

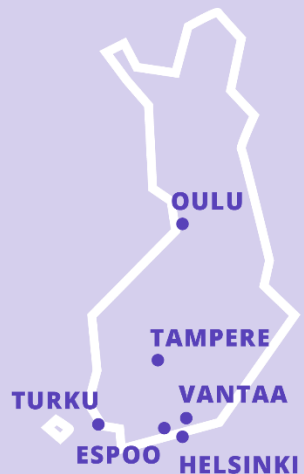
**ESPOO**

## **Artificial intelligence recognises those who need support**

Tomas Lehtinen, Data Analytics Consultant, City of Espoo



# 6



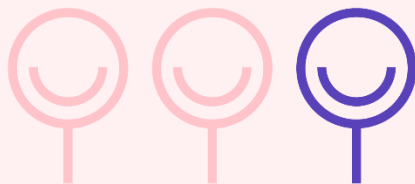
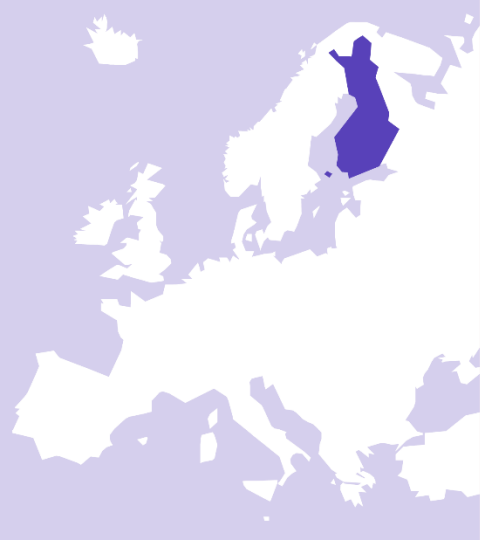
## BUDGET

# €100 M



## FINANCIERS

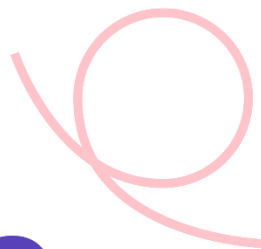
- **Helsinki-Uusimaa Regional Council** (ERDF)
- **Häme ELY Centre** (ESF)
- **Six Cities**
- **Project partners**
- **Finnish Government**



**Concerns every third Finn.**

# 30+

**ongoing projects**



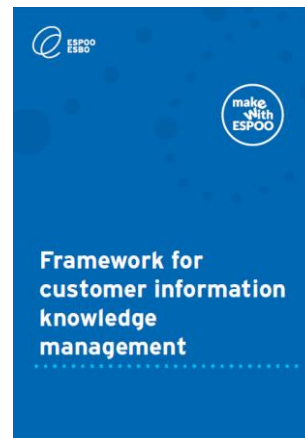
## MAIN GOALS

**new business,  
know-how  
and jobs**

**increasing national competitiveness**

## A framework for developing services and the management of customer relationships with data

In Espoo, we create new success stories by introducing different actors, operations and networks to each other. The **#MakeWithEspoo** methods and tools can help us to ensure that we do the right things, with the right people, at the right time and using the right skills.

