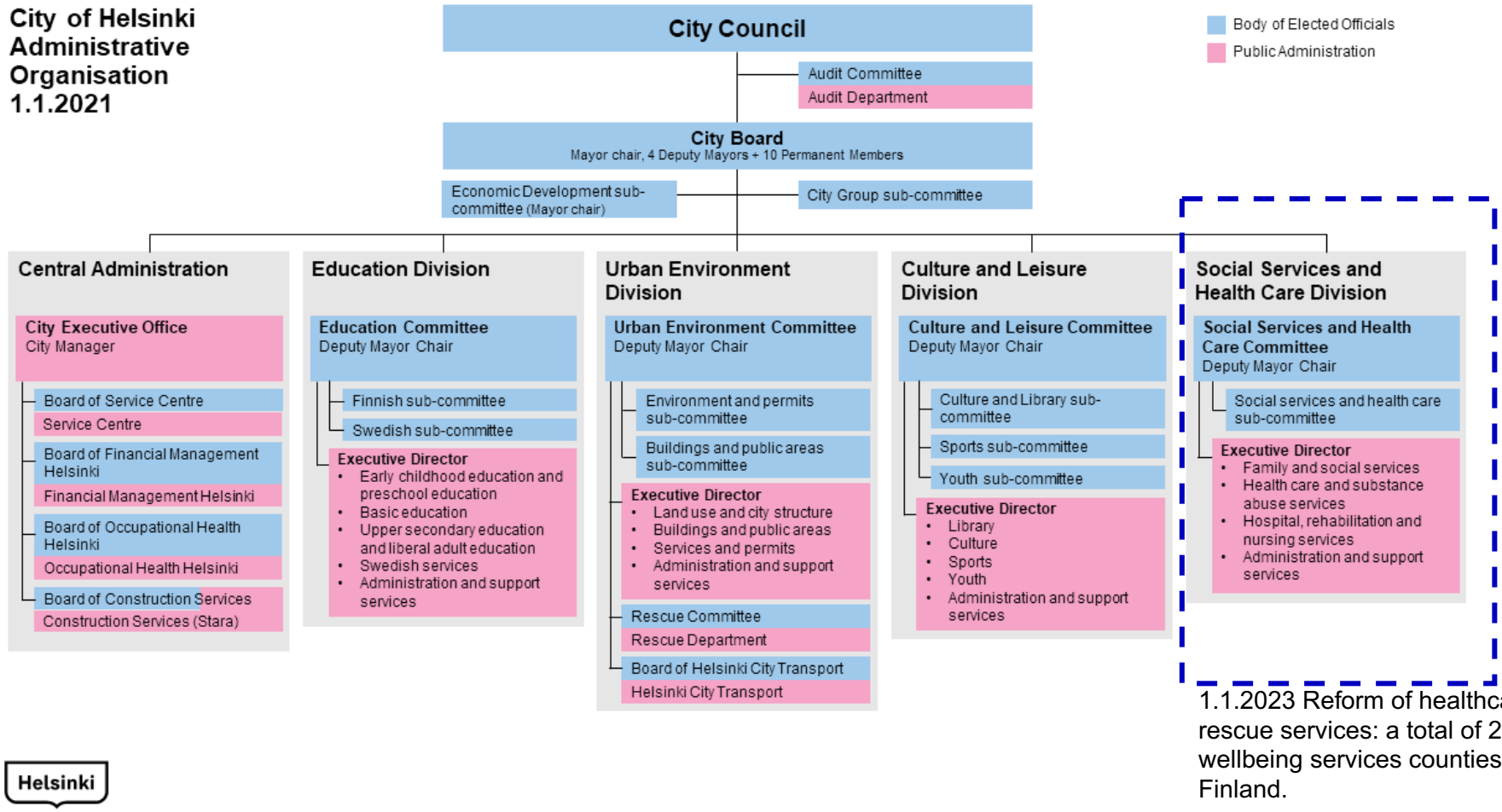
From a Reactive to a Proactive City on Citizens' Terms

Helsinki

June 2022

Mikko Rusama, Chief Digital Officer @ City of Helsinki
Chairman of the Board @ Forum Virium Helsinki

39 000 people at your service



1.1.2023 Reform of healthcare, social welfare and rescue services: a total of 21 self-governing wellbeing services counties will be established in Finland.

The City of Helsinki will be responsible for organising health, social and rescue services within its own area.

City of Helsinki – Finland's biggest service organisation with 39 000 employees

- Finnish law requires cities to provide 535 mandatory services*
- In addition, City of Helsinki provides 200-300 voluntary tasks or services

- **Healthcare**
- **Social services**
- **Education**
- **Infrastructure and land use**
- **Economic development**
- **Rule enforcement and inspections**

