Big data og personvern

Oslo 7. Sep, 2017

Tekna

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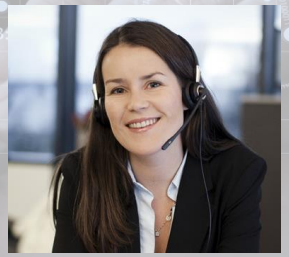
Telenor leverages big data analytics across many areas

1. **Network deployment**

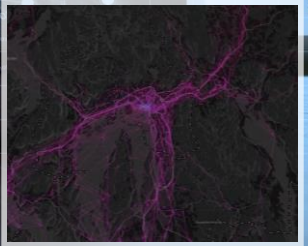
2. **Customer service**

3. **Security monitoring**

4. **Meeting customer needs**

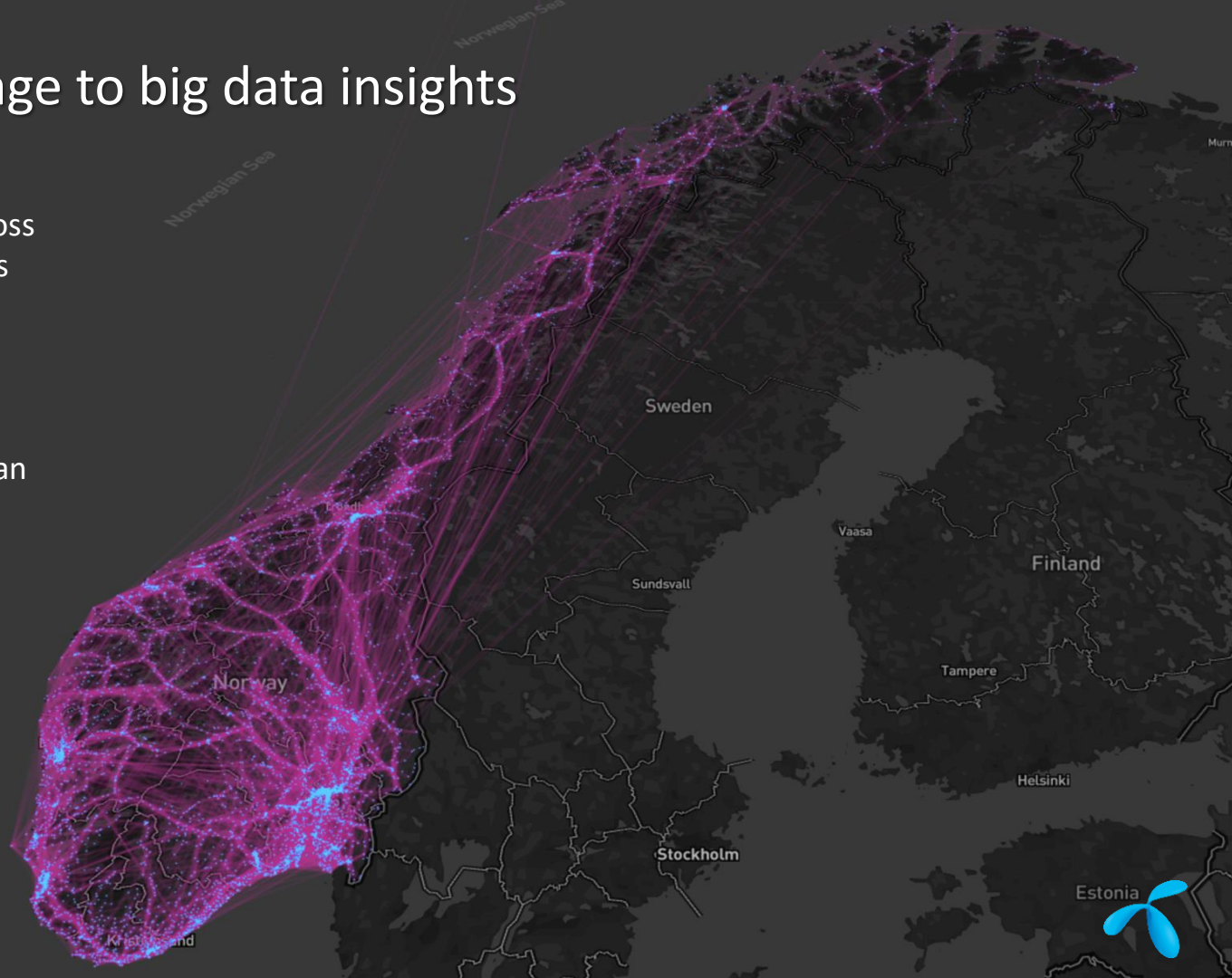


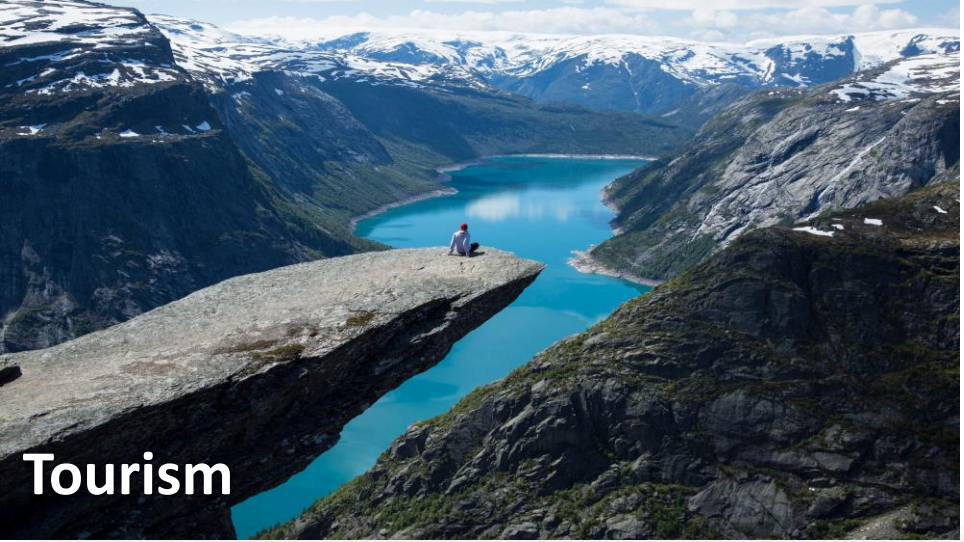
5. **Big data for social good**



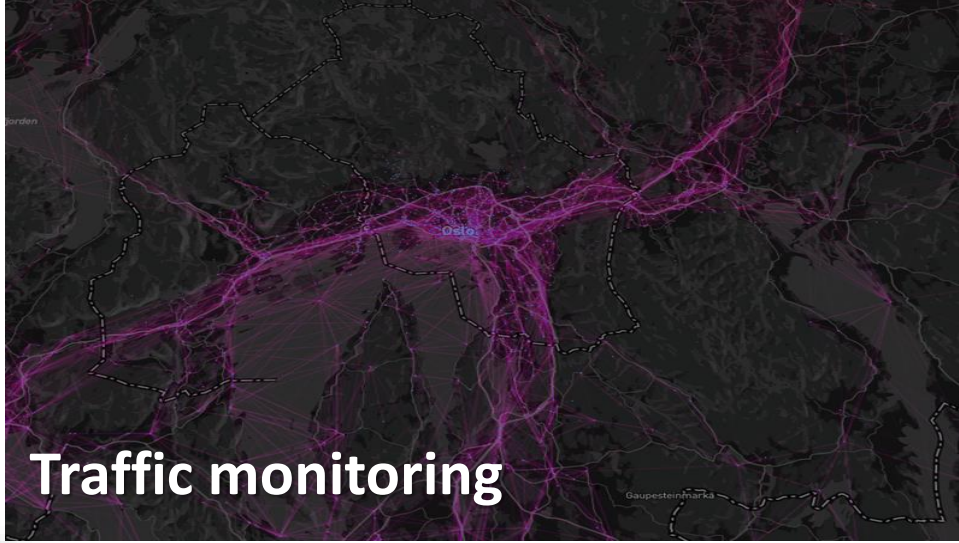
From great coverage to big data insights