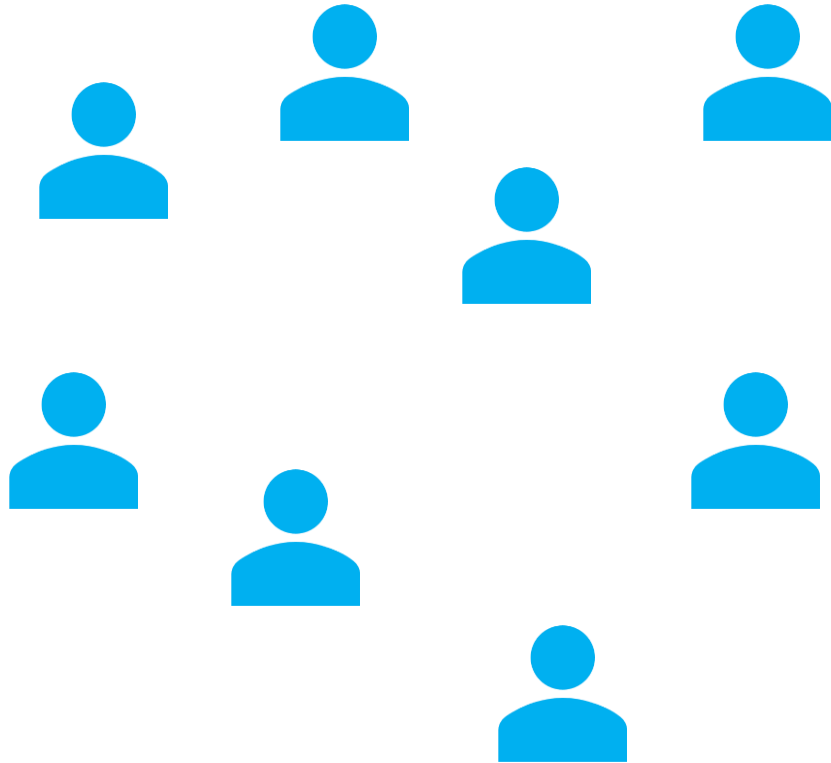


# The data or knowledge may be kept in silos

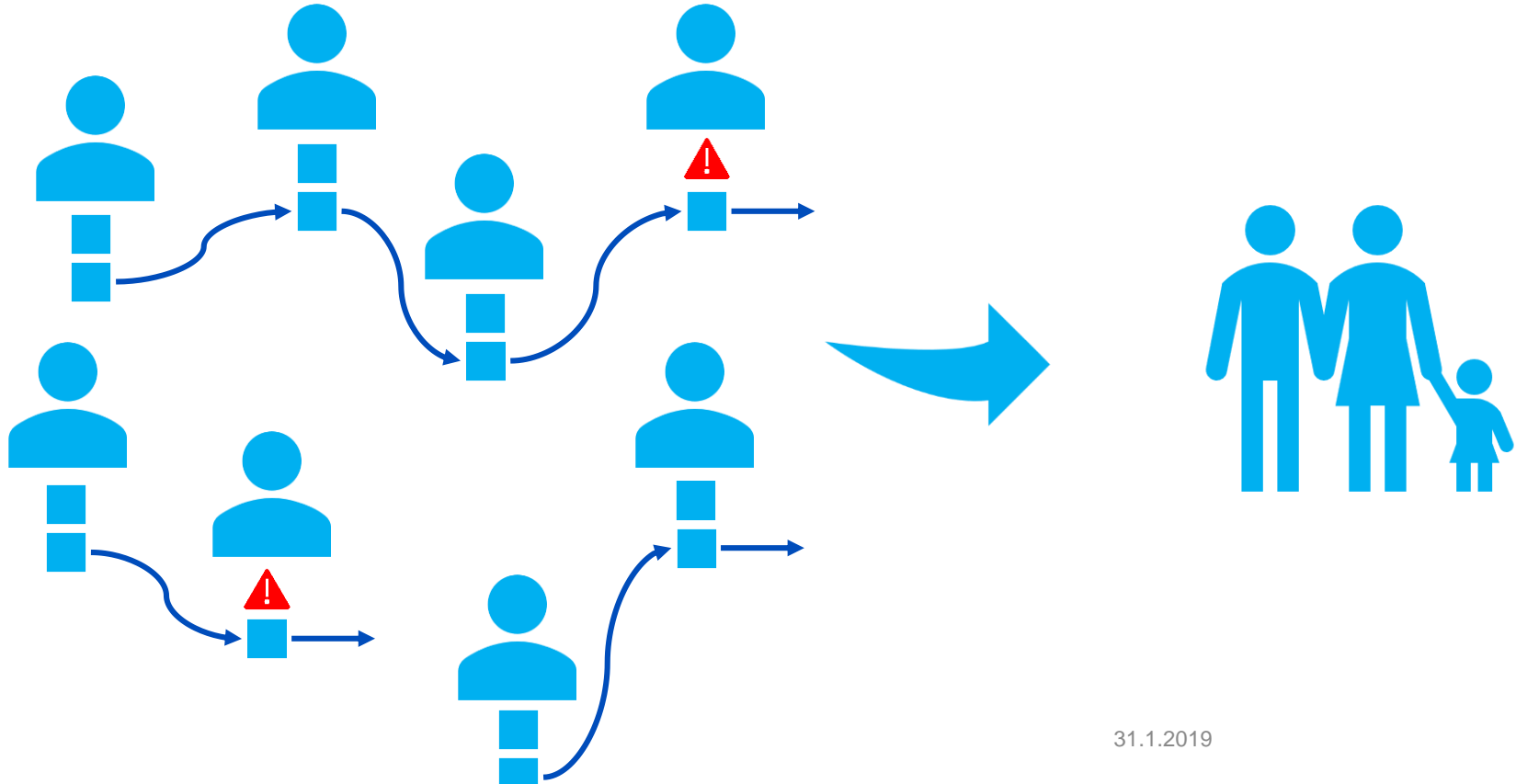
- data is the key
  - but kept in siloes
    - Major Challenge!