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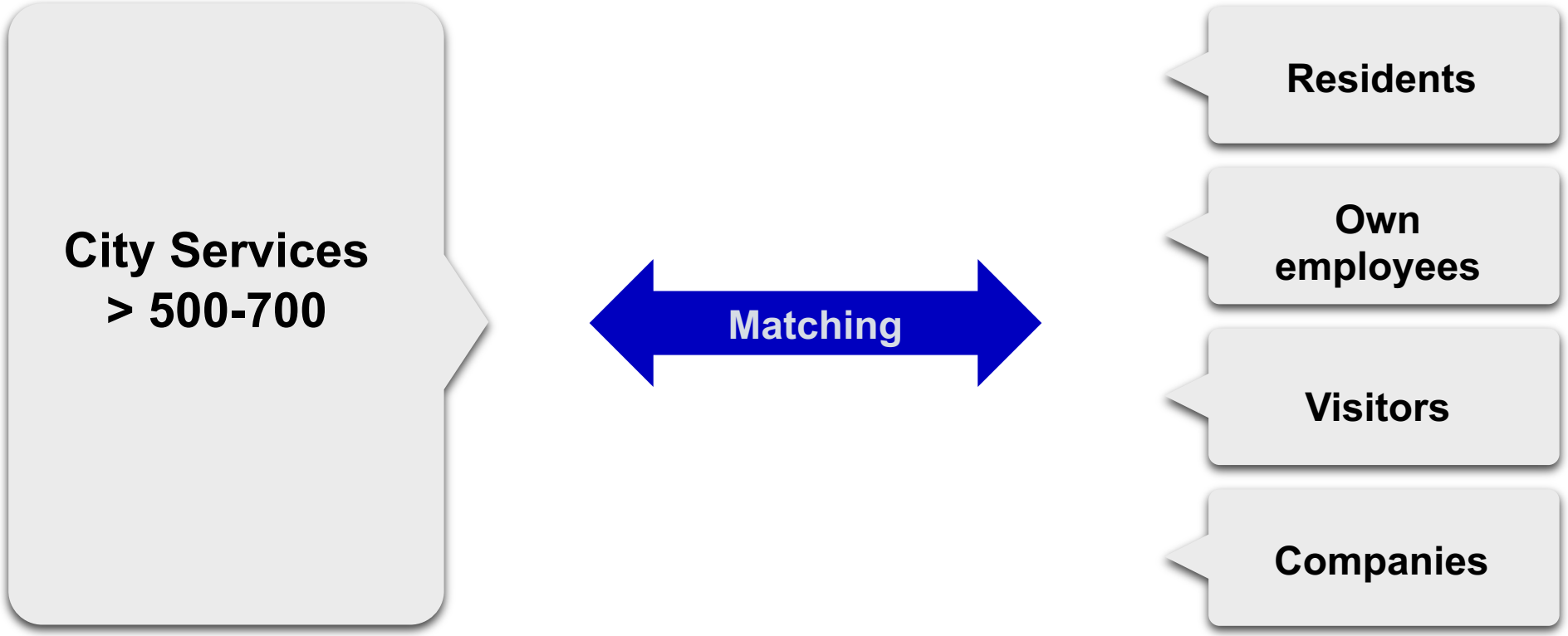
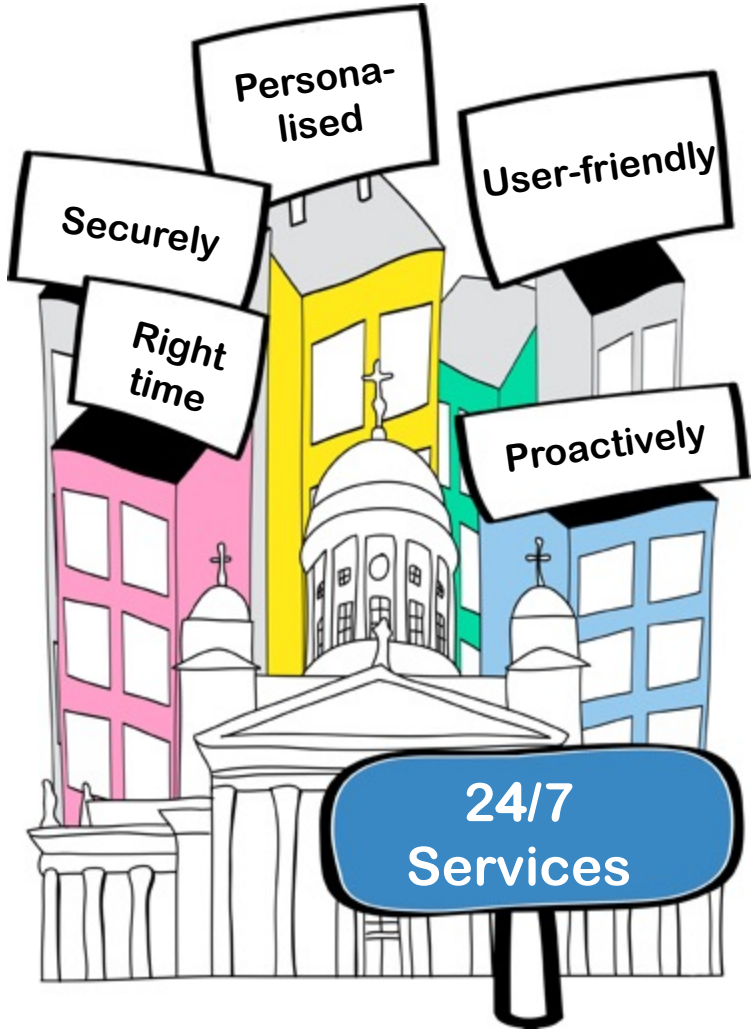
*study conducted by the Ministry of Finance in 2012

Service discovery and matching problem



Digitalisation is a key enabler to all city operations and new city strategy



Productivity and cost savings: produce more and better with less resources

E-services are the primary option. City services are easily accessible, no matter what the time and place.

Proactive and preventative services and recommendations

Automate services and processes and develop new self-service options.

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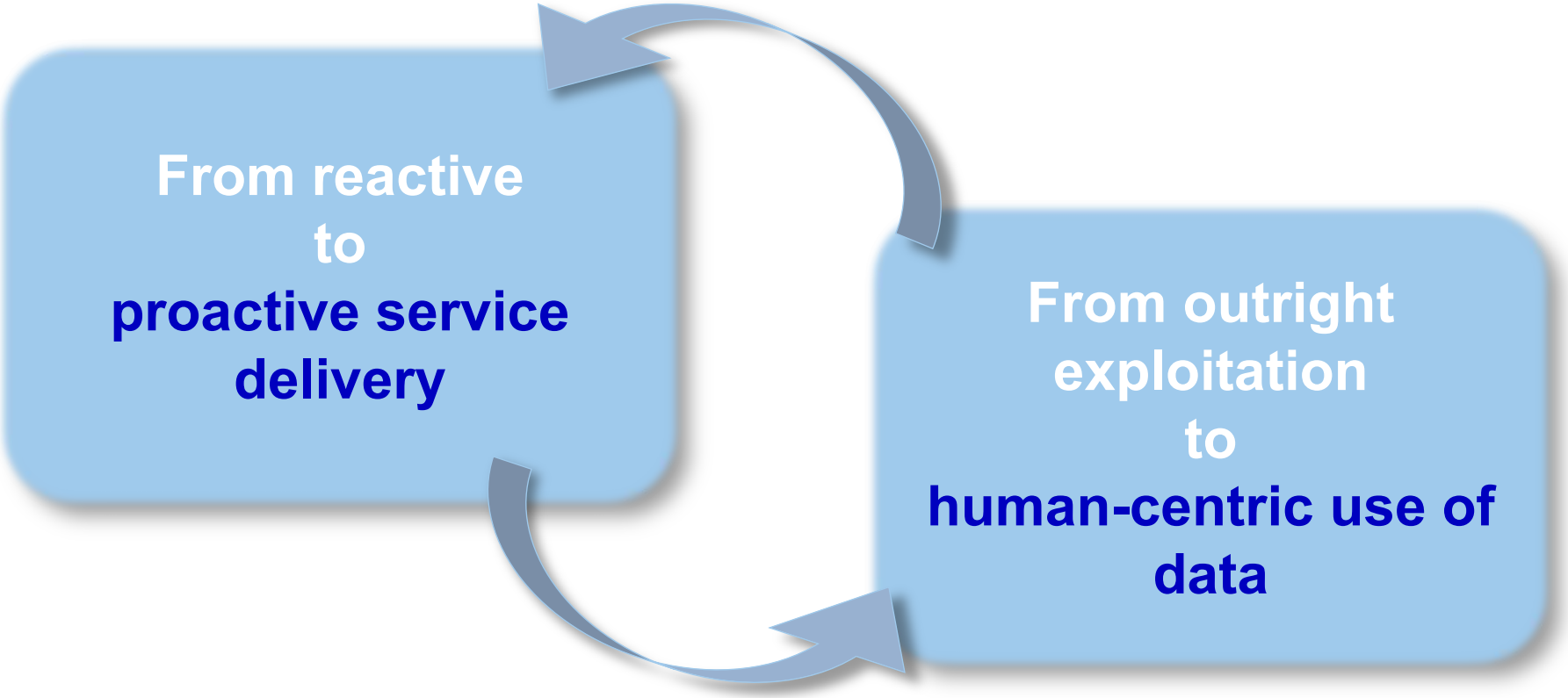
Two interrelated paradigm shifts