- 2.3 million people moving across Norway in a period of 12 hours
- 1.5 TB of signaling data in a snapshot
- Telenor empowering Norwegian society through big data innovation

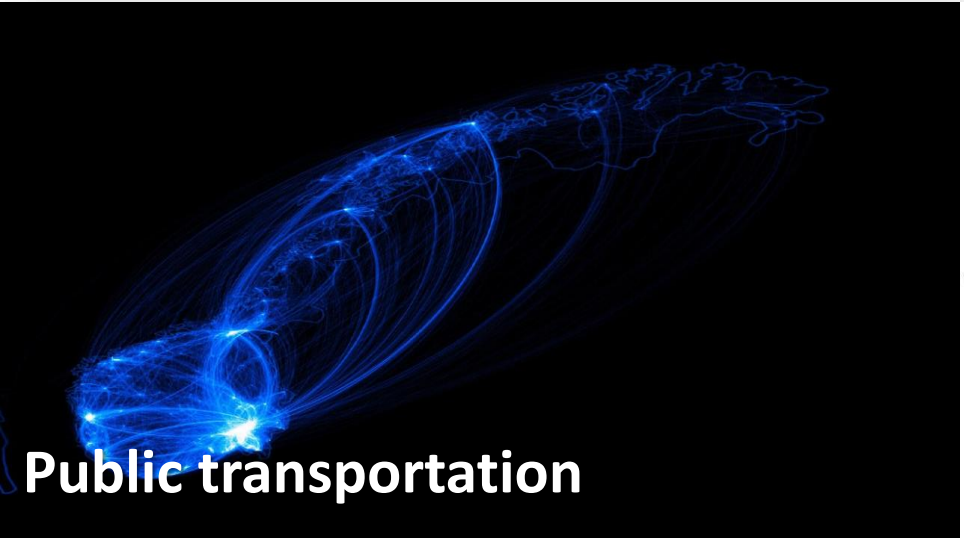




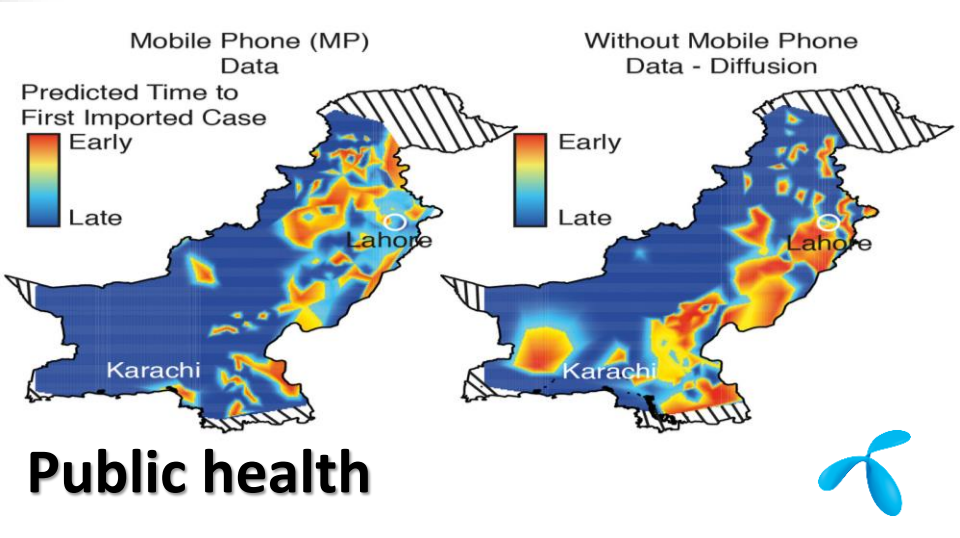
Tourism



Traffic monitoring



