Revisiting a Vocabulary of Transition Design

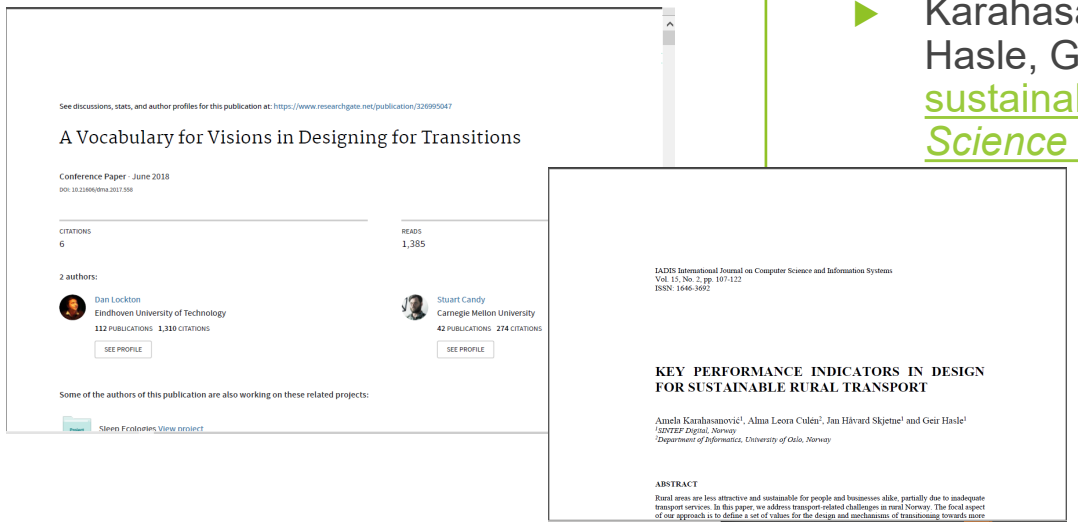
IN3010, 6th of March 2024

Amela Karahasanović, SINTEF and UiO

Objectives

- Extent further our vocabulary, our understanding and our toolbox
- Learn from practice

Based on



- Irwin, T. (2018) The Emerging Transition Design Approach, in Storni, C., Leahy, K., McMahon, M., Lloyd, P. and Bohemia, E. (eds.), *Design as a catalyst for change - DRS International Conference 2018*, 25-28 June, Limerick, Ireland. https://doi.org/10.21606/drs.2018.210
- Tilgjengeliggjøring av hundekjøring for svaksynte IN3010 RAPPORT, Celine Varmann Aamodt, Nora Knoph Berg-Eriksen, Marte Lunde Kvam, Emma Løken Draleke, Vår 2023
- **Lockton, Dan, and Stuart Candy. "Vocabulary for Visions in Designing for Transitions." In *Design Research Society Conference 2018*, 2018. https://doi.org/10.21606/dma.2018.558.**
- Karahasanovic, Amela; Culén, Alma Leora; Skjetne, Jan Håvard & Hasle, Geir (2020). Key Performance Indicators in design for sustainable rural transport. *IADIS International Journal on Computer Science and Information System*. ISSN 1646-3692. *15*(2), s 107-

The Transition Framework

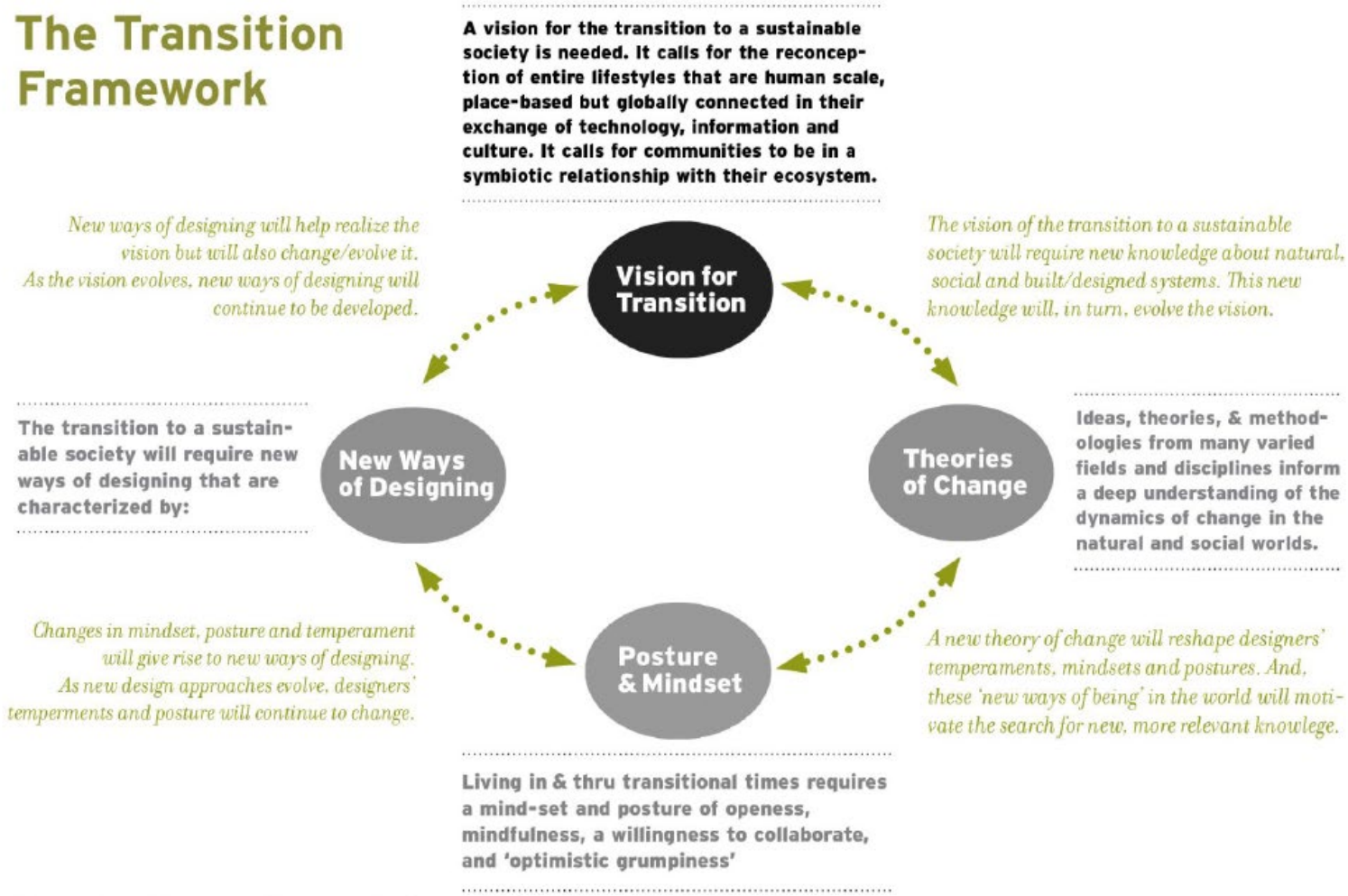


Diagram by: Professor Terry Irwin, Dr. Gideon Kossoff and Dr. Cameron Tonkinwise

How does a designer work?

- Two approaches to the design process:
  - The aesthetic approach – intuition, personal experience, personal values
  - The guideline approach – a design process can be described rationally, process guided

Stoltermann, E., 1994. Guidelines or aesthetics: design learning strategies. Design Studies, Vol 15 No 4, pp. 448-458

Where is transition design?

