The inclusive, sustainable and connected society

IoT implementation in a Swedish municipality

VINNOVA
Sweden's Innovation Agency

Brunklaus, Birgit (RISE)

Chiew, Yoon Lin (RISE)

Lundström, Anders (Umeå Uni)

Nilsson-Lindén, Hanna (RISE)

Saarikko, Ted (Umeå Uni)

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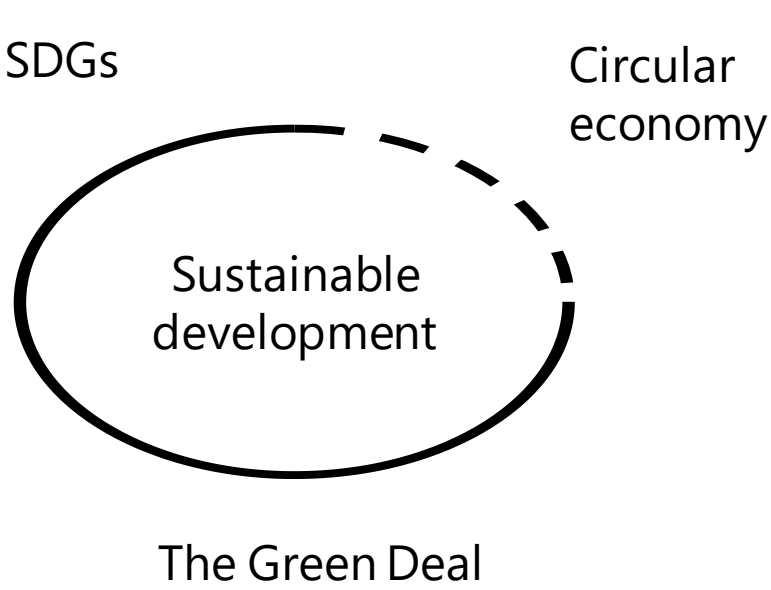
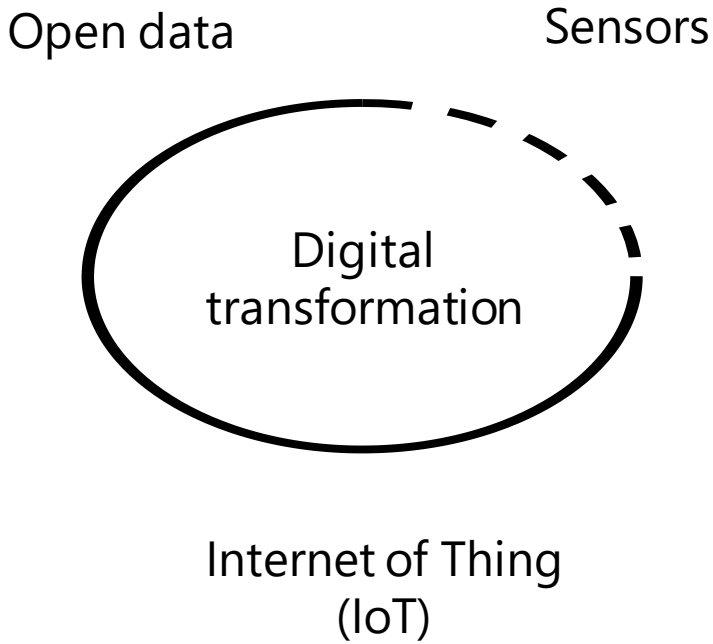

SDGs
Circular economy
Sustainable development
The Green Deal


Open data
Sensors
Digital transformation
Internet of Thing (IoT)

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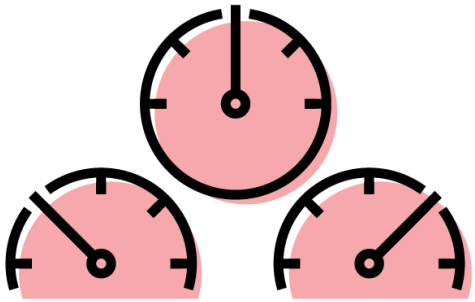