Public transportation



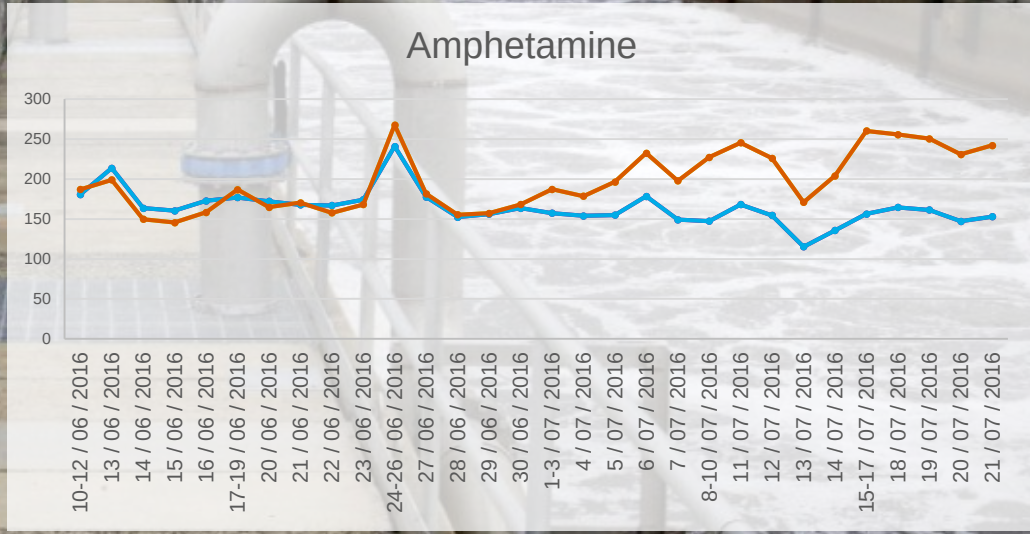
Public health

Big data analytics for public health

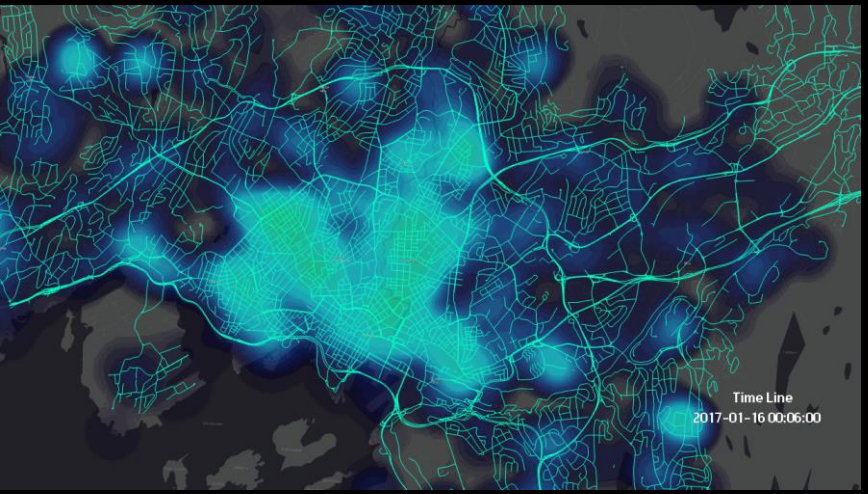
Measured the mobility behaviour of people in Oslo

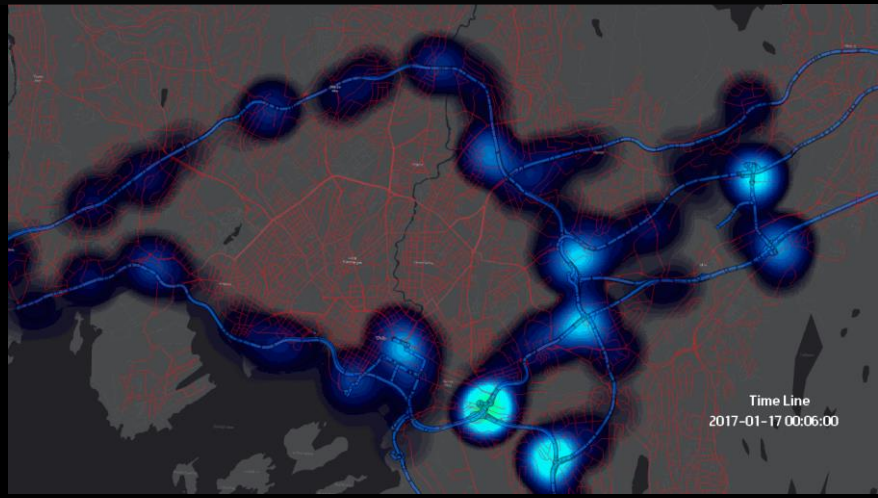
Correlated population dynamics with drug consumption measurements