[1 minute]

Phases of Transition Design

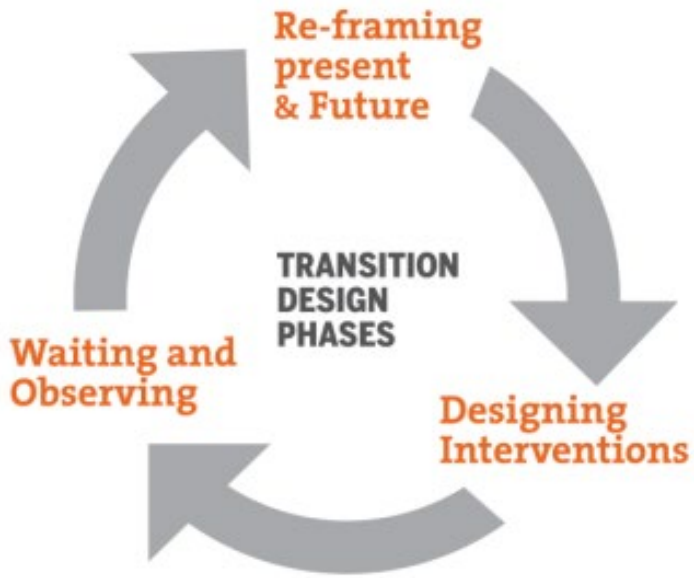


Figure 2: The emerging Transition Design approach suggests three phases comprised of reframing the problem and its context in the present and future, designing interventions, then observing how the system responds. These broad phases accommodate a variety of practices and processes tailored to specific problems and contexts. Source: T. Irwin.

If Michelangelo was a transition designer

Creazione di Adamo, Michelangelo

- Reframing the present and future
- Designing interventions
- Waiting and observing

- Methods, techniques

[5 minutes]

From present to future and backward

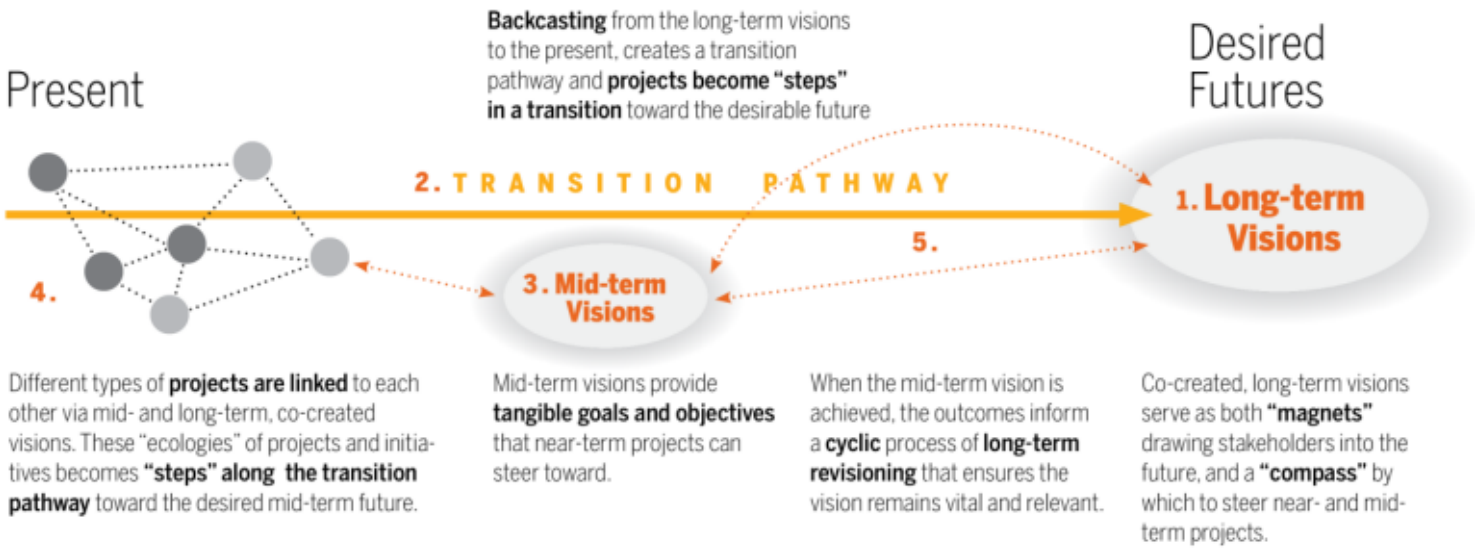


Figure 10: Backcasting from a co-created future vision creates a "transition pathway" along which new and existing projects can be connected and situated as "steps" in a long transition toward the desired future. Source: T. Irwin, G. Kossoff, C.Tonkinwise.

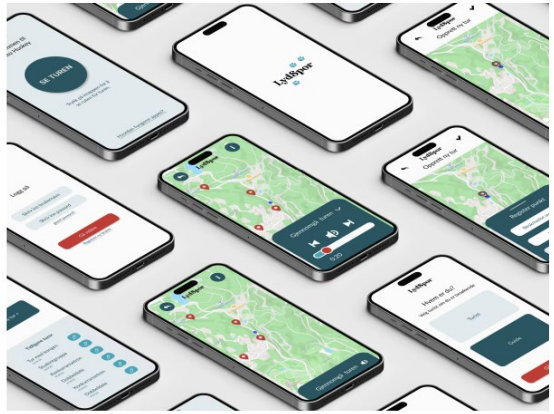
ACCESSTOUR 2023

2060 Being visually impaired is not a limitation any more

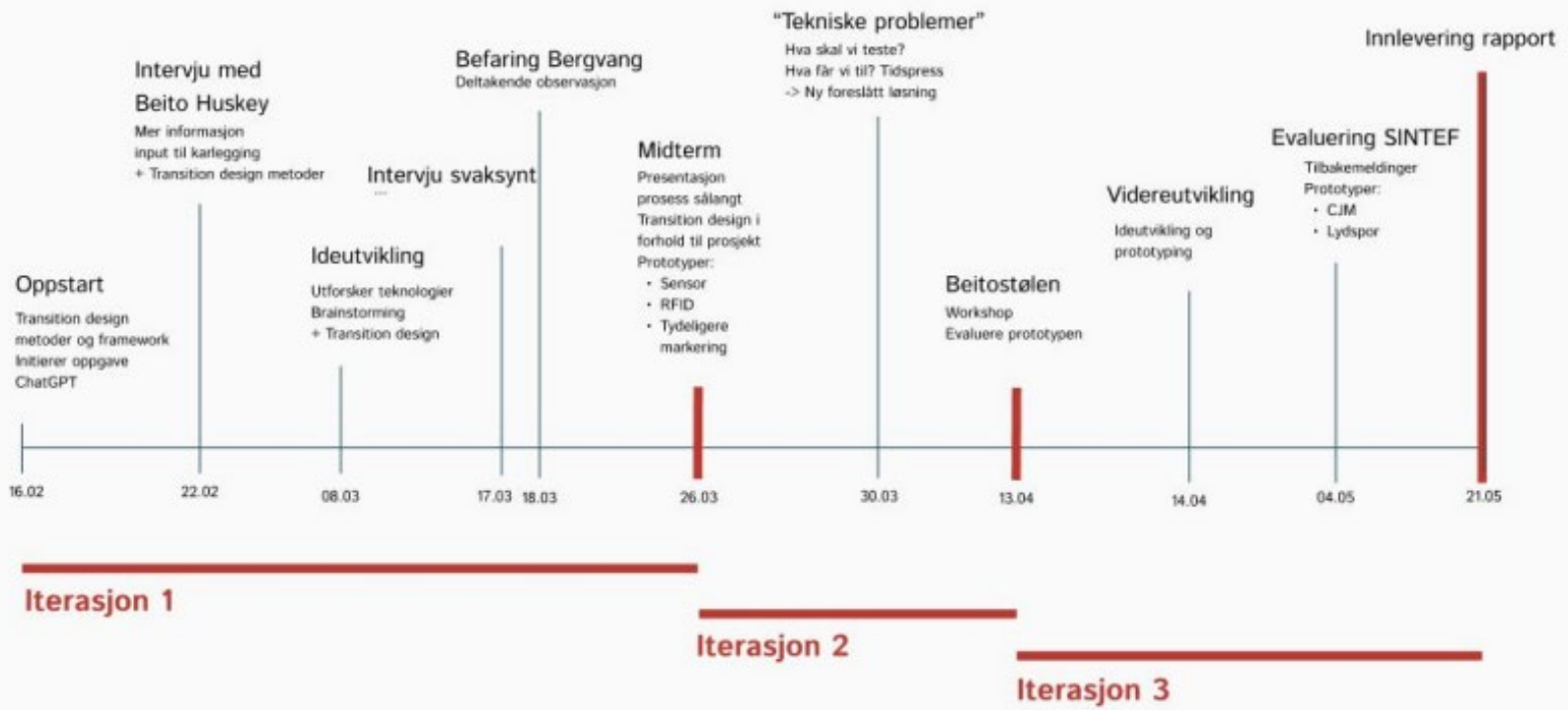
2050 Every activity is made accessible for visually impaired individuals

