

More sustainable transportation: Optimizing mobility and logistics with IoT, 5G & mobile network data

AI in Mobility and Logistics: Exploring Challenges & Opportunities

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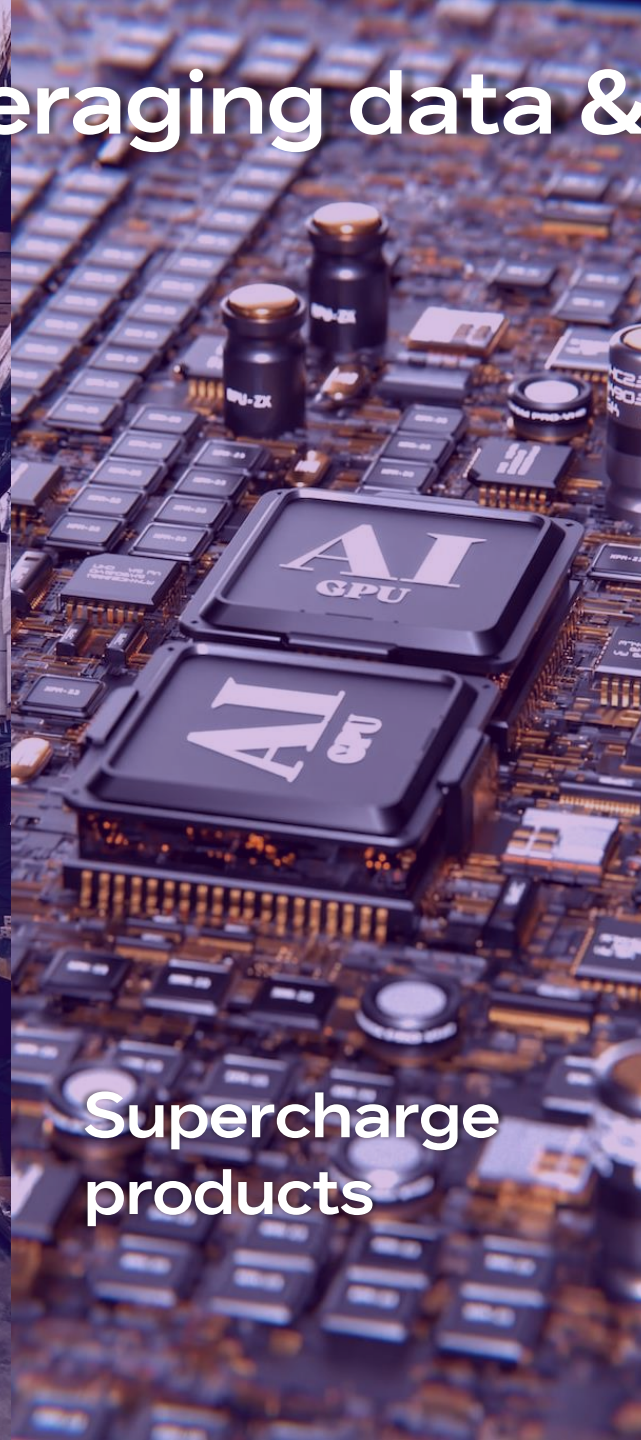
Future winners excel in leveraging data & AI