# Individual-oriented based data systems



# Individual-oriented based data systems

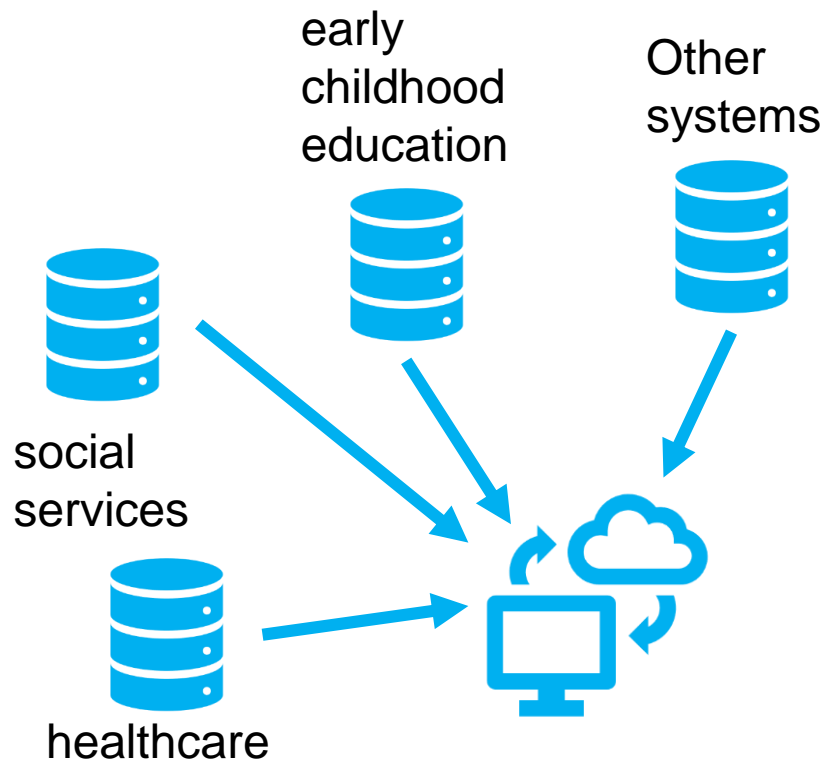




ESPOO

## a unique artificial intelligence experiment

- The starting point was to test whether artificial intelligence can help target services proactively.