2040 Every tourist activity is made accessible for visually impaired individuals

2023 Visually impaired individuals at BeitoHusky can drive their own dog sled



Timeline


Oppstart
Transition design metoder og framework
Initierer oppgave
ChatGPT
16.02
Intervju med Beito Huskey
Mer informasjon input til karlegging
+ Transition design metoder
22.02
Ideutvikling
Utforsker teknologier
Brainstorming
+ Transition design
08.03
Intervju svaksynt
17.03
Befaring Bergvang
Deltakende observasjon
18.03
Midterm
Presentasjon prosess sålangt
Transition design i forhold til prosjekt
Prototyper:
• Sensor
• RFID
• Tydeligere markering
26.03
"Tekniske problemer"
Hva skal vi teste?
Hva får vi til? Tidspress
-> Ny foreslått løsning
30.03
Beitostølen
Workshop
Evaluere prototypen
13.04
Videreutvikling
Ideutvikling og prototyping
14.04
Evaluering SINTEF
Tilbakemeldinger
Prototyper:
• CJM
• Lydspor
04.05
Innlevering rapport
21.05
Iterasjon 1
Iterasjon 2
Iterasjon 3

Vocabulary for Visions in Designing for Transitions

The Transition Framework

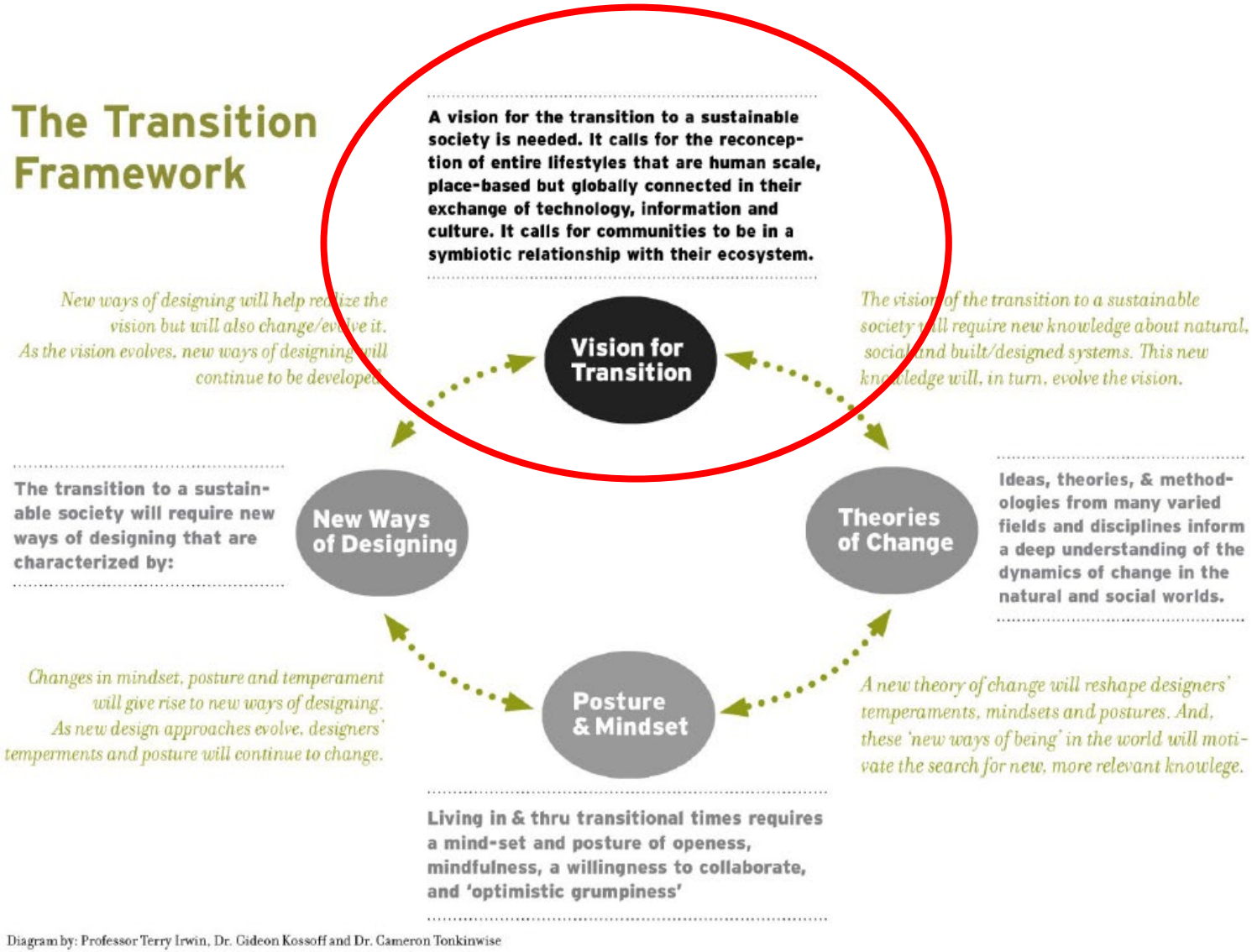


Diagram by: Professor Terry Irwin, Dr. Gideon Kossoff and Dr. Cameron Tonkinwise

What is the Lockton's paper about

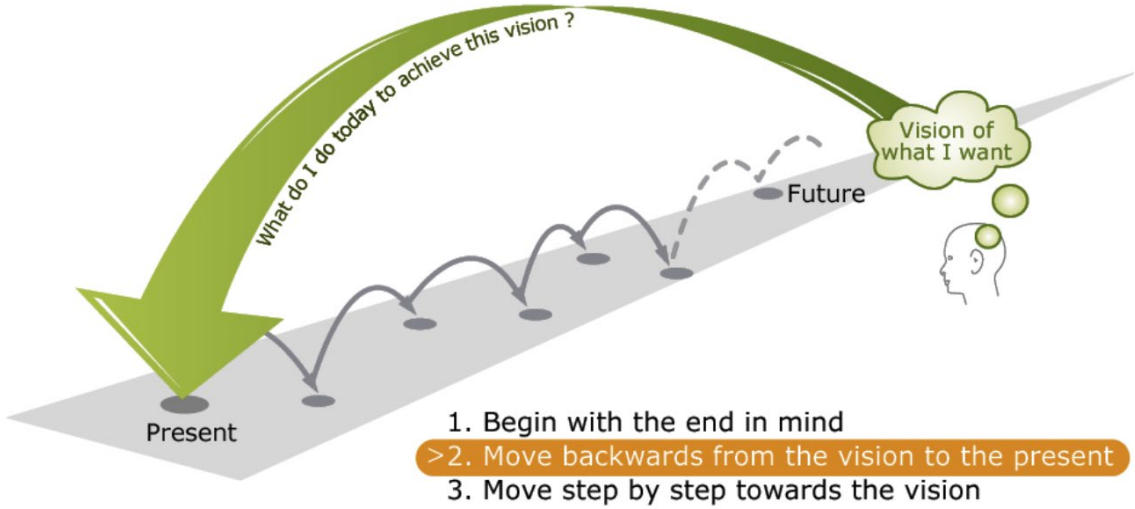
Finding ways of **working practically** which embody and **advance the ideas** inherent into the **transition design paradigm**, while making **use** of the many **techniques and methods** developed in **other fields**

https://kisk.phil.muni.cz/transitiondesign/en/outcomes/conference/recordings

Ways of seeing

- Methodology: Lenses themselves
- Imaginaries
- Backcasting
- Dark matter *
- Circularity *
- Experiential futures
- New metaphors