Discovered the best time of the year to run anti-drug campaigns

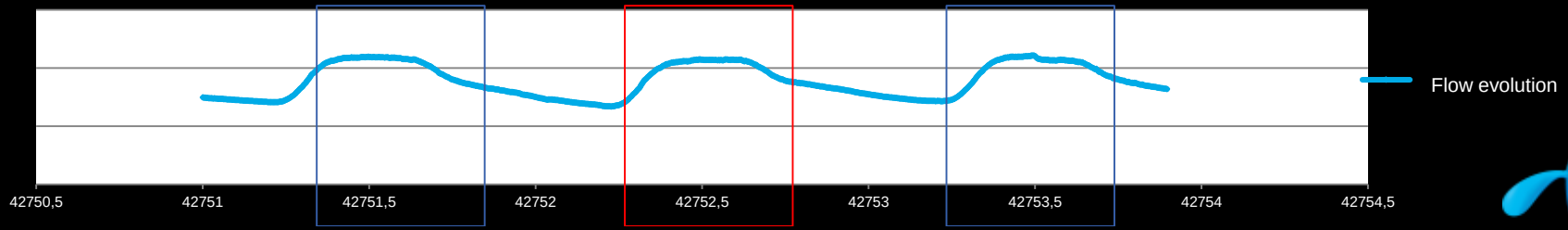


Effect on the mobility in Oslo after the diesel ban





Flow through unbanned roads



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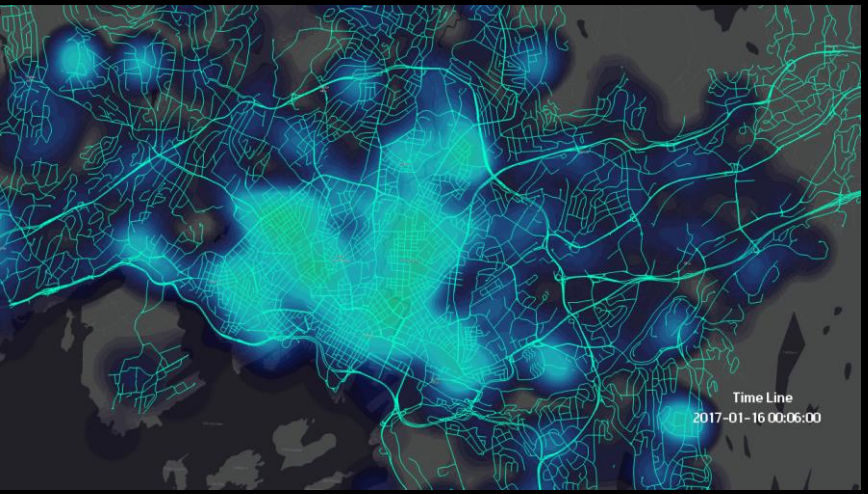
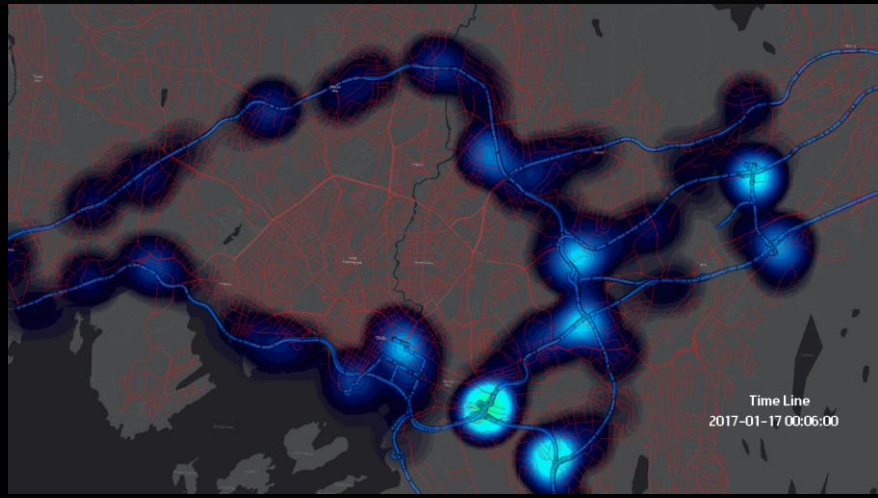
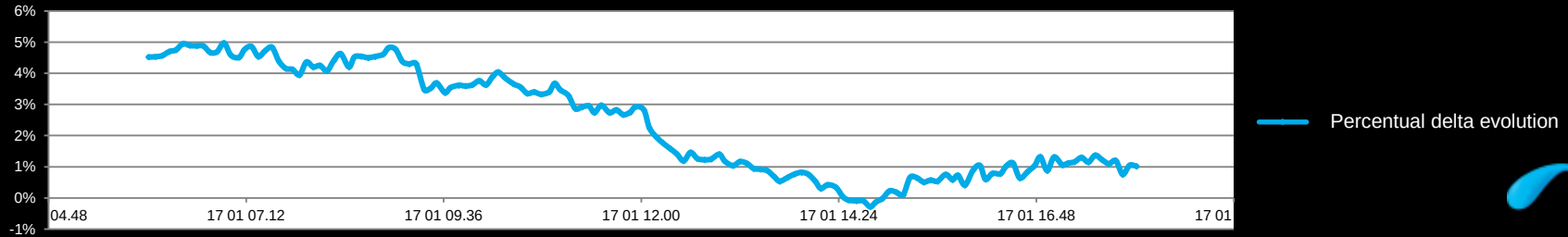