## An extensive data mass

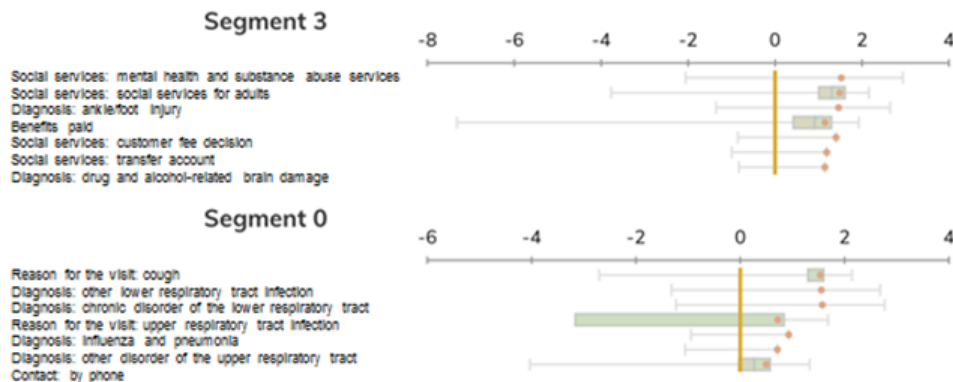
- 500,000 people for the period 2002-2016 from the Terveys-Effica healthcare database.
  - Espoo's Terveys-Effica had data from more than 37 million contacts, 3 million diagnoses and 24 million laboratory results.
- The Sosiaali-Effica database contains social services related data from around 160,000 people.
- Human brains are needed!



# a data-based segmentation

- The data mass was very large, which allows for a new kind of segmentation.
- Data was added in a controlled manner, and we let artificial intelligence create the segments

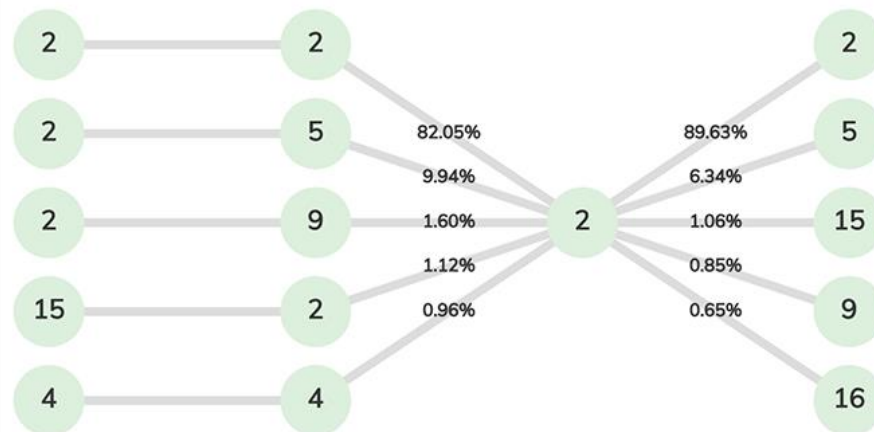
- some distinct factors that distinguish the segments



## Promising results from predictions

- The huge amount of data also allowed us and AI to make predictions.
- We will be able to predict the impact of the use of certain services well into the future!

Segment predictions



## Looking for the root causes of problems

- We also tested the prediction for customers of child protection services
- Since the data mass also allowed for an assessment of the use of services by a whole family
- About 300,000 households over a period of 10 years.
- Artificial intelligence found approximately 280 factors that anticipated a child welfare client relationship.

## Preliminary results on child welfare and child psychiatry client relationships

- The data could be used to examine, for example, what differences there were in the previous use of services by families regarding which a child welfare report had been filed or that had received a referral to youth psychiatry.
- The child welfare report or referral to youth psychiatry was preceded by using health services 3–5 times more than the control group.
- The results, however, are very preliminary and they cannot as such be used for making conclusions..

## Development work is only beginning

“

*The Espoo experiment demonstrates that artificial intelligence and the utilisation of data have a significant role in health care, whether in developing new service paths or supporting health care professionals in their daily work.”*

- Matti Ristimäki, Head of Data-Driven Businesses at Tieto.



ESPOO

## Espoo is developing ethical rules for artificial intelligence

- Municipal residents want to know how their information is used.
    - ethical rules for AI and open communication!
1. own ethical rules for using AI
  2. processes and certificates for the ethical use of artificial intelligence
  3. technical identifiers for AI



Thank you!