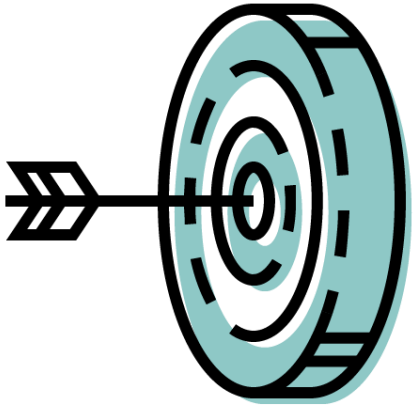

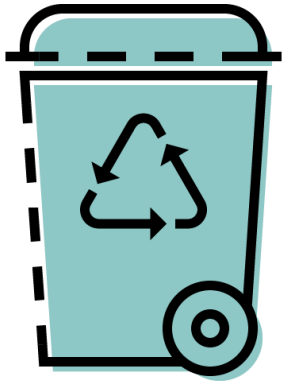

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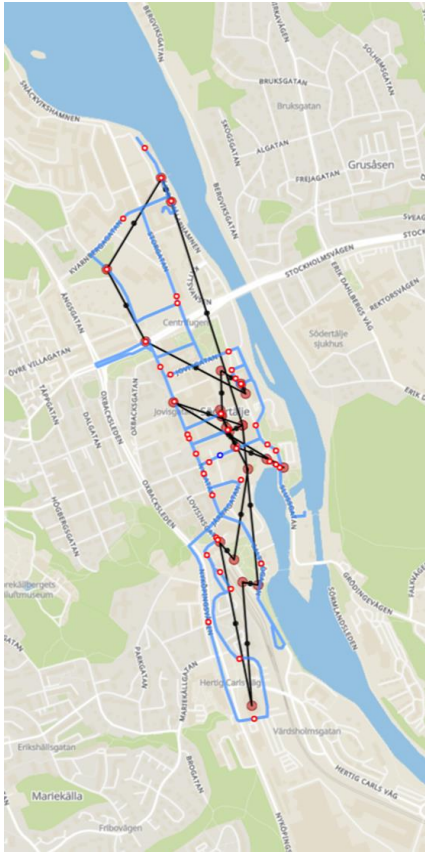
Background: Connected trashcans for route optimization in Södetälje

- Developed proof-of-concept project
  - Sensor on 160 trash cans which measures degree of filling
  - Enable route optimization and location planning for increased operational efficiency
- Other application areas ongoing (e.g. parking lots)



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Project: The inclusive, sustainable and connected society

- Further investigate how machine generated and open data (based on sensors) can create insights that can be used for
  - **internal efficiency** (e.g. higher resource and cost efficiency related to resource and waste management), or
  - using open data sources as support for **citizen dialog and inclusiveness** regarding sustainability goals

Södertälje kommun · Telge Återvinning · Umeå Universitet · RI.SE Research Institutes of Sweden · LCM 2021

Methods

Interview study, document analysis

Internal workshop

LCA of proof of concept

Hackathons

Life cycle assessment

Workshops, interviews, surveys

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1(3) Prel. results: environmental impact of waste collection

- Waste collection can contribute approx.12t CO2eq per year, mainly due to the trash bags
- IoT system solution has insignificant impacts in comparison
- Installation of sensors on trash cans can reduce consumption of the trash bags and worker's time spent on waste collection

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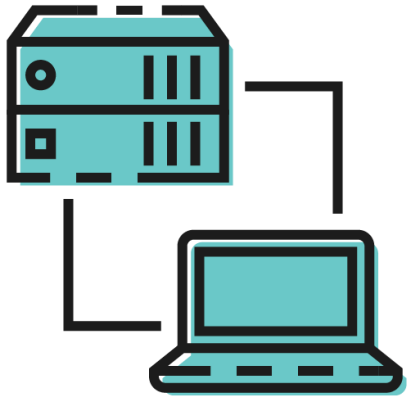
2(3) Prel. result related to current state of digitalization in Södertälje



- Heterogeneity in perspectives, uses, needs, and capabilities related to digital technology
- Perennial phenomenon: IT seen as new problem to address rather than new means to address old problems
- Isolated beneficial digital tools/systems, but lack of strategic cohesion and oversight

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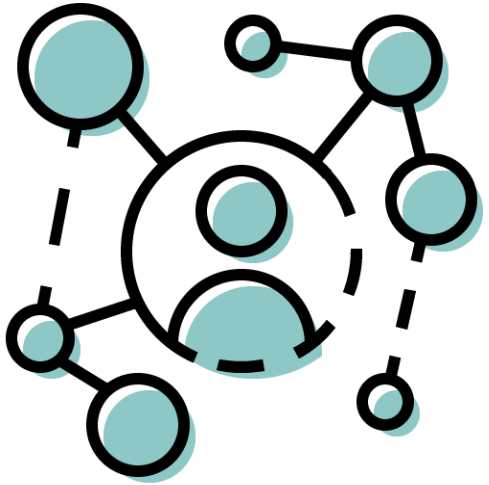
3(3) Prel. result related to current state of citizen dialogue

- Current forms of dialogue incl. e.g. surveys and interviews, information campaigns, dialogue related to new building plans
    - Upcoming hackathons and citizen app
- Much awareness of the need of communication, and the need to include many interest groups in society
- Activities based on operational needs - could be more coordinated and strategic
- Need of more collaboration and shared practices between organizations voiced by respondents



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An inclusive, sustainable *and* connected society?

- Machine generated open data provides many possibilities to share data with citizens
- Sound IoT solutions, sustainability focus AND a citizen dialogue exists – A challenge (i.e. oppertunity) to bring them all together

➢ *Next project step include concept development (e.g. sensors related to reuse and recycling)*

- ➢ *combined with an environmental assessment, and*
- ➢ *citizen dialog on the concept development*

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Birgit Brunklaus

birgit.brunklaus@ri.se
RISE

Yoon Lin Lindén

yoonlin.chiew@ri.se
RISE

Hanna Lindén

hanna.linden@ri.se
RISE

Ted Saarikko

ted.saarikko@umu.se
Umeå University

Anders Lundström

anders.lundstrom@umu.se
Umeå University