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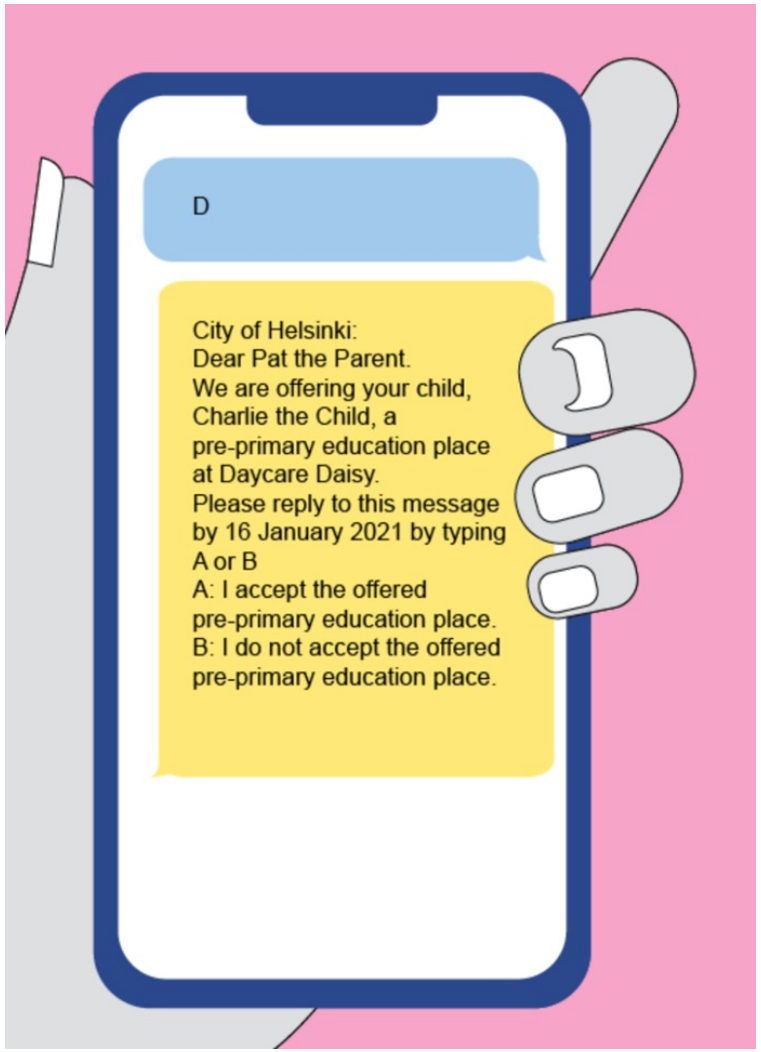
From a reactive to a proactive service delivery

"Flipping the service delivery model from pull to push by anticipating needs and automatically triggering personalized services using context-awareness." (Linders, Liao, and Wang 2018)

Preschool placement for 6 year-olds with one SMS message in Helsinki



- Jan 2021 – scale up, all city regions
  - SMS sent to 5591 families
  - Response rate 93% (5201)
  - Acceptance rate 89% (4645)

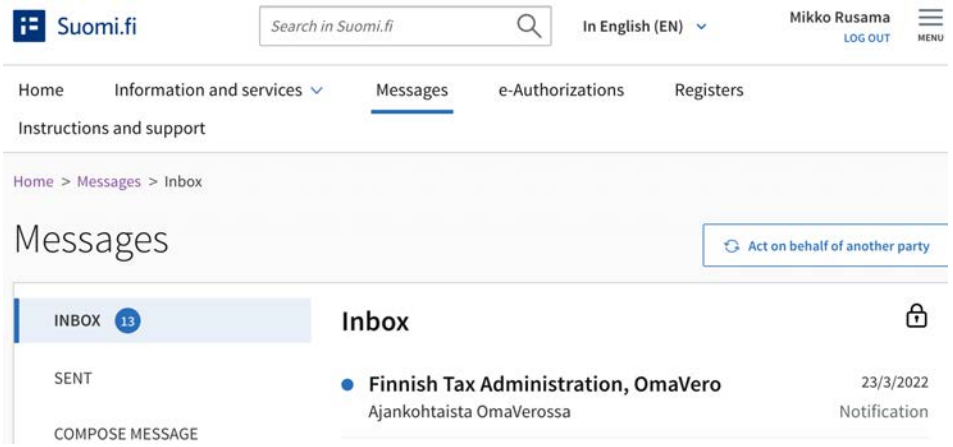
- Jan 2022 via new Asti service
  - Email sent to 4 396 families
  - Response rate 95% (4185/4396)
  - Acceptance rate 89%
  - Satisfaction score 4,32/5 – “can it be this easy”?

Confirmation of the placement in 1 min
(Earlier, 2 months with paper and online forms)

Proactively offering placement to the 1st grade in the primary school

For parents, who had enabled national Suomi.fi messaging service:

- proactively offering placement in the **closest** primary school
  - Data: population information system
- 66% (4 250 / 6 400) of parents accepted the placement
- Formal confirmation via Suomi.fi service



- Fall 2022: guardians of 2-4 months babies proactively contacted via Suomi.fi (or snail mail) to promote city's early childhood services
  - Understand and estimated future needs, optimise resources