Boost employee productivity



Improve process efficiency



Supercharge products



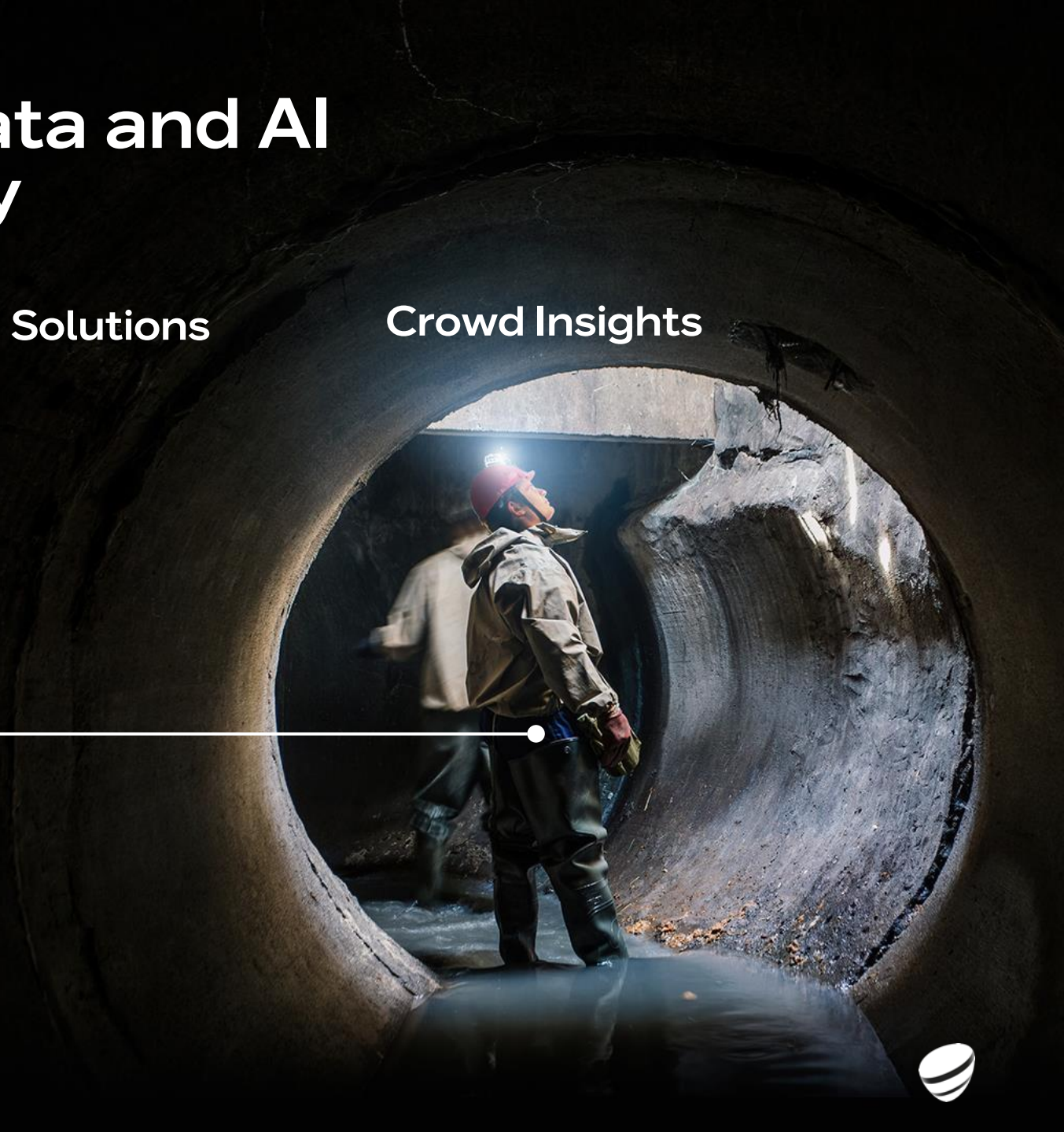
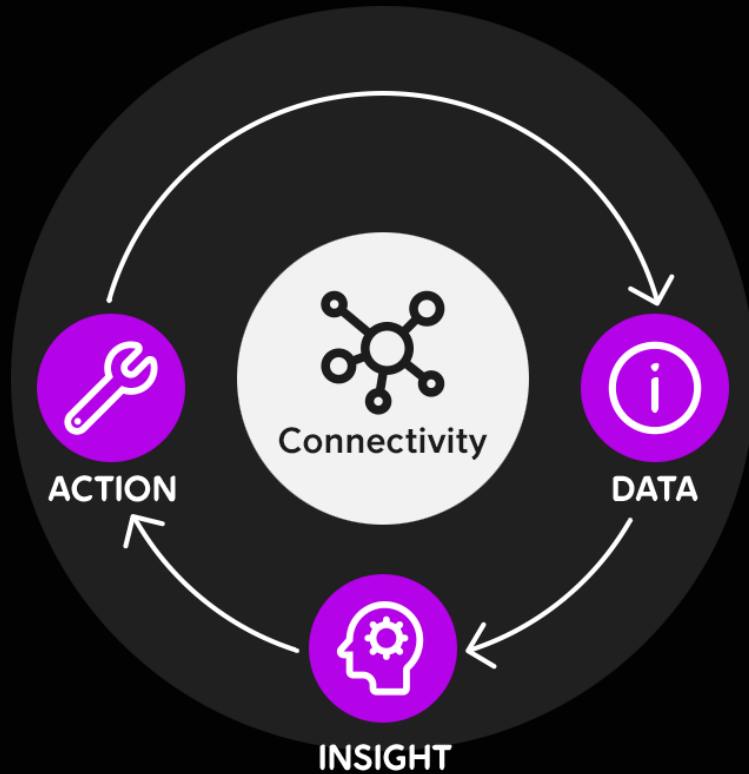
Create new business