% change in flow through unbanned roads (6 am - 6pm)



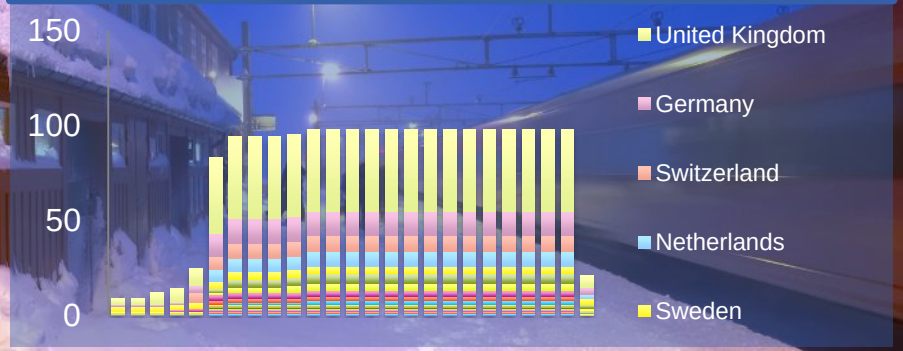
Telenor discovering foreign tourists at Finse

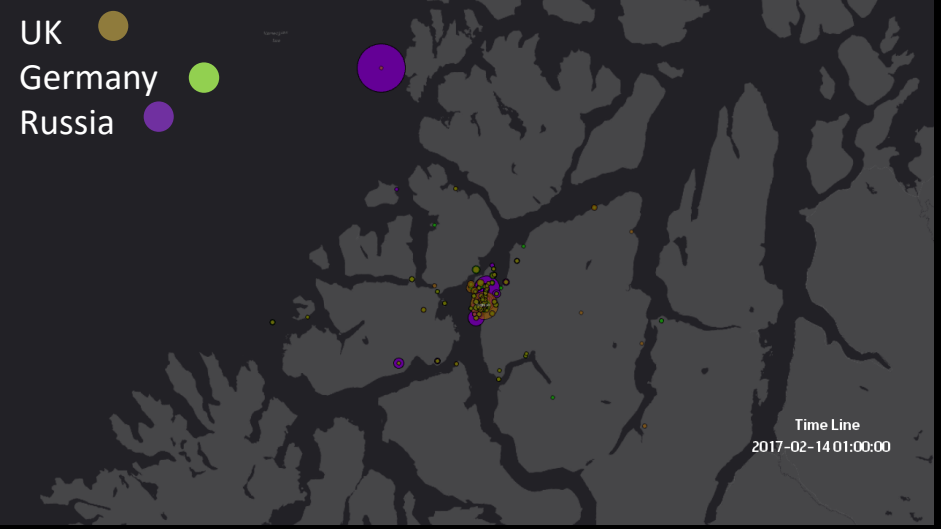
33,850 foreign travelers from 53 countries during February'17