The challenge: the strain on Helsinki's health care services is increasing

1
An ageing population

2
Segregation, accumulation of health problems

3
Growing city, increasing immigration

4
Lack of resources

5
Increasing costs

6
Long waiting times

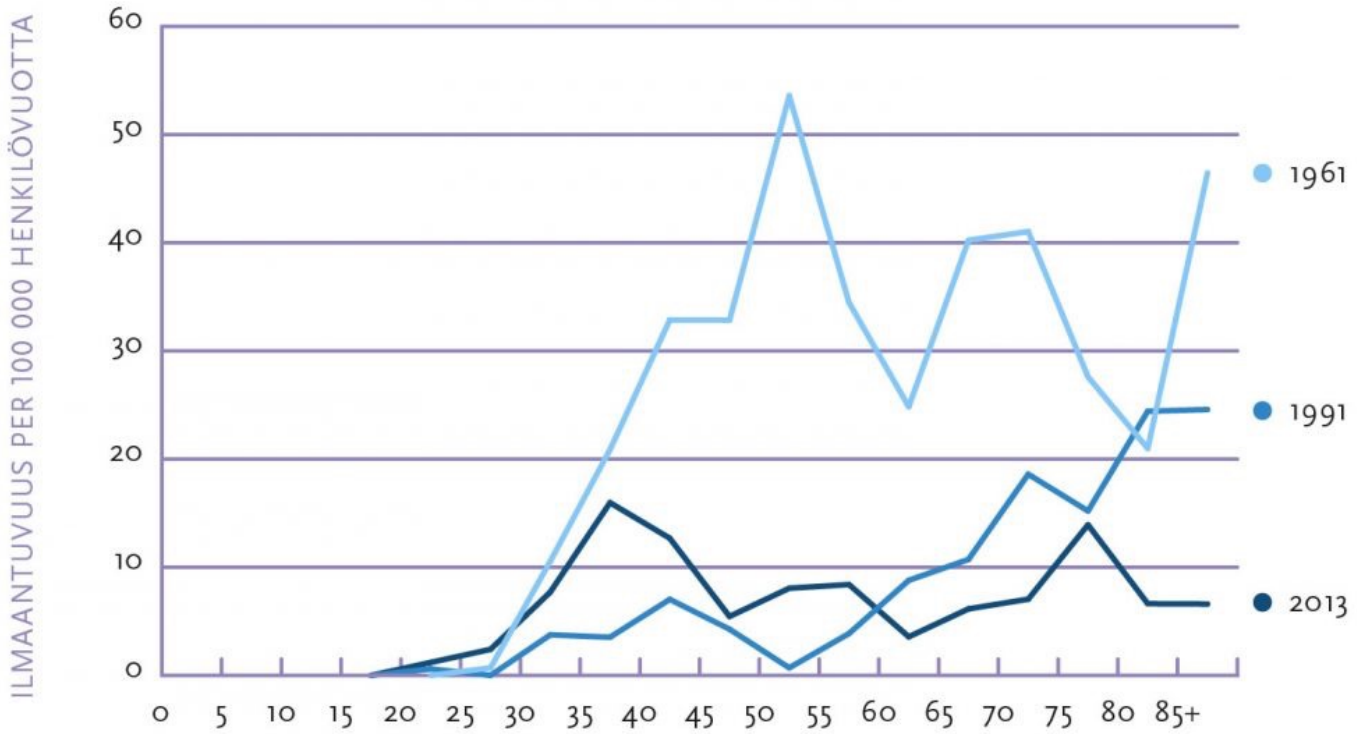
Paradigm change needed!

10% of people generate 80% of the social and health care costs

"Identifying and treating these people
well in advance
would be beneficial for the state economy"

HS 15.3.2019

Cervical cancer screening for 30-65 year-old women in Finland avoids 250 deaths each year



©Suomen Syöpärekisteri 2016

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Cancer screening is the systematic search for the precursors or early stages of cancer to reduce deaths due to cancer among those screened

CERVICAL CANCER SCREENING

Women of 30-65 years of age are invited to take part in cervical cancer screening every five years. Some municipalities also invite women aged 25 for screening.

BREAST CANCER SCREENING

Women of 50-69 years of age are invited by personal letter to take part in breast cancer screening, or mammography, every two years.

COLORECTAL CANCER SCREENING

Screening for colorectal cancer decreases mortality from colorectal cancer. Early onset cancer requires less invasive treatment and causes less distress.

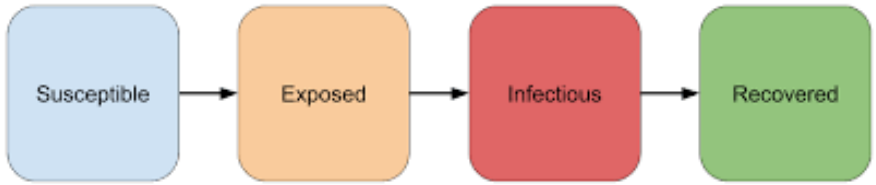
Health Benefits Analysis
Identify and proactively treat high-risk patients

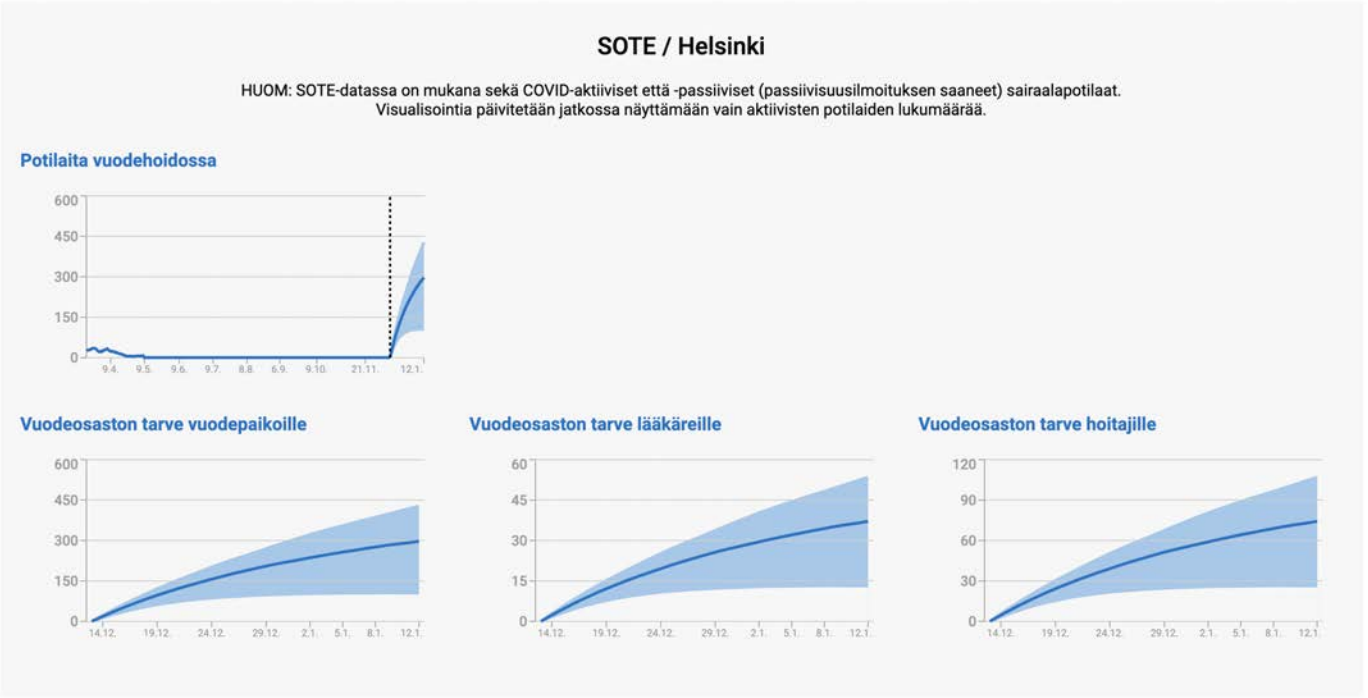
- Analyse health care data of 640 000 patients using 300 approved criteria
- Identify care gaps and prioritize patients
- Invite patients with highest risks to doctor's appointment to get proper treatment.