Harness the power of data and AI to improve sustainability

Internet of Things

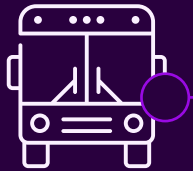
Industrial 5G Solutions

Crowd Insights



Telia Smart Public Transport

- End-to-end solution for public transport operators & authorities
- Optimize vehicle efficiency, performance and uptime
- Enable fleet management and increase service reliability
- Provide real-time information and Internet onboard for commuters
- Market leader in Sweden and Finland

















Telia IoT Edge
Onboard Gateway

Telia IoT
Connectivity

Telia IoT
Platform

Own & partner
services

-  Real time journey information
-  Crowd movement insights
-  Driver communications
-  Eco-driving
-  Route analytics
-  Ticket validation
-  Video surveillance
-  Internet onboard
-  Vehicle health
-  Fleet management
-  Vehicle climate manager
-  Tachograph data manager
-  Passenger count
-  Breathalyzer



Eco-driving reduces fuel consumption



Onnibus saves
275 000 liters
of fuel per year
with 60 buses

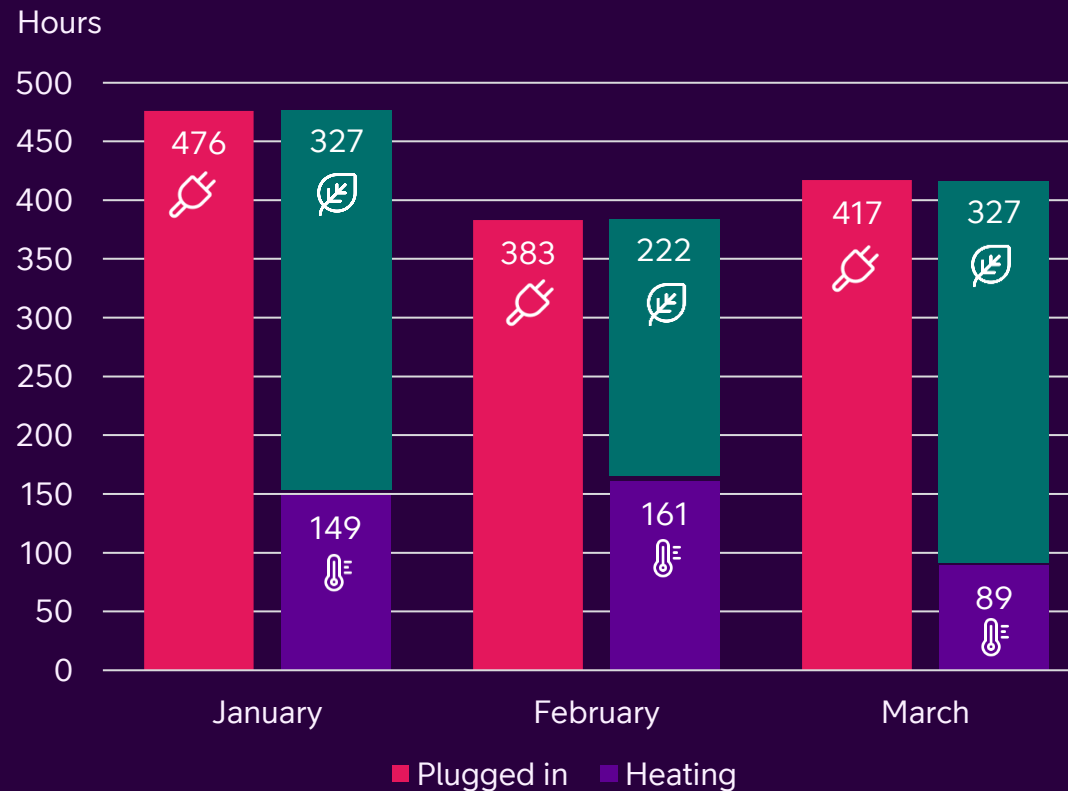
Read more: <https://www.telia.fi/business/article/smart-bus-solution-saves-money>