Your turn – Backcasting



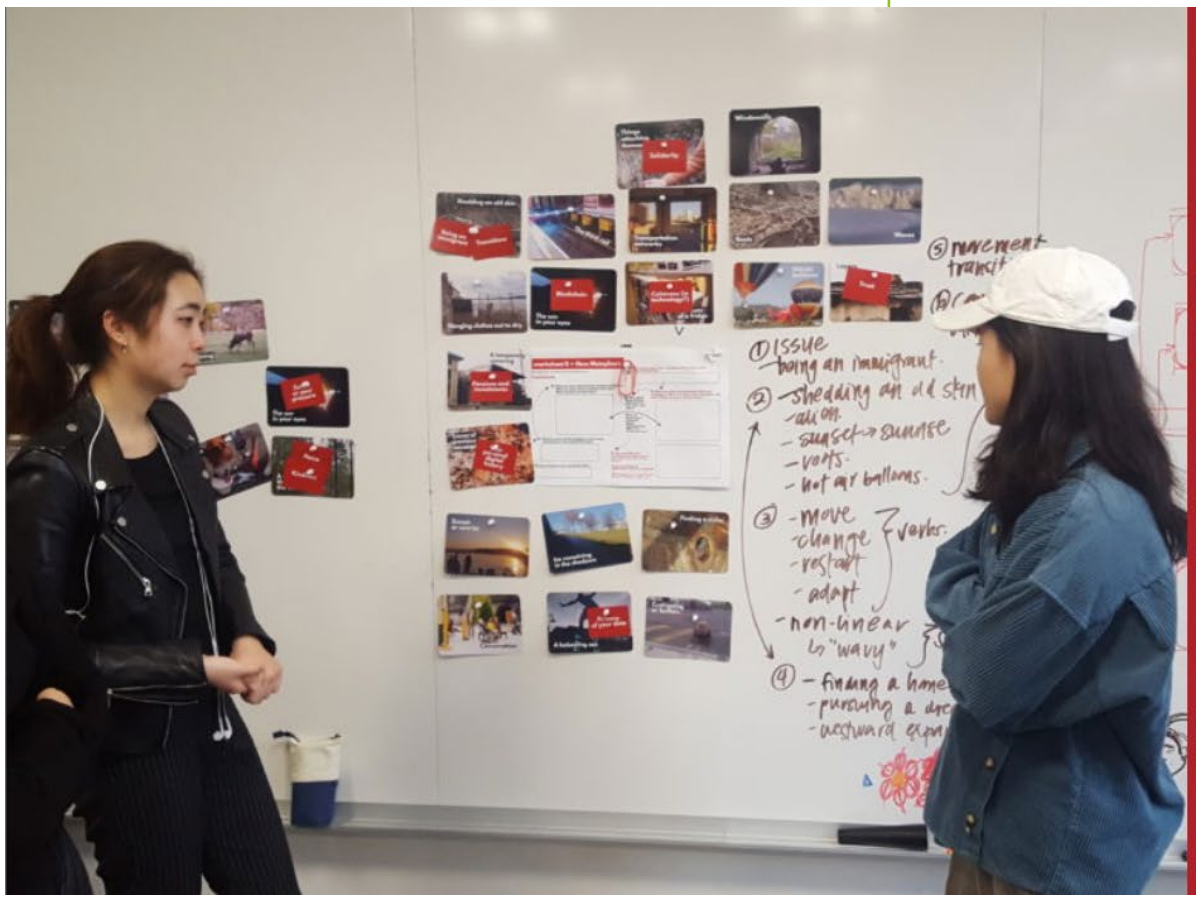
- What is backcasting?
- How it works?
- Have you tried it? If not - could it be useful and how?
- Why is it included?

Your turn – Experiential futures

Visitors to a large interior design and architecture show interact with NaturePod, a hypothetical future product demonstrated and launched at the show as if it were commercially available. Installation by Situation Lab, photo by Connie Tsang.

- What is it?
- How it works?
- Why is it included?
- Propose an example and explain it

New Metaphors



Could creating new metaphors help us understand the world in new ways and imagine different futures?

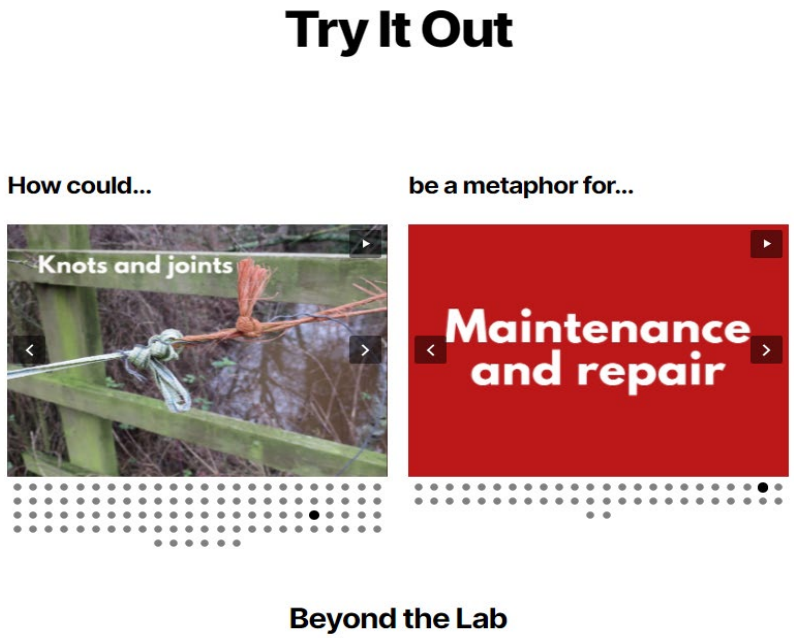
New Metaphors

- Metaphors central to human reasoning
- Mapping features of an existing or familiar situation into a new one is enabling us to grasp it better
- Actively generating new metaphors bringing new ways of conceptualizing the world and encouraging new practices
- Semi-random process of bisociation
- [we are limited by our language]