Example use cases:

- Identify patients using central nervous system drugs to ensure they have a dedicated doctor who can follow-up on the patient's medication and condition
- Identifying patients with a high blood pressure and ensuring right medication to avoid heart and brain attack
- Proactively contacting risk groups for COVID-vaccinations (SMS)

Data-driven decision-making experiment: Corona dashboard predicting need for hospital resources (SEIR-model)





From outright exploitation to human-centric use of data

Human centricity: to empower individuals with their personal data (MyData Declaration)

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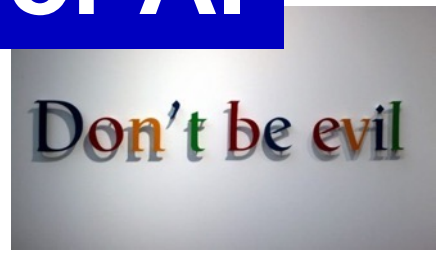
Why a human-centric approach?

- Strict regulation on using personal data already exists, e.g., GDPR
- But even more importantly: Do people trust us to use their data and AI for their benefit (and don't be evil)?
- Cities operate under a democratic mandate: accountability, **transparency,** citizens' rights and safety are key to trust – this also applies to a city's digital services

Without trust there is no use for AI



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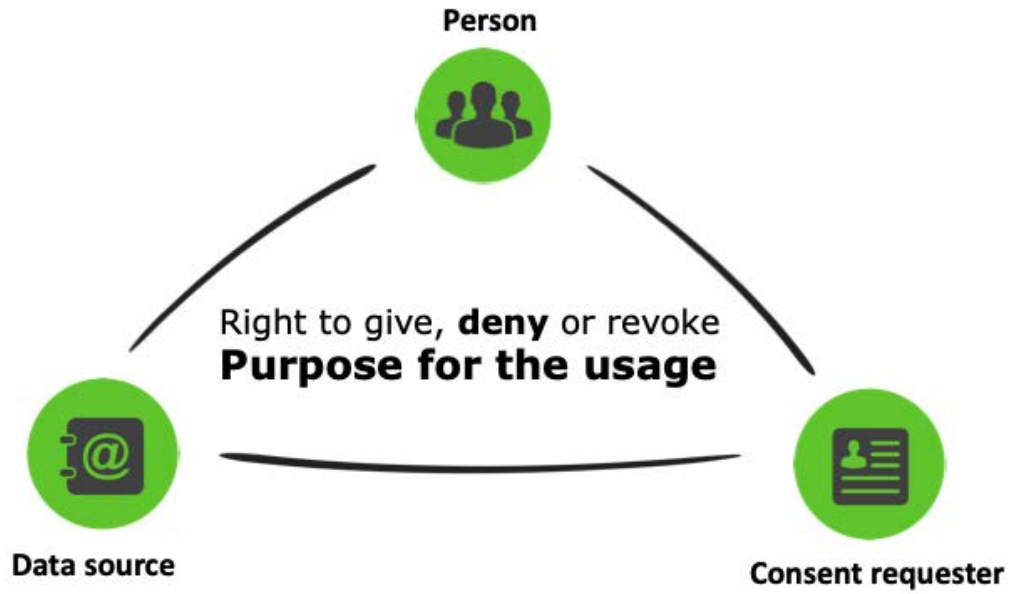
Permission, legal basis, for data processing

Human centricity: to empower individuals with their personal data (MyData Declaration)

Freely given consent as a cornerstone of MyData - imbalance of power?



Helsinki
Työterveys Helsinki (Röntgen)

Potilasasiakirjatilaus
tulostettu 03.01.2020

Vastaanottaja
Meilahti

Tilaaja
Työterveys Helsinki
Työterveys Helsinki (Röntgen)
PL 5600
00099 HELSINGIN KAUPUNKI
Puhelin

Paikka ja aika
HELSINGIN KAUPUNKI, 03.01.2020, Röntgenhoitaja [redacted]

Pyydämme lähettämään
Potilaan nimi
Mikko Henrik Rusama
Henk
190

Dokumentit	Huomautukset
Röntgenkuvat	VASEN LONKKA

Huomautukset
Radiologille vertailuun

Potilaan suostumus
Suostun ko. tutkimus- ja hoitotietojen antamiseen yllämainitun työterveys
Paikka ja aika

Reduced daycare fee for families

- By law 1) cities have to organise daycare services 2) parents’ financial situation defines the rights to reduced day-care fees
- In Helsinki daycare is organised for ~27 000 children annually
- To be eligible for a reduced daycare fee, both parents must provide city with requested documents to justify their financial status

Current state (As-is):
Family income data has to be submitted by filling manual forms in pdf format either by mail or secure email to the City of Helsinki’s customer fee unit.

Future vision (To-be):
As a citizen, I can authorise the city to verify my annual income. With my consent, the city can automatically check my income from the National Income Registry and determine the correct applicable daycare fee with potential reductions for my child.

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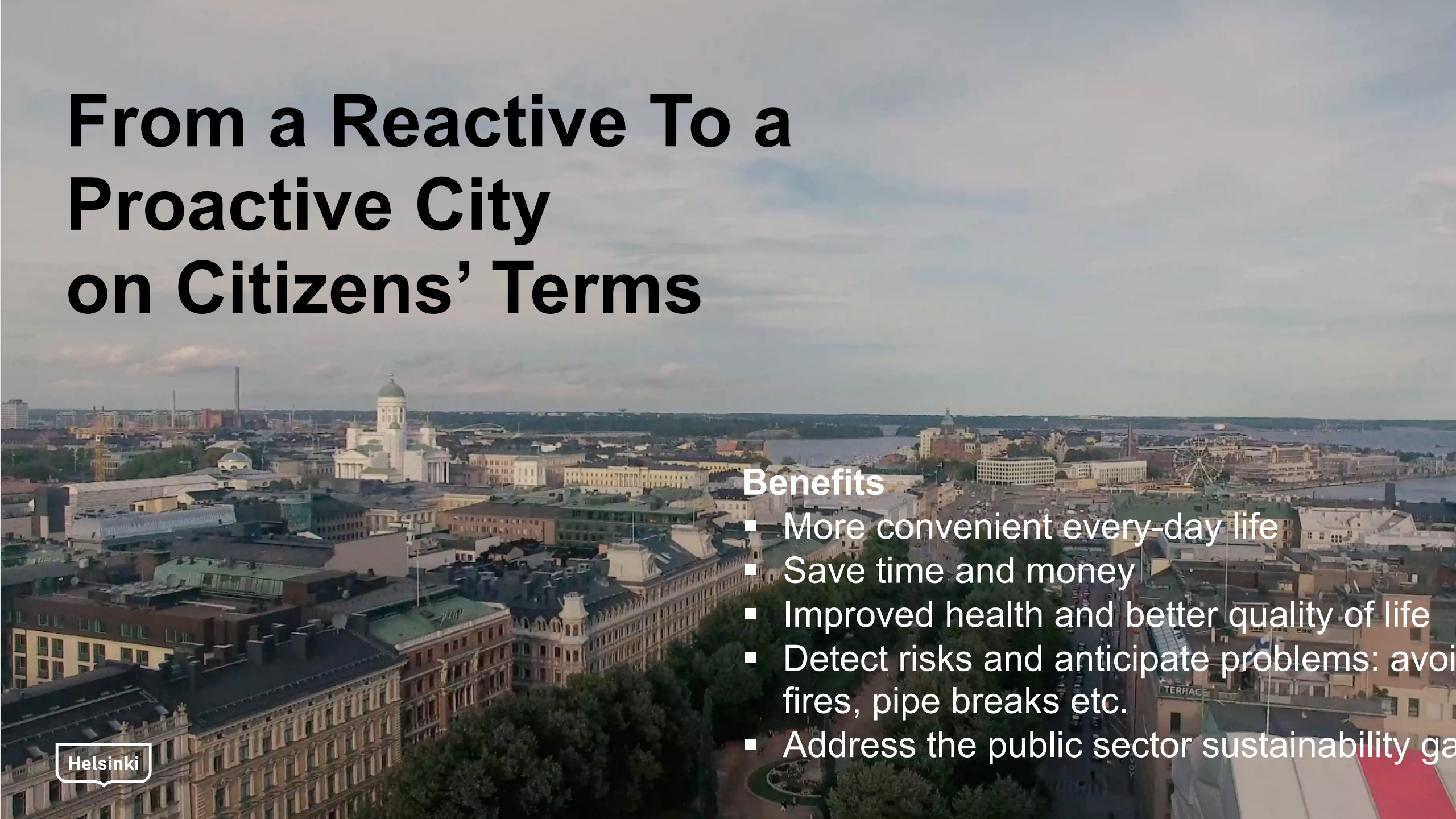