Vehicle climate management for buses

Public
Transport
Operator saves
4,5 GwH of
heating energy
per year with
300 buses

Operator driving city traffic

Savings of one bus in three months
876 hours → 7 011, 84 KwH



One bus

Savings in one year
15 000 KwH

1 500 €



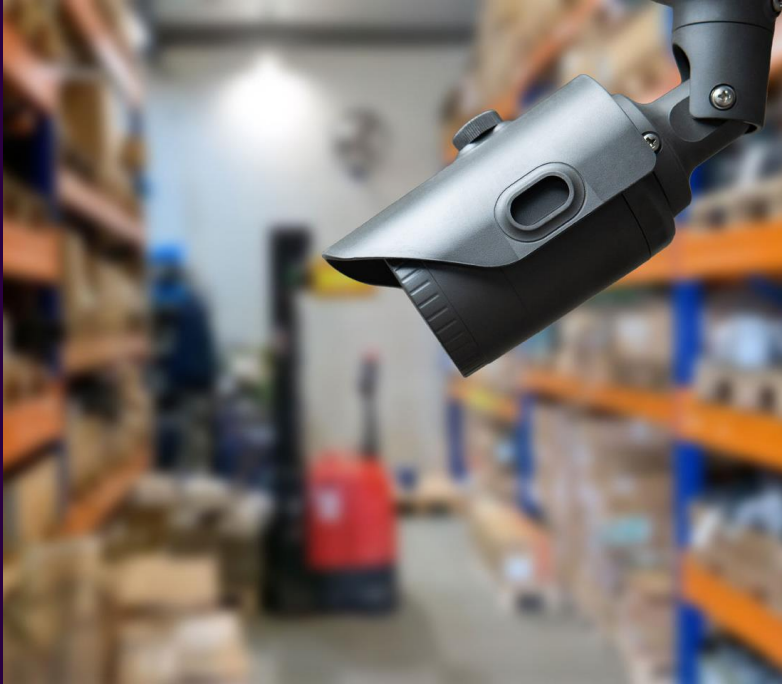
300 buses

Savings in one year
4,5 GwH

450 000 €



Telia Image Recognition



AI based observations – turning analog events into digital data



Real time event tracking, actions, guidance and alerts

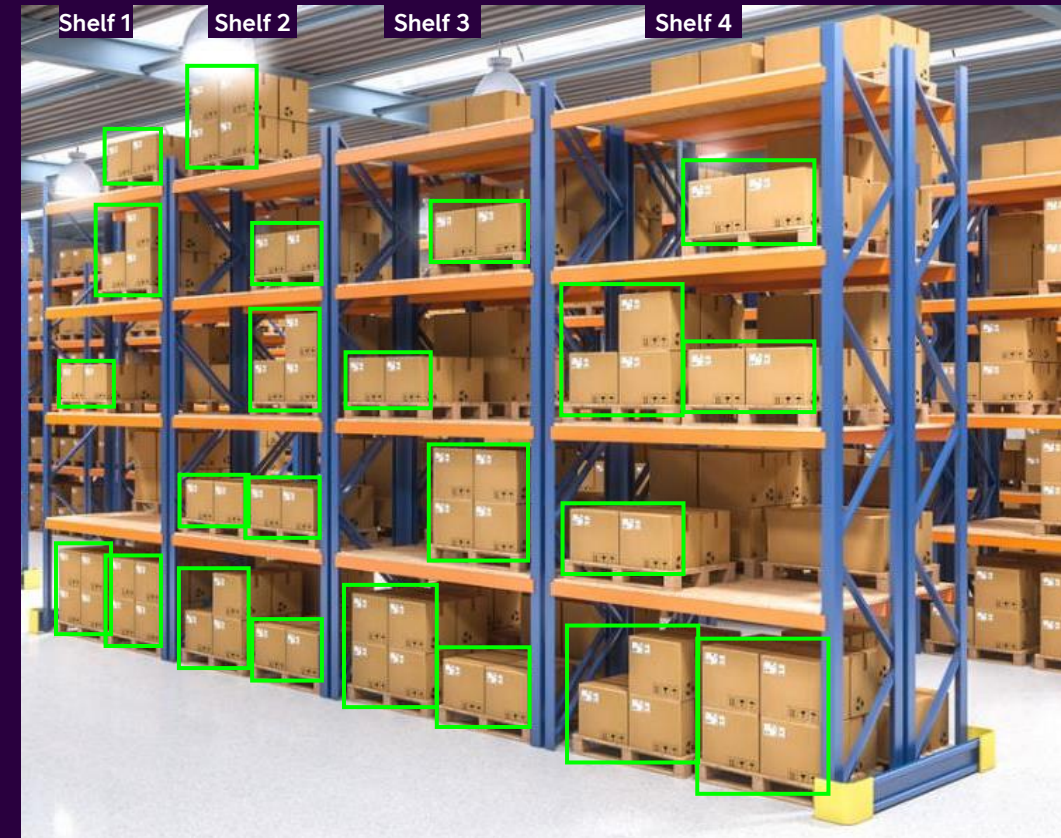


Reliable data, APIs and analytics



Video analytics for warehouse utilization

Transval –
leading indoor
logistics
company in
Finland – keeps
production line
rolling by
ensuring
sufficient
buffer levels



Read more: [Transval developed a video identification solution that uses AI to monitor the customer's production buffer](#)