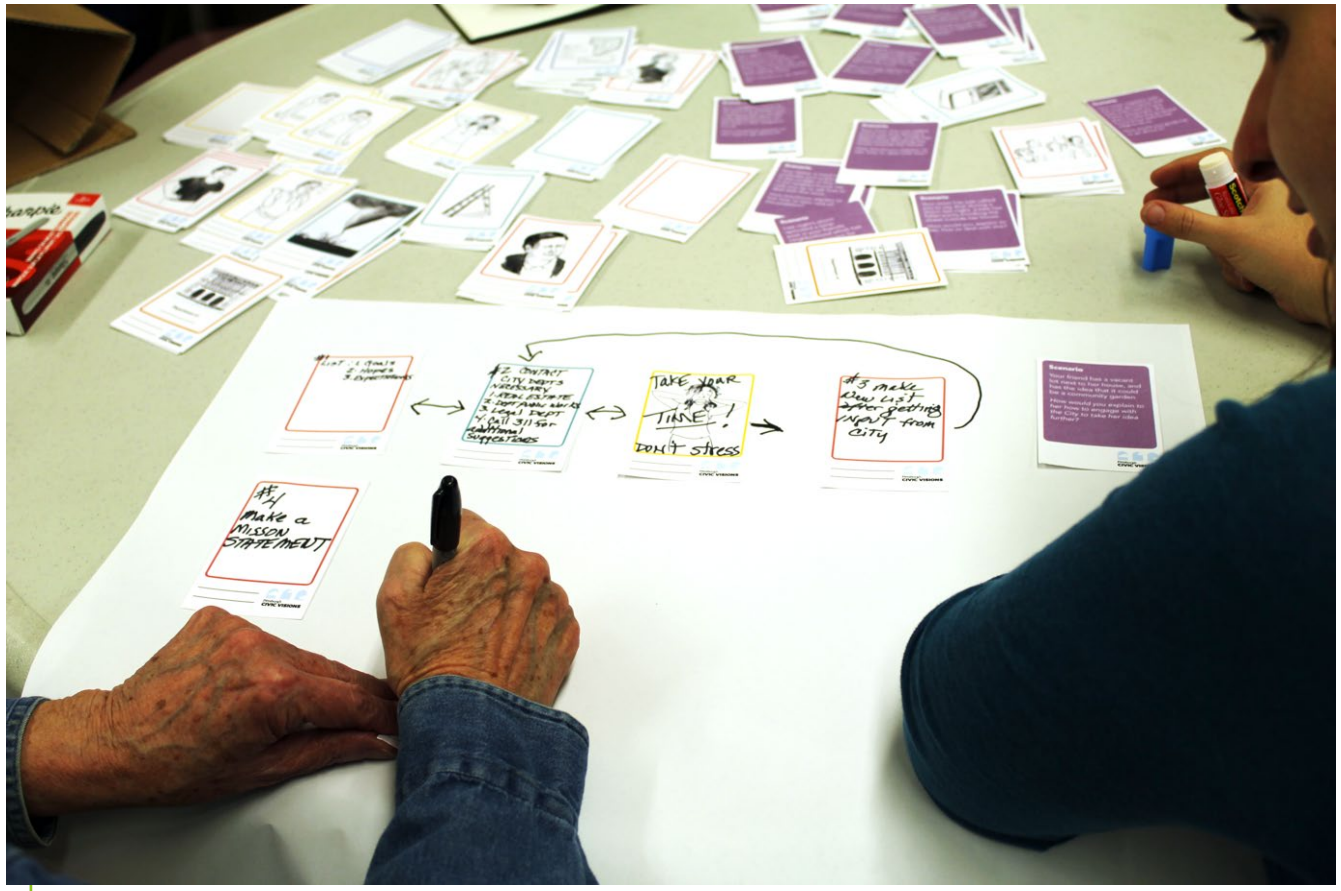
- http://imaginari.es/new-metaphors/

New Metaphors

- Select a pair and explain
- http://imaginari.es/new-metaphors/



Dark Matter



Members of the public in Pittsburgh, PA, create maps of their perceptions of the 'dark matter' of local government, as part of the Imaginaries Lab's Civic Visions project (Ashlesha Dhotey, Theora Kvitka, Nehal Vora, Matt Prindible, Silvia Mata-Marin and Dan Lockton). Photo by Ashlesha Dhotey.

Dark matter

- There is more involved in change at scale and over time than redesign of products and services
- Products and services are embedded in contexts, practices, cultures, traditions, laws, standards, prejudices
- Transition designers should be more attentive to infrastructures
- "Some of the most radical changes are written not in the language of law and diplomacy but in … infrastructural technologies"

Dark matter

- "the dark matter of strategic design … organisational culture, policy environments, market mechanisms, legislation, finance models and other incentives, governance structures, tradition and habits, local culture and national identity, the habitats, situations and events that decisions are produced within" (Hill, 2012)
- Make the dark matter not only visible, but legible to those who are affected by it, but for whom it may be unreadable
- Credit cards and drivers' licenses – experience of emigrants in the USA
- Technology and organisation should be considered when designing sociotechnical systems

Discussion

- Why is this included?
- What is the dark matter in your project?
- Give an example of the dark matter?

Circularity

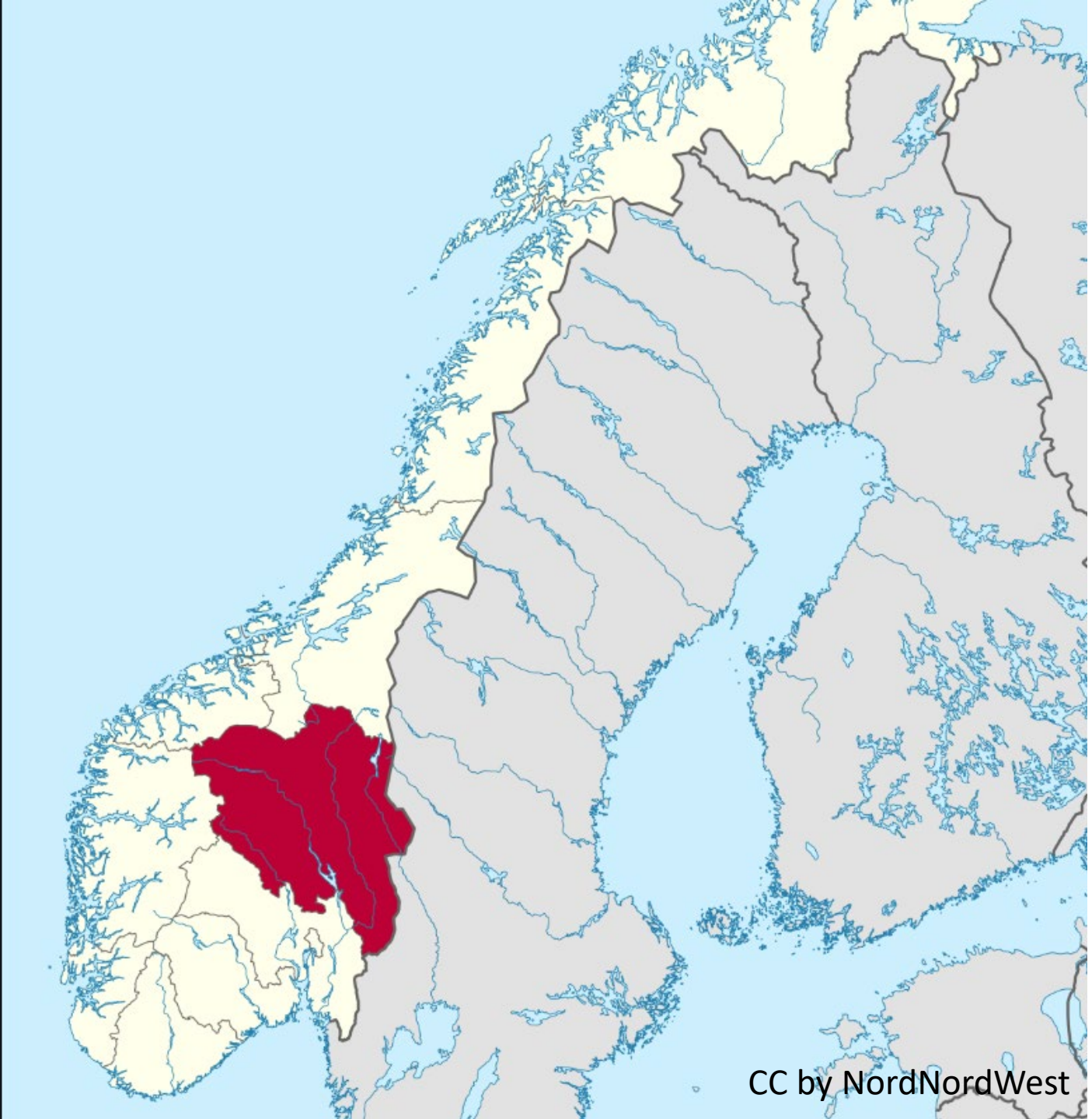
- Self-fulfilling prophecy
- Visions of desirable futures inspire people to work towards making these future real
- Can also be self-defeating
- A thermostat controlling the room temperature but itself being controlled by the room temperature
- We adapt to models over the time