Benefits

- More convenient every-day life
- Save time and money
- Improved health and better quality of life
- Detect risks and anticipate problems: avoi fires, pipe breaks etc.
- Address the public sector sustainability ga

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Lessons learned

New culture, challenge your old ways of working:

- User-centricity
- Experimentation

Flip the service model: The city should provide a service automatically or *de minimis* recommend the most suitable service if …

- The city has all the required personal data and information regarding the citizen's likely service need; and
- The city has the permission to use the data
- The city has an obligation to provide a statutory service;
- A citizen is eligible for the service
- Proactive service delivery provides benefits both for the citizen (e.g. time savings) and city (e.g. reduced costs)

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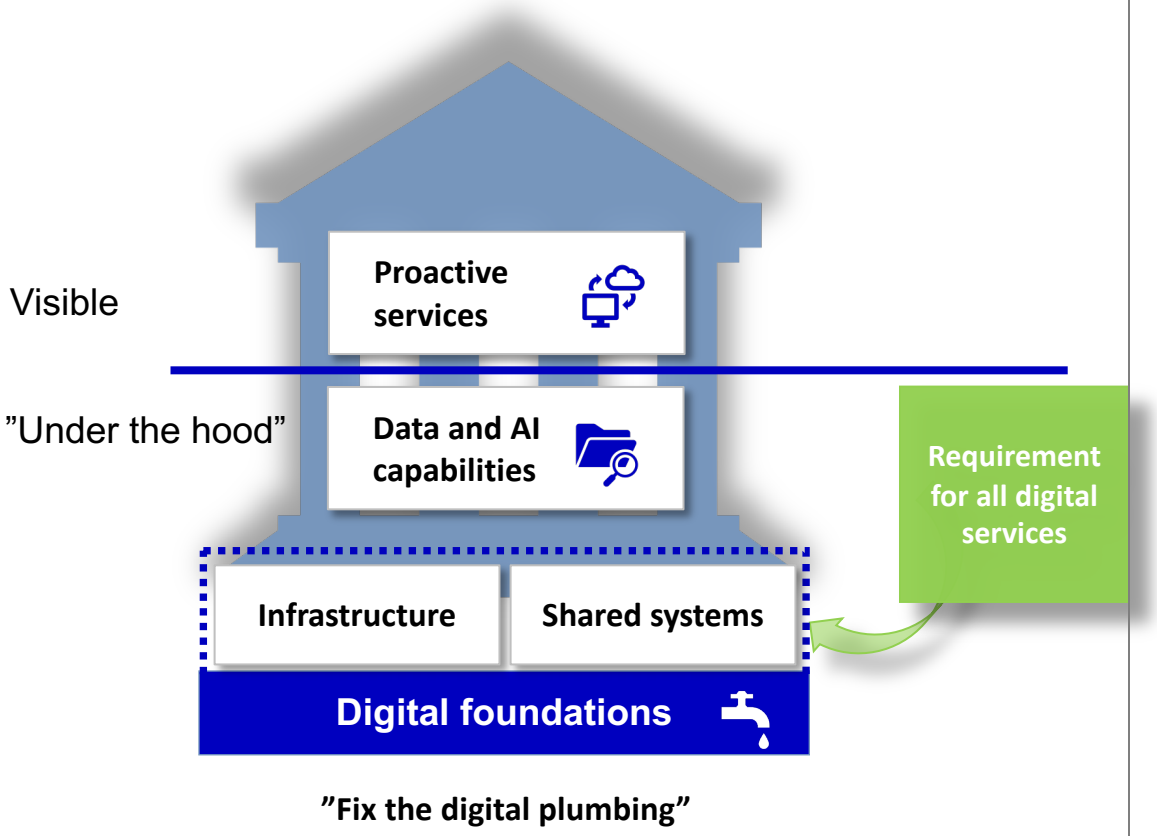
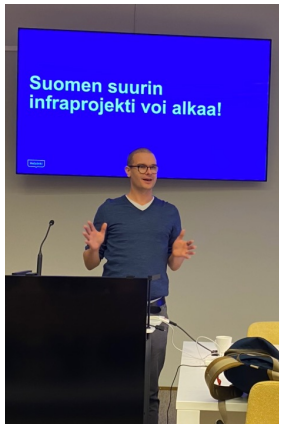
Fix the digital plumbing first





Vision of the City of Helsinki's data strategy

The data generated by Helsinki is the most usable and used city data in the world by 2025