Telia Crowd Insights

By measuring the movement of mobile phones between base stations in our network, we can measure the movements of crowds at different times of the day. This lets us measure

- How commuters travel – to improve public transport services
- Where crowds form – to help retailers choose their next location
- High emission travel patterns – to help prioritize green activities

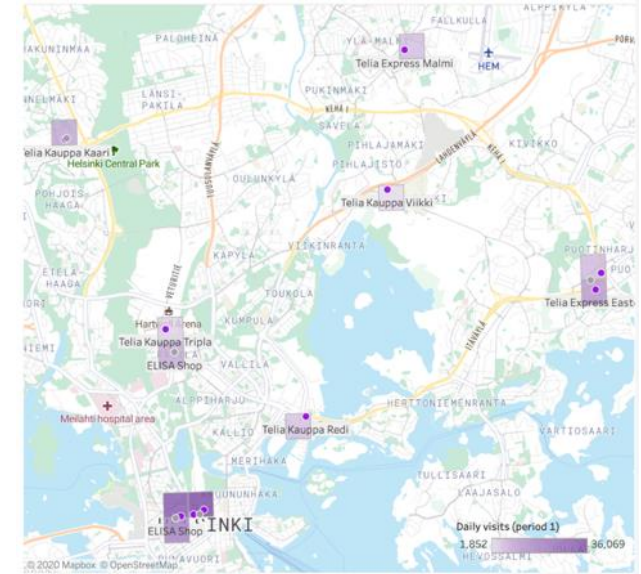


Mobile network data

Irreversibly anonymized

Movement patterns analyzed

Applied to customer needs



Regions: Uusimaa | Municipalities: Helsinki | Grids type: all grids | Grids: Helsinki, 9057

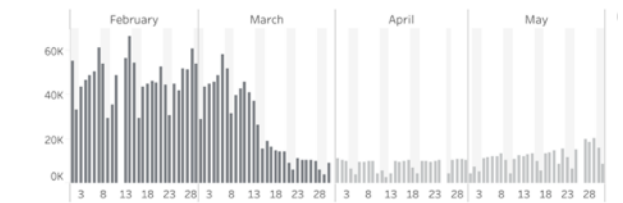
Period 1 from: 01/02/2020 | Period 1 to: 31/03/2020 | Period 2 from: 01/04/2020 | Period 2 to: 31/05/2020