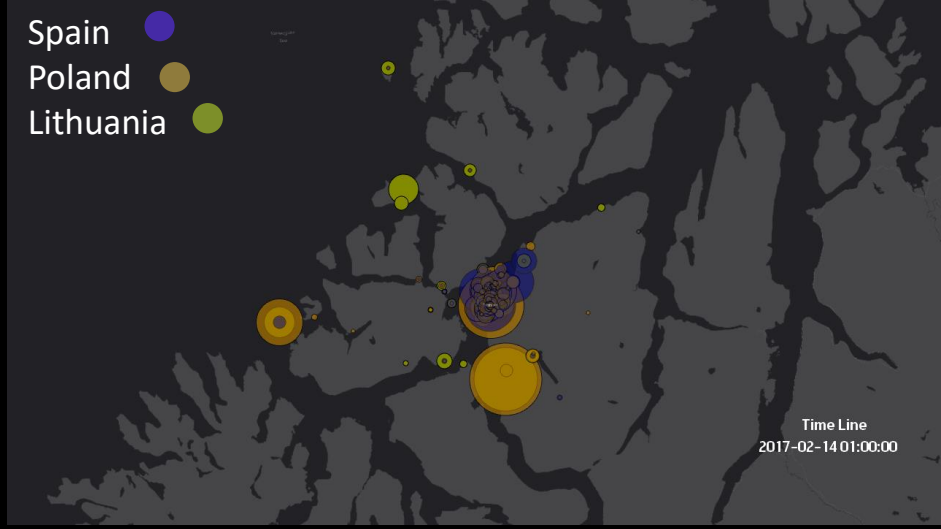
Discovered the top nationalities of foreign travelers

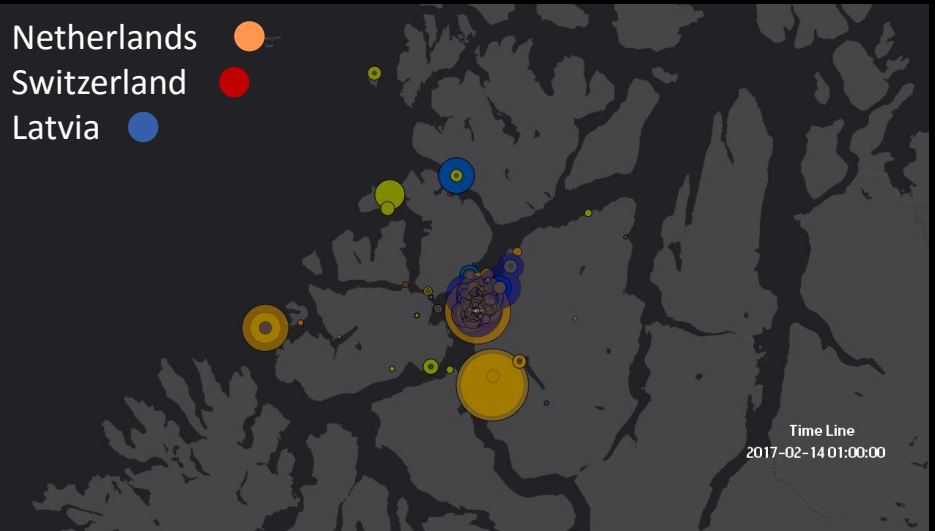
Discovered preferences on time of travel of foreign passengers

