

# Visioonikonverents

# Omavalitsus 2035

7. november 2023 | Tallinn



## Ulrika H. Westergren

Umeå ülikooli informaatikaosakonna dotsent,  
juhataja asetäitja ja assistent, õppedirektor

**Omavalitsuste digipööre: digitaaltehnoloogia  
kasutamine ühiskonna hüvanguks**



REGIONAAL- JA  
PÕLLUMAJANDUSMINISTEERIUM



RIIGI TUGITEENUSTE  
KESKUS



Kaasrahanud  
Euroopa Liit



Eesti  
tuleviku heaks

[CORPORE] [KONVERENTSID]

A collection of autumn leaves in various colors (red, orange, yellow) scattered across the top left and top center of the slide.

# **The digital transformation of municipalities**

Using digital technologies for societal benefit

Professor Ulrika H. Westergren, Department of Informatics, Umeå university, Sweden

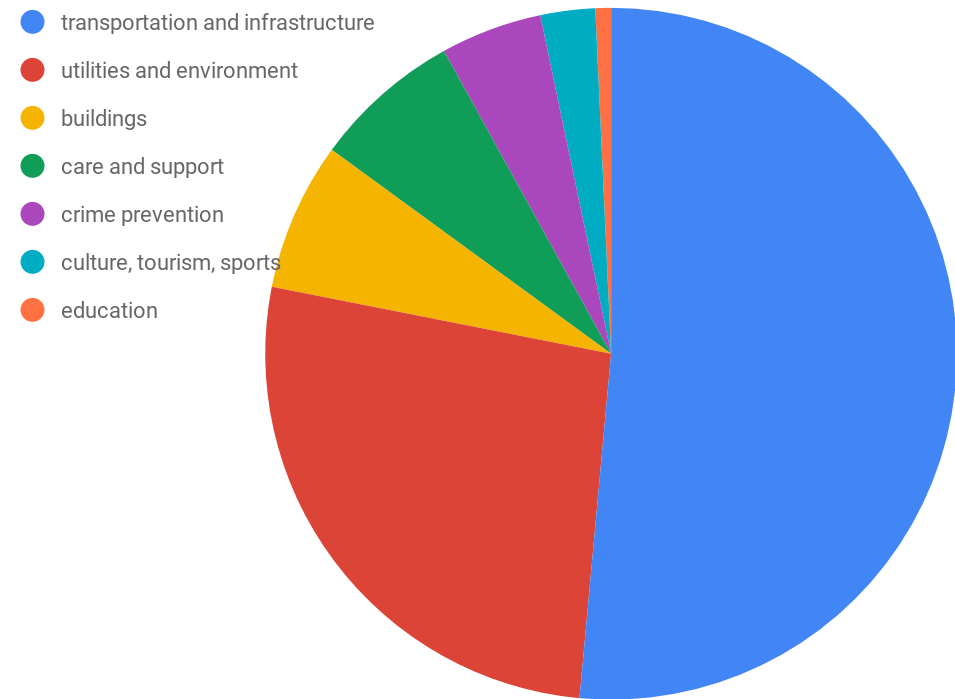
# Everything gets connected to the Internet

- Technology is getting smaller, cheaper, smarter.
- Internet of Things (IoT): collection and analysis of context-aware, real-time data.
- Artificial Intelligence: we use self-learning algorithms to solve problems, see patterns and make decisions. "Support, augment, replace."
- Huge amounts of data are being generated and analyzed



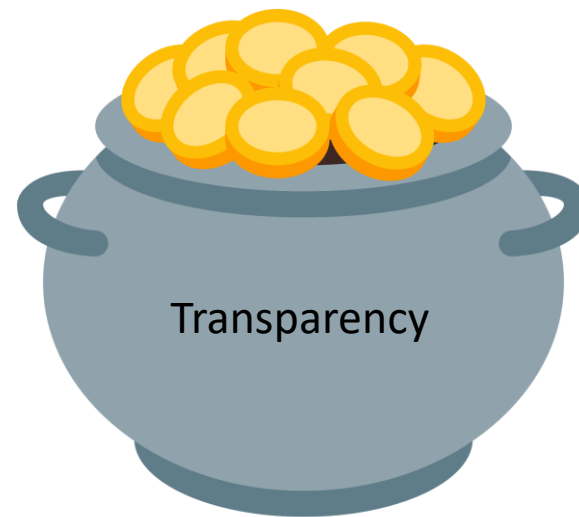
# How do municipalities use IoT?

