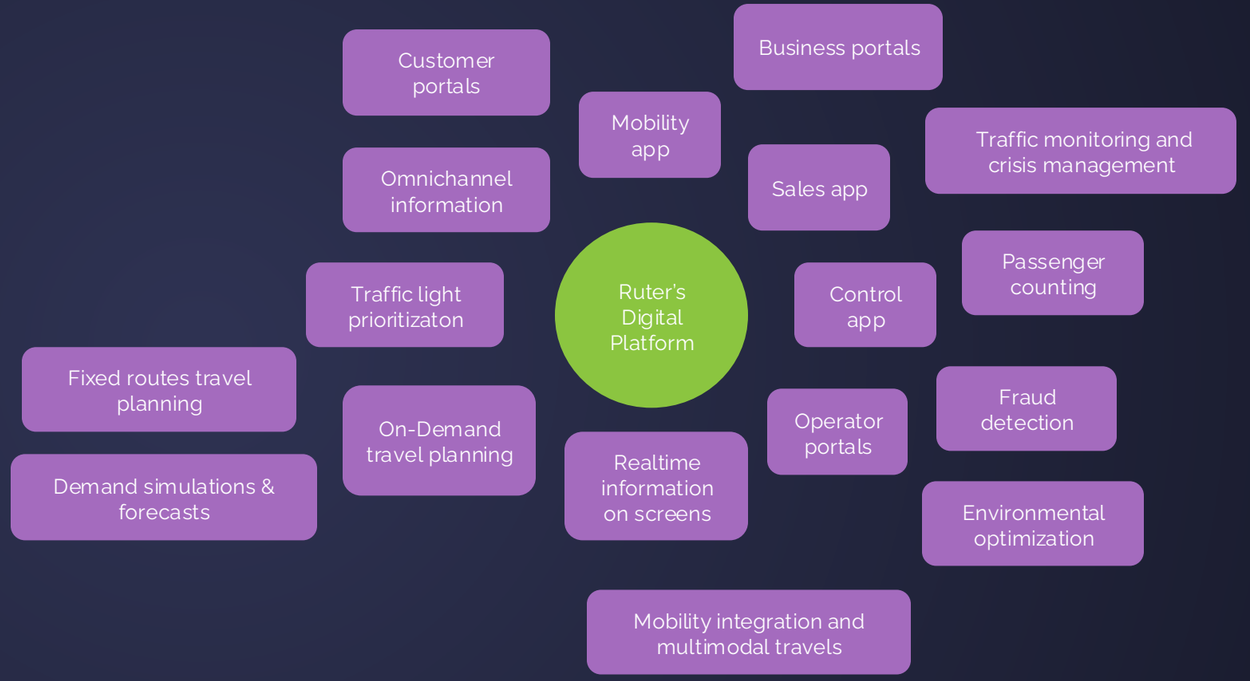
# Other Twins...