- When designing transitions – reflect on circularity – to what extent are the variables that we believe they are shaping actually shaping us

Discussion

- Why is this included? What does it add?
- Discuss circularity in you project

TRANSITION DESIGN IN PRACTICE - SUSTAINABLE TRANSPORT IN RURAL NORWAY



Innlandet County
Area 52 072.44 km^2
Population 371 385 (4th quarter 2019)
Population density 7.1 inhabitants per km^2

Wikipedia.org

Smart transport in rural areas

The Research Council of Norway

- Develop a MaaS service specifically tailored for sparsely populated rural areas
    - A service offering passengers the transport that suits their needs by combining transport services from different providers through unique platform
- Create a holistic system for transport planning that dynamically coordinates the transport of people and goods to make the most of transport resources
- Transport of patients, blood samples, food, elderly, school children, public transport in county

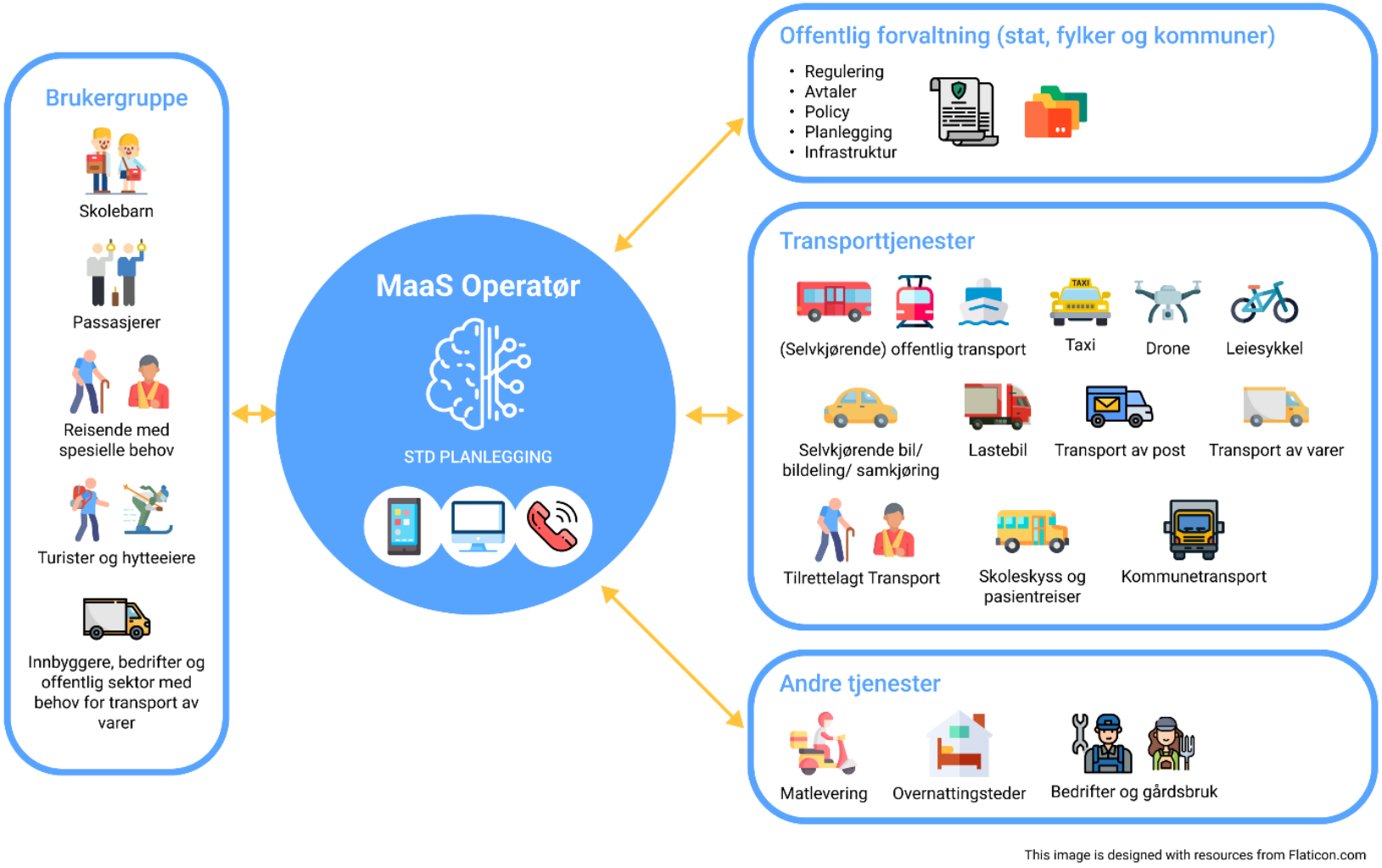
Folldal kommune

Sykehuset Innlandet

Innlandstrafikk

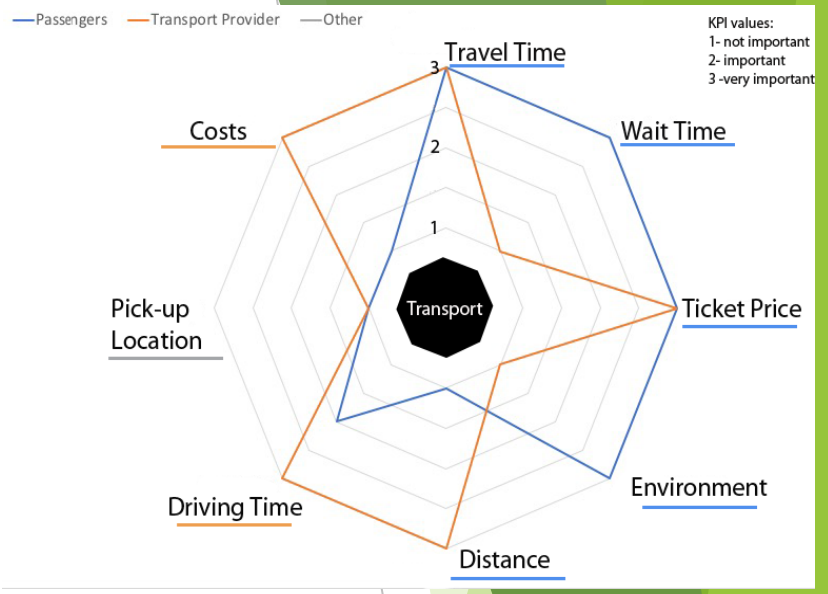
ENTUR

STD prosjektet



- Brukerinnsikt
- STD applikasjoner for reisende
- STD planlegging
  - Operativ
  - Strategisk
- STD tjenester
- STD metoder for bærekraftig design
- STD optimerings teknologi

Transition design in practice



- Why transition design
  - Approach to lead transitions towards more sustainable futures
  - Calls for more holistic approach
  - Takes a long-term perspective
  - Rethinks solution beyond financial and commercial interests; specially relevant in rural areas
- What we missed

How to get from high level sustainable goals to design prototypes?