- Interview study carried out in 2017-2018. Data from 337 municipalities in Sweden, Norway, Finland, Denmark, and Estonia
- Municipal focus on key infrastructural areas such as water supply, telecom, street lighting, and road maintenance.





Data is the new gold



# What is smart about smart societies?

- Sustainable and innovative use of new technology
- Better use of resources and streamlined processes
- Increased transparency and citizen engagement
- Better collaboration and need-based value creation



# Public sector digital transformation

- In practice, realization of economic value usually takes precedence over other types of value creation.
- This can hamper transformation efforts and lead to a narrow focus on efficiency and incremental innovation.



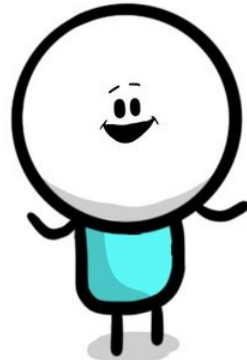
# Becoming data-driven

Organizations striving to become data-driven need to develop five core elements:

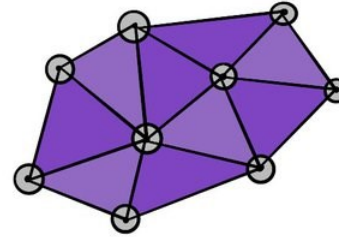
- *Data sourcing and sensemaking*: use of data that is relevant, contextualized and harmonized.
- *Data capabilities*: using organizational capabilities to purposefully manage data.
- *Data-driven culture*: fostering a belief and value system that embraces data-driven practices.
- *Data-driven decision making*: making rational decisions based on data.
- *Data-driven value creation*: actions with the ambition to create value through the use of data.



WE ARE A  
DATA-DRIVEN  
COMPANY



WE COLLECT  
MILLIONS OF DATA  
POINT EVERY DAY...



workchronicles.com

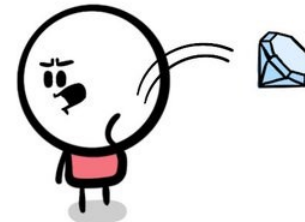
...CLEAN IT, ANALYSE IT,  
TURN IT INTO ACTIONABLE  
INSIGHTS...



...AND THEN IMPLEMENT  
WHATEVER IS THE MOOD  
OF THE DAY.



Can you make the  
logo bigger?



**Work Chronicles is a webcomic about... work**  
Find us on Instagram, Twitter, LinkedIn, Reddit.



**Work Chronicles**  
workchronicles.com

Increasing the amount of information does not necessarily lead to the anticipated change in behaviors

# To observe or be observed



- IoT can make what is invisible become visible - which can lead to increased trust and transparency.
- Increased visibility can also lead to increased control, which in turn can lead to attempts to circumvent the system.
- IoT means that you can be a user of, and a data point in, the system at the same time.

# What can be done?

- **Education:** Increase the understanding of technological capabilities, show what technology can do.
- **Leadership:** Work on establishing a culture that embraces a data-driven way of working.



- **Nudging:** Elicit a desired behavior by giving individuals a push in a certain direction.
  - Raise awareness
  - Gamification
  - Show trends over time

# Amara's Law

"We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run."

-Roy Amara



# **Thank you!**

Contact: [ulrika.westergren@umu.se](mailto:ulrika.westergren@umu.se)