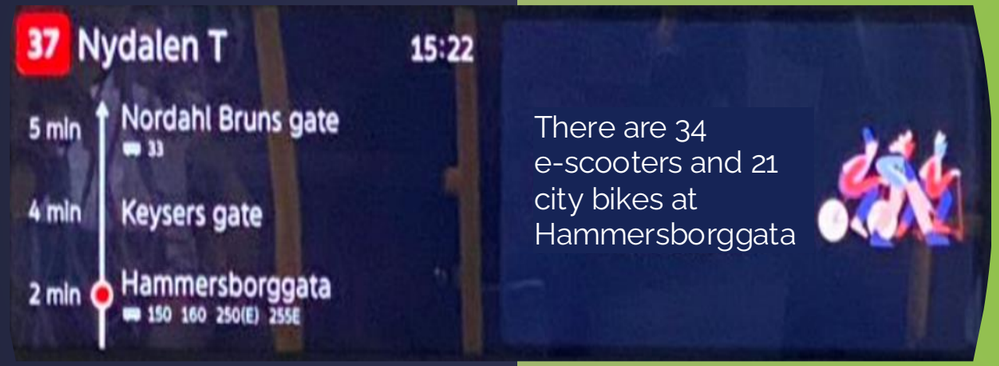

Periodebillett
Gyldig
1 voksen
Alle soner

VISA
VISA
VISA

Bybuss
City bus
Ruter

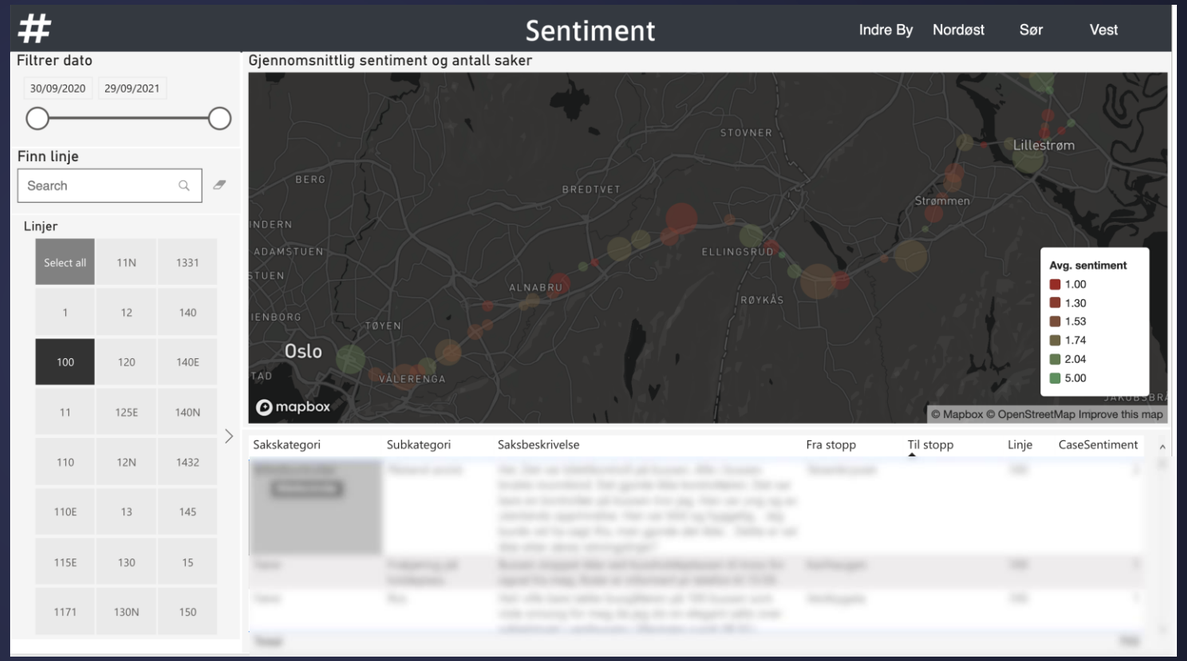
# An Ecosystem for Capturing Feedback, Continuous Delivery and Ensuring Product Adoption