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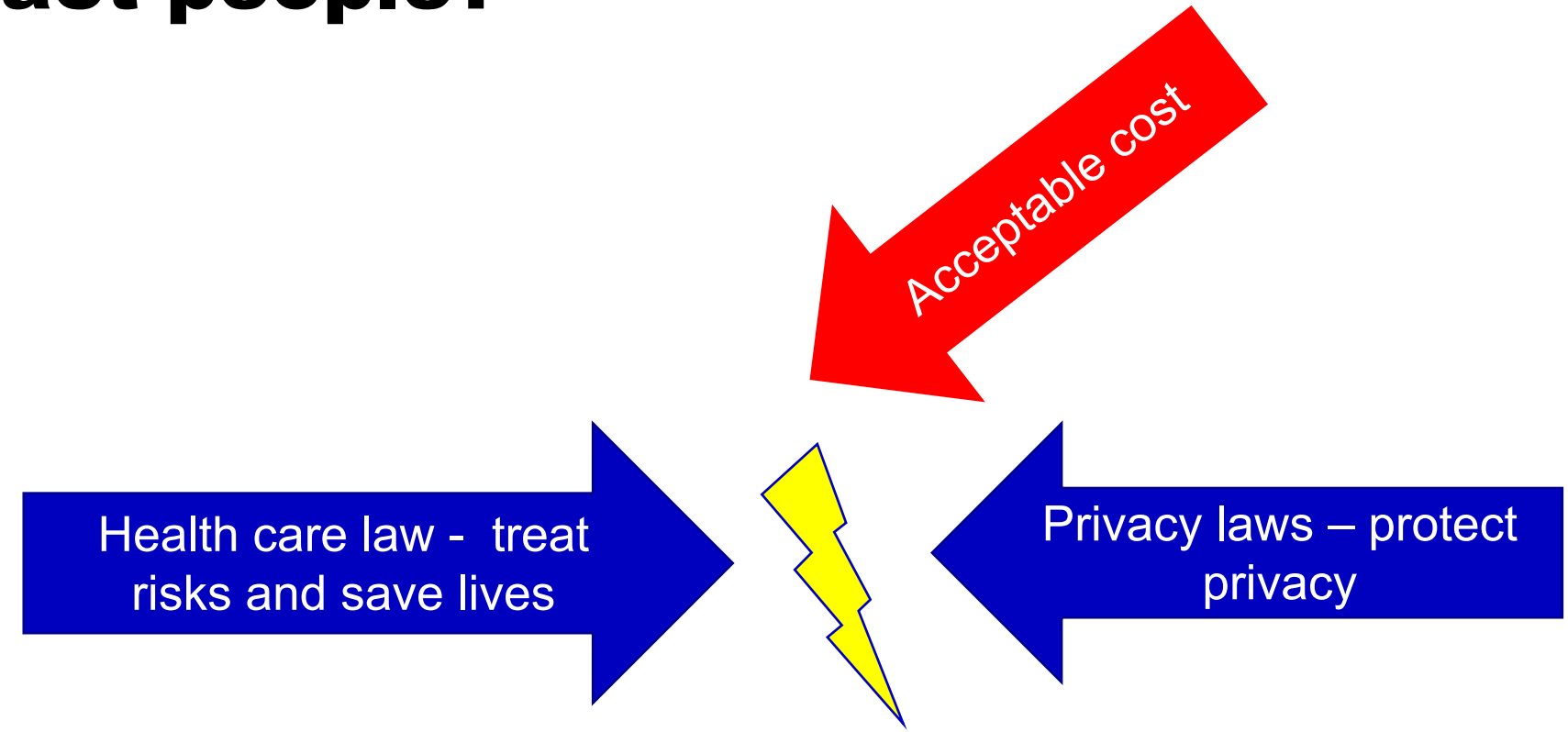
https://digi.hel.fi/english/helsinki-city-data-strategy/

Photo: Eetu Ahanen / City of Helsinki

Data challenges – 360 view of the person needed for proactive city

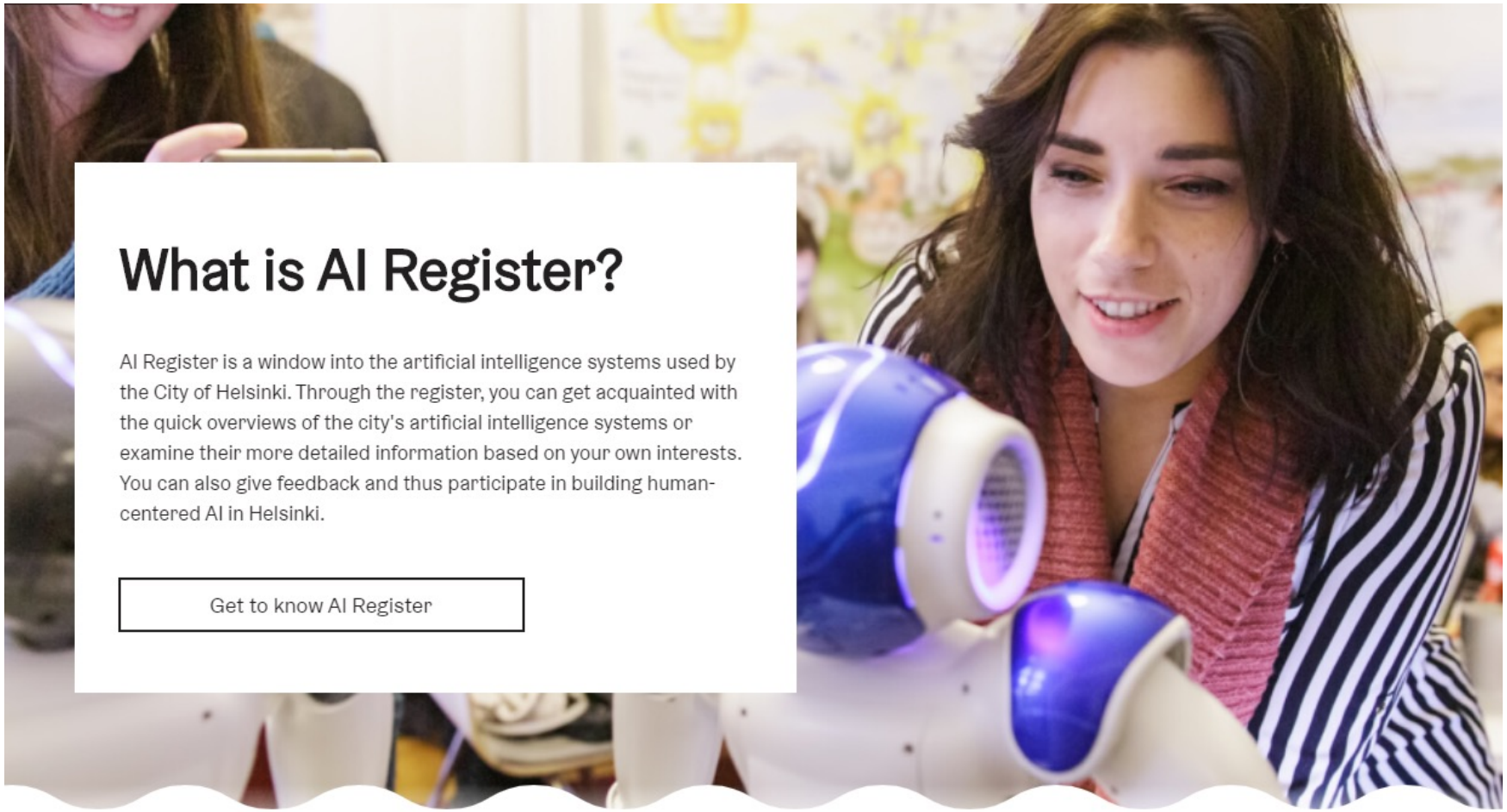
- Cities are massive data silos
  - 200+ registries
  - 450 systems with personalised information
- Legal challenges
  - Data cannot be combined
  - Profiling
  - Automated decision-making
- Many data and analytics platforms
- Legacy systems and data interoperability
  - No APIs
  - No harmonised data formats
- Lack of digital consent management

The Great Clash: Can we use data to proactively contact people?