We proposed using KPIs in all phases and used it in Reframing the present and future and Designing intervention

Waiting and observing – in the follow-up pilot projects (higher TRL)

Transition design tilnærming og metoder

- Bruk av KPI-er i alle design faser
  - Nyttig for å holde fokus på bærekraft
  - Nyttig for kartlegging av behov hos forskjellige aktører
  - Nyttig funksjonalitet i verktøyet

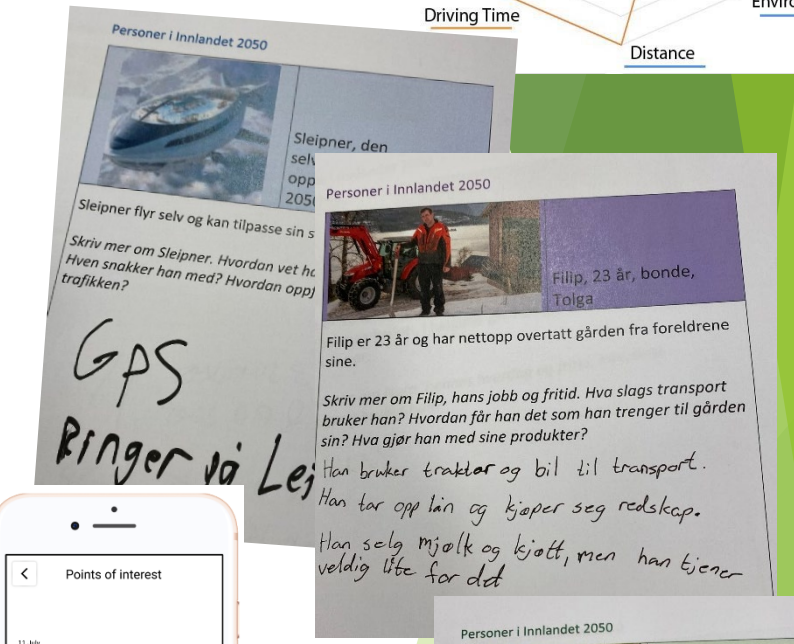
*Karahasanović, A., A. L. Culén, J. H. Skjetne and G. Hasle (2020). "Key Performance Indicators in Design for Sustainable Rural Transport." IADIS International Journal on Computer Science and Information Systems **15**(2): 107-122.*

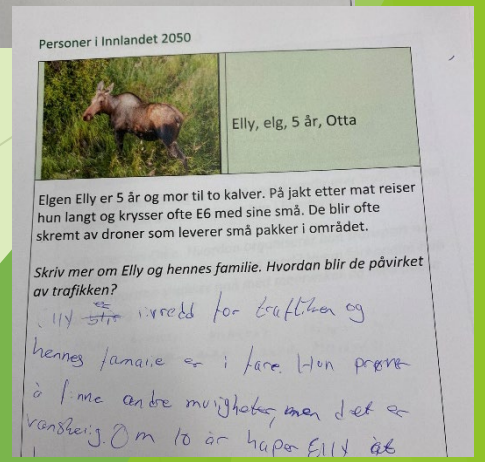
- Metoder for å forestille seg bærekraftig framtiden
  - Utfordringer med online gjennomføring
  - Utfordringer med å vise noe som enda ikke finnes

Österberg, L.E., Karahasanovic, A., Culén, A.L, Sustainable Tourism and Mobility in Rural Areas of Norway, ENTRENOVA22 (accepted)

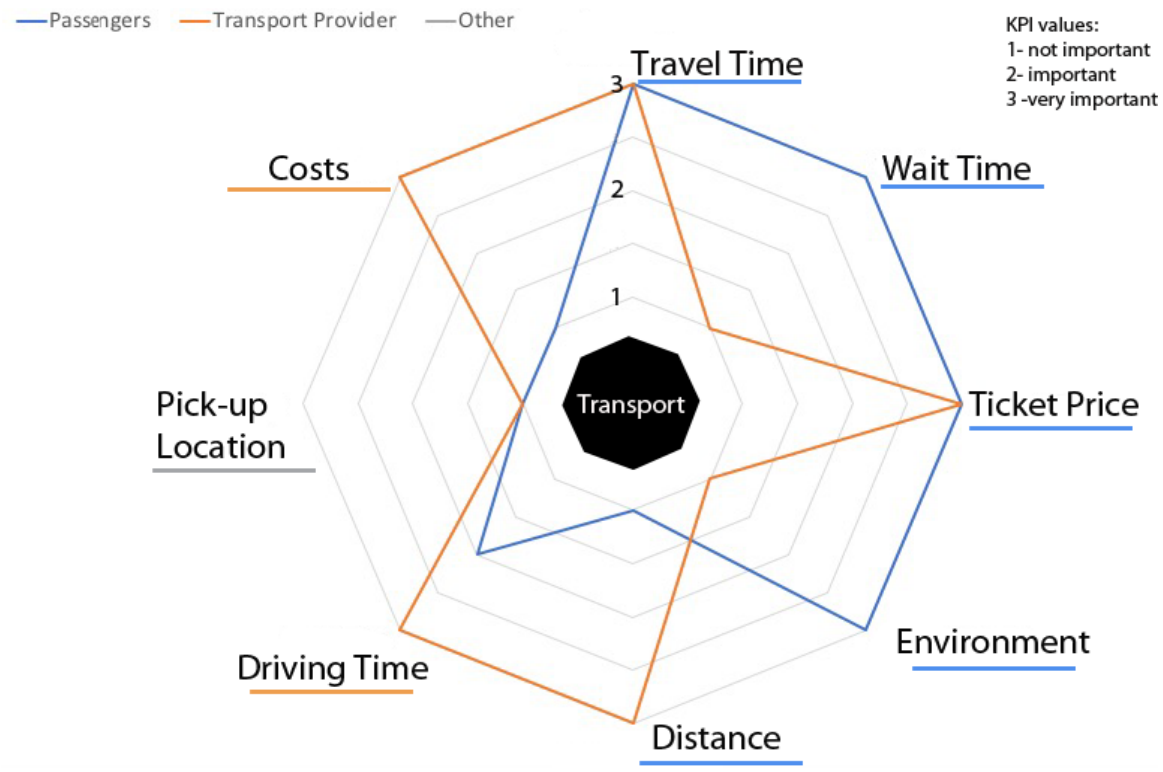
- Metoder for design av AI løsninger
- AI personas, Miljø personas
- Guidelines for menneske - optimering interaksjon

Karahasanovic, A. et al. (2021). User Involvement in the Design of ML-Infused Systems, CHI Greece 2021; Karahasanovic, A., Følstad, A. & Schittekat, P. (2021). Putting a Face on Algorithms: Personas for Modeling Artificial Intelligence. In Second International Conference, AI-HCI 2021, HCII 2021, Springer. s. 229-240





KPIs



Initial list of KPIs – during the project idea development

- Workshops and meetings - problem owner, researchers
- UN and national goals, input from experts

KPIs in the projects

- 2 workshops with 8 experts

KPIs IN USE

Phase 1 - Reframing present and future

- Map the current problems, create a map of stakeholder concerns, and the relation between these and the visions for transition
- Workshop with project partners (6 domain experts)
- The most important KPIs were:
  - passenger and freight volume
  - monetary and environmental costs
  - utilization of transport resources
  - travel time and waiting time

How were KPIs useful?