From signaling data: measure a train arriving to Finse









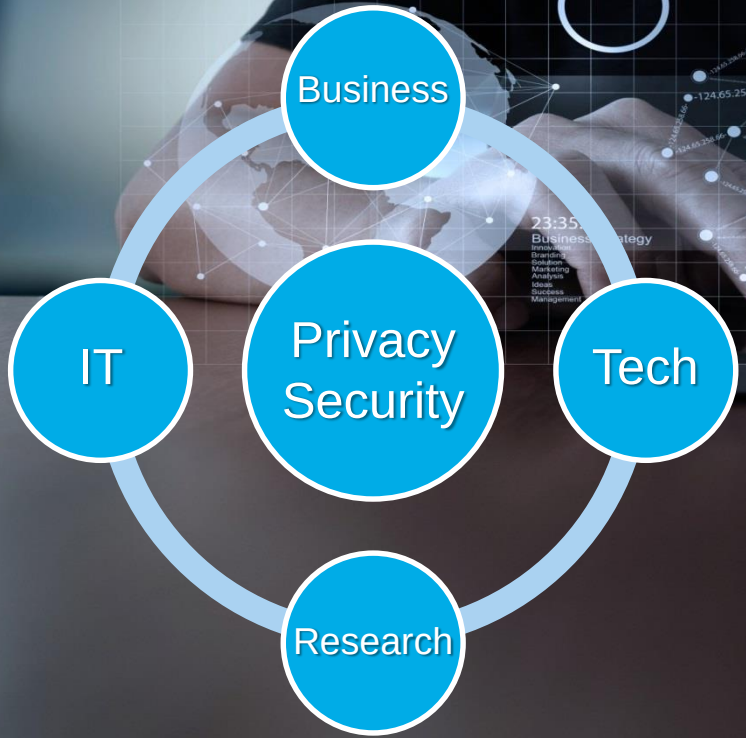
Top foreigner nationalities

United Kingdom: 3079
Germany: 1907
Lithuania: 807
Russian Federation: 1009
Spain: 717
Poland: 563
Estonia: 310
Netherlands: 540
Latvia: 274
Switzerland: 674

France: 342
United States: 259
Italy: 337
Finland: 257
Austria: 179
Bulgaria: 98
Belgium: 196
Czech Republic: 131
Romania: 88
China: 133

We collaborate across and learn from the best

Internal collaboration



External collaboration

Massachusetts Institute of Technology

HARVARD UNIVERSITY

UiO : University of Oslo

NTNU
Kunnskap for en bedre verden

NSB

Northeastern

NIVA
Norsk institutt for vannforskning

SINTEF

Art. 6 GDPR: Lawfulness of processing

Art. 6 GDPR
Lawfulness of processing

1. Processing shall be lawful only if and to the extent that at least one of the following applies:

   (a) the data subject has given consent to the processing of his or her personal data for one or more specific purposes;

   (b) processing is necessary for the performance of a contract to which the data subject is party or in order to take steps at the request of the data subject prior to entering into a contract;

   (c) processing is necessary for compliance with a legal obligation to which the controller is subject;

   (d) processing is necessary in order to protect the vital interests of the data subject or of another natural person;

   (e) processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller;

   (f) processing is necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data, in particular where the data subject is a child.

   Point (f) of the first subparagraph shall not apply to processing carried out by public authorities in the performance of their tasks.

Privacy Framework

«Privacy by Design»

I. Masking (Pseudonymization)	II. Aggregation (Anonymization)	III. Prediction (Extrapolation)
• In-memory hashing of identifiers • Sensitive, raw network data never stored • Hash-value is recycled every «24» hours reduce risk of inference based on trip data	• Data is aggregated up to a significant level of people (e.g. 20) • All locations with less than this level are removed	• Estimation from # active subscribers to # people (based on market share, observation length, etc.) • Users only granted access to extrapolated data

Privacy Framework

Meny Søk telenor Mine sider

Hvordan hjelpe samfunnet med stordata?

ryptering

anonyme dataene ytterligere,
sformert daglig. Denne dataen
t hos Telenor.

https://www.telenor.no/om/teknologi-norge/stordata-samfunnet.jsp