What is morally right?

AI Register



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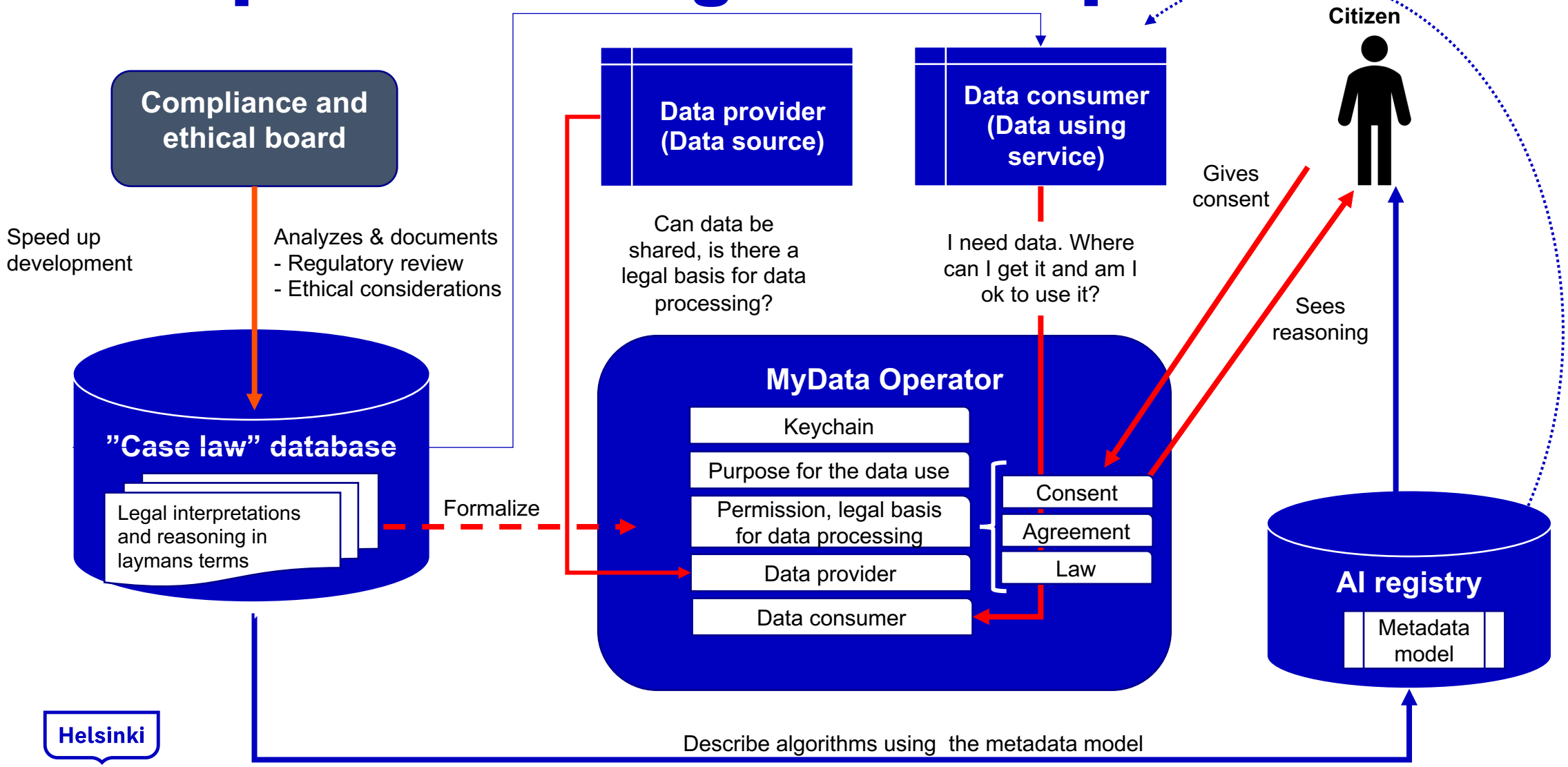
https://ai.hel.fi/en/ai-register/

Helsinki's approach to ethical and transparent management of personal data



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Change in leadership paradigm

"Assessment of what is needed to produce good leadership **has moved decidedly against the 'great leader' model** – a model in which individuals are perceived, almost single-handedly, to drive organisations to success. In its place has emerged the **'post-heroic' model of leadership** which involves multiple actors who take up leadership roles both formally and informally and importantly **share leadership by working collaboratively**. This takes place across organisational or professional boundaries. Thus shared and collaborative leadership is more than numerically having 'more leaders'"

The King's Fund (2011). Future of leadership and management in the NHS
https://www.kingsfund.org.uk/sites/default/files/future-of-leadership-and-management-nhs-may-2011-kings-fund.pdf

City of Helsinki's Digital Strategy 2022-2025:

Approved 12.4.2022

From a reactive to a proactive city on citizens' terms

Why?

City strategy

Most functional city in the world that makes the best use of digitalisation

What?

Strategic goals

- Productivity and cost savings: produce more and better services with less resources
- E-services are the primary option both in internal and external processes
- City services are easily accessible, no matter what the time and place
- Accelerate the development of proactive and preventative services
- Data-driven decision-making
- Resident can affect how their data is being utilised (MyData principles)

For Whom?

Impact on different stakeholders

- Residents are served proactively and more personalised way, often without filling-up forms. Health problems are prevented by proactively inviting at-risk groups to treatment
- Digital self-services are available 24/7.
- Employees have more time for customers. Operations can be targeted where the need is greatest. Manual tasks are automated.
- Management has real-time data to support decision-making. Predictive analysis applied to weigh different options.
- Businesses and communities are a more seamless part of the city's production of services. Businesses benefit from the open data city is sharing.
- Travellers find the city's services easier, also virtually.

How?

Change programs

- Digital services and shared platforms
- Data strategy
- Implementation of the Information Management Act
- Shared city services
- Digital foundation
- Recovery program
- Agile experiments

Enablers, the conditions for success

Constantly evolving operating model and guiding overall architecture	Common platforms and components and application portfolio rationalization	Appropriate use of open source
Implementing a data strategy: ethical use of data and data interoperability	Solid Digital foundation	Strategic ability - the ability to respond to a changing environment
Competence development	Compliance with regulations	Advocacy and influencing the interpretation of legislation, especially on data privacy issues

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Thank you!

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