01 February 2020 - 30 March 2020
36,069 average daily visits

01 April 2020 - 31 May 2020
10,120 average daily visits
~72% vs period 1

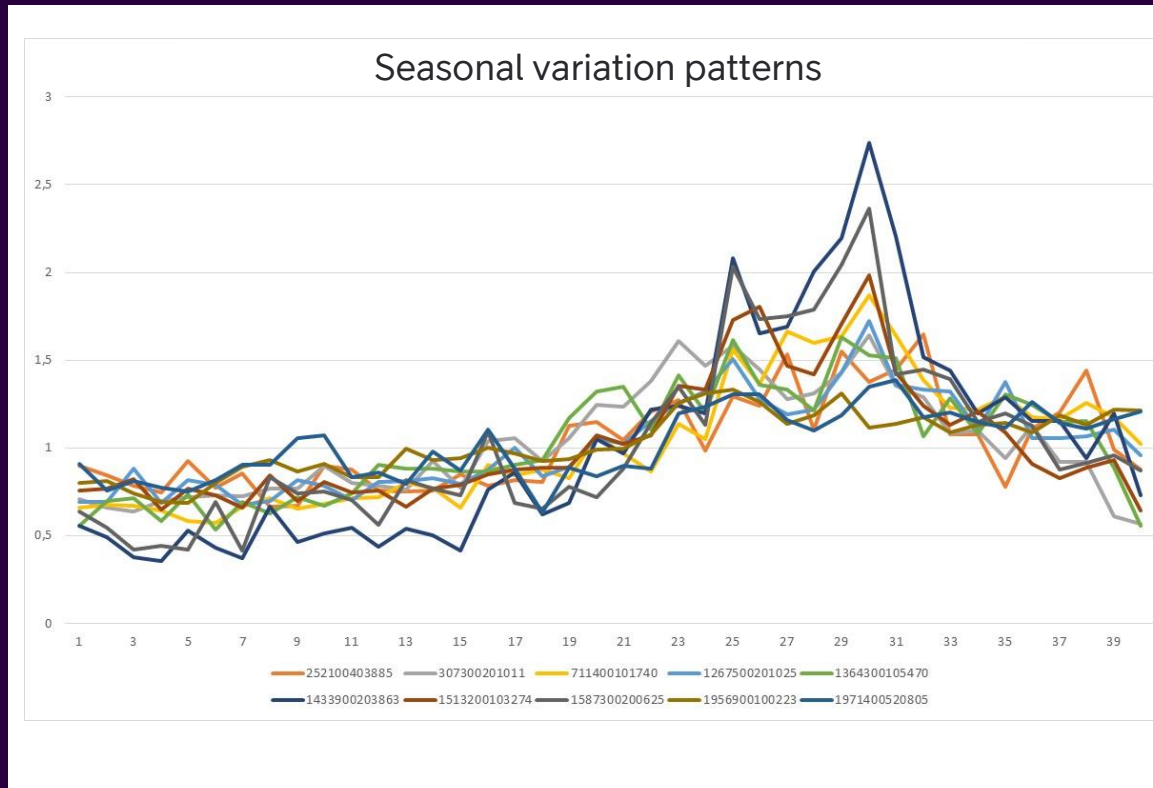


Daily visits | Hourly visits | Visit duration | Visit type | Age (beta) | Income (beta)



Fintraffic optimizes traffic counting with Crowd Insights

Unique seasonal variation patterns for each road improve data quality while reducing costs by 30 %



Read more: [Telia Crowd Insights helps Fintraffic manage Finnish road traffic](#)



5G is the future of logistics

Public mobile network is standardized to connect moving equipment

Emerging connected use cases have similar needs for control, payload and remote management



Phones/PADs/PCs



Trucks



Cars



Boats



UAVs



AGVs/Robots

All use cases have dedicated needs for predictive connectivity characteristics to function properly

Robustness

Speed

Latency

Security

APIs

Integrity

Costs

Priority

Coverage

Regulation



Telia develops 5G transport corridors

NorthStar



5G transport corridors enable smart logistics such as self-driving electric trucks

Stockholm

Mariehamn

Turku

Helsinki



“An important piece of the puzzle in the establishment of a Northern European transport corridor **to test and develop systems for connected and autonomous vehicles**, such as self-driving electric trucks.”

Read more:

- www.teliacompany.com/en/news/telia-plans-150km-of-5g-transport-corridors-for-selfdriving-vehicles-2023-10-05-12-00-00
- www.teliacompany.com/en/news-articles/telia-company-to-develop-5g-northern-european-transport-corridor



Thank you! Questions?

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