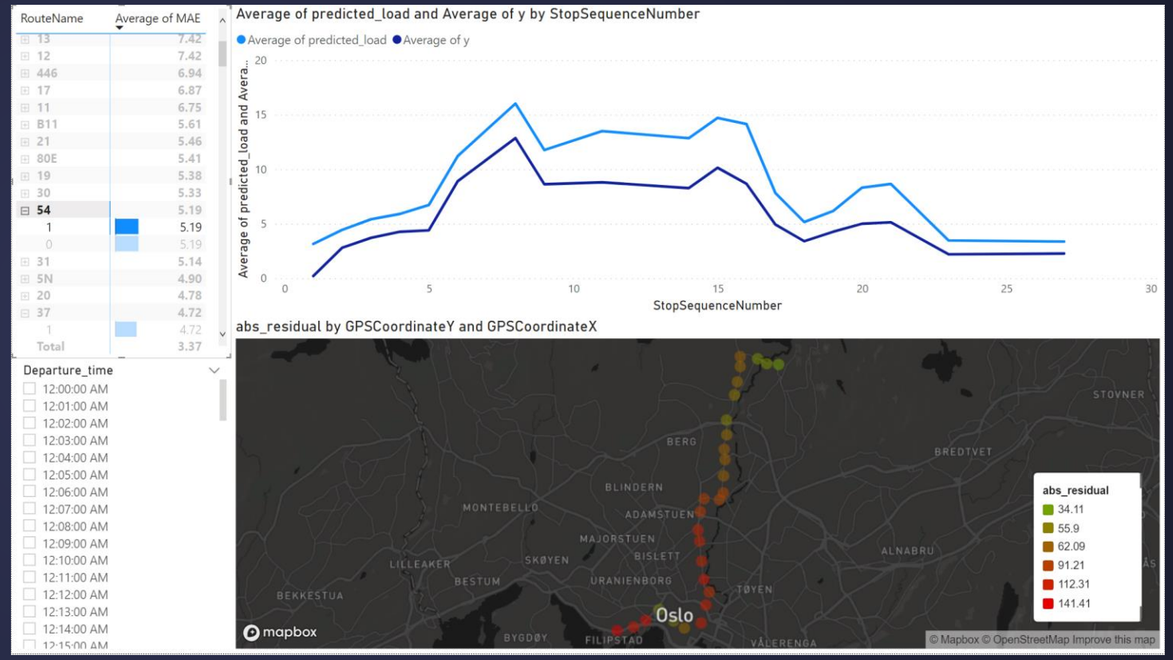

37 Nydalen T
15:22
5 min
Nordahl Bruns gate
33
4 min
Keysers gate
2 min
Hammersborggata
150 160 250(E) 255E
There are 34 e-scooters and 21 city bikes at Hammersborggata

37 Nydalen T
15:22
5 min
Nordahl Bruns gate
33
4 min
Keysers gate
2 min
Hammersborggata
150 160 250(E) 255E
Det er 34 sparkesykler og 21 bysykler ved Hammersborggata.

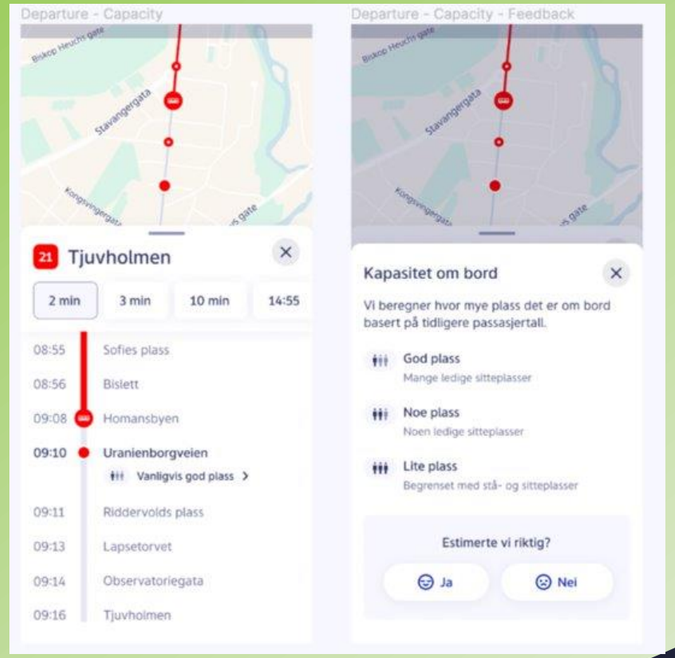
# How Mad Are Our Customer At Us – And Where?



# Capacity Prediction



# Capacity Predictions



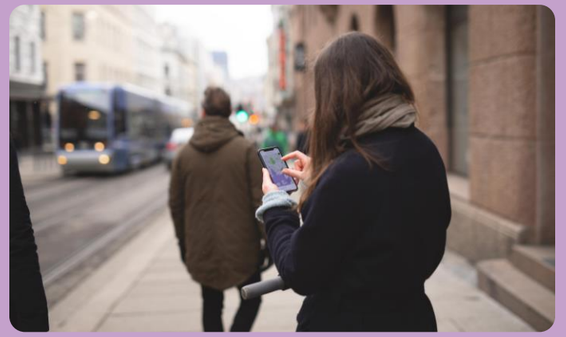
# New habits for new inhabitants

7178
BANK.
STRAND.

The private car provides people with a sense of freedom that mass transit often cannot compete with.

Ruter #
002
Vi tester selvkjøring
Snart kan du sitte på

Through large volumes of data from various sources, we become acquainted with our customers' habits and preferences.



Through digital customer interfaces, we can provide customized and attractive travel suggestions.

# With Data and AI, We Can Create a Fully Automated Transport System

Automatic capacity adjustment in real-time, based on population data.

Automatic infrastructure maintenance, based on information from vehicle sensors.

On-demand transport services tailored to each individual's needs.

# Thank you!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