Defining goals

- Utilization of resources -> local entrepreneurs with vans and minibuses
- Passenger and freight volume -> low volumes
- G1 – to work actively on extending the list of the stakeholders

"We transport people from the place they don't want to start their travel to the place they don't want to end it at a time which is not convenient for them. People simply want to go from A to B when they want. And there is already a perfect solution. It is called a private car. The question is how to compete with it. How do we motivate people to use public transport?"

- Travel/waiting time -> motivation
- G2 – to engage citizens in more environmental behavior

How were KPIs useful?

Envisioning future

- Structuring discussions about expectations
- Defining measurable goals
- Showing expected benefits

Example: Two persons use public transportation from Folldal to Alvdal/Tynset (two small Norwegian municipalities) instead of private cars 250 days a year

- Reduction in driving distance 200 km per day
- CO_2 emissions reduction 6 kg
- Fuel consumption reduction 3 000 L
- Income from public transportation tickets €5000

How were KPIs useful?

Environmental KPIs help getting a broader picture of transport planning

"It is also about how we plan municipality development, where to place the kindergarten in relation to residential areas."

"We would like to be involved much earlier in the development of new residential areas and roads. When they build an area without a space for the bus to turn, it is too late."

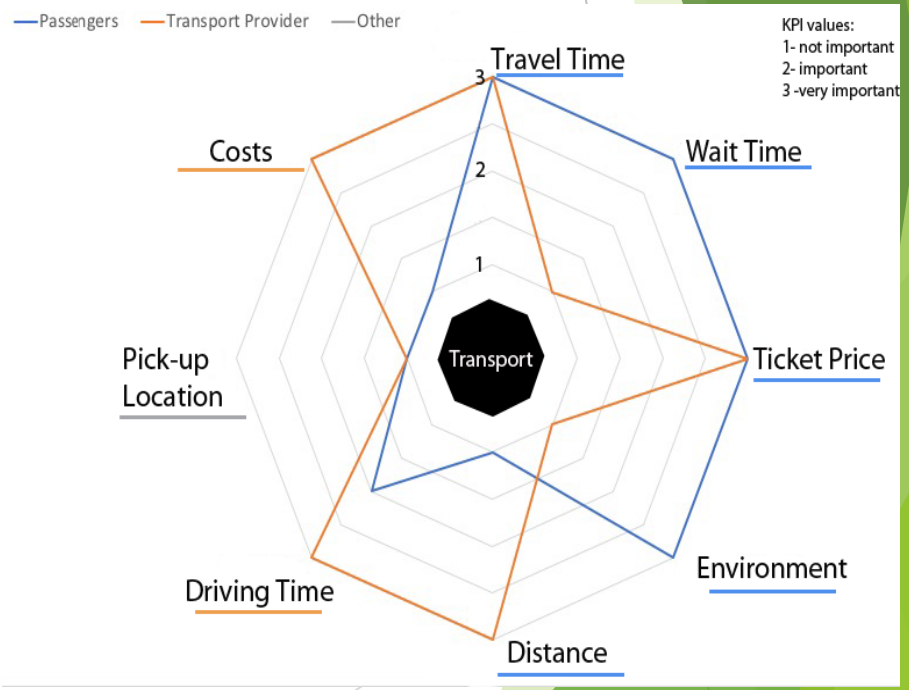
"It does not help to plan being in front of school A at 8:15 a.m. and in front of school B at 8:30 a.m. if school B starts at 8 a.m. We have to negotiate with them or drive one bus to school A and another to school B, which is bad for the environment."

Phase 2 – Designing interventions

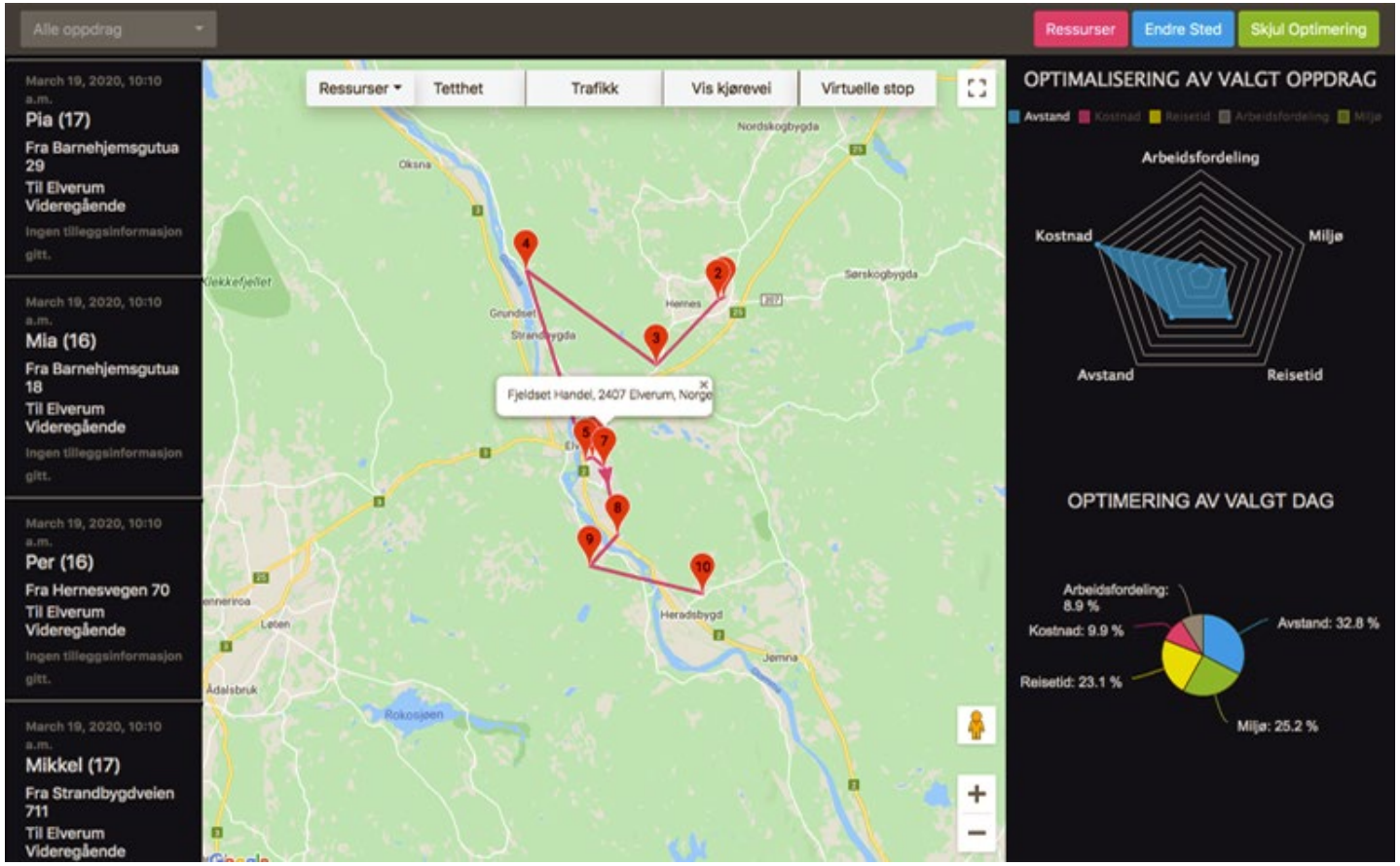
Understanding how the problems and concerns are amplified or mitigated at different system levels and seen from different time perspectives.

User insight – interviews with 13 participants

- Transport planning experts, decision makers
- Radar chart, reflection on KPIs, transport of their dreams
- Two perspectives: passengers and their work position



Planning tool for MaaS operators



The goal is to engage citizens in more environmental behavior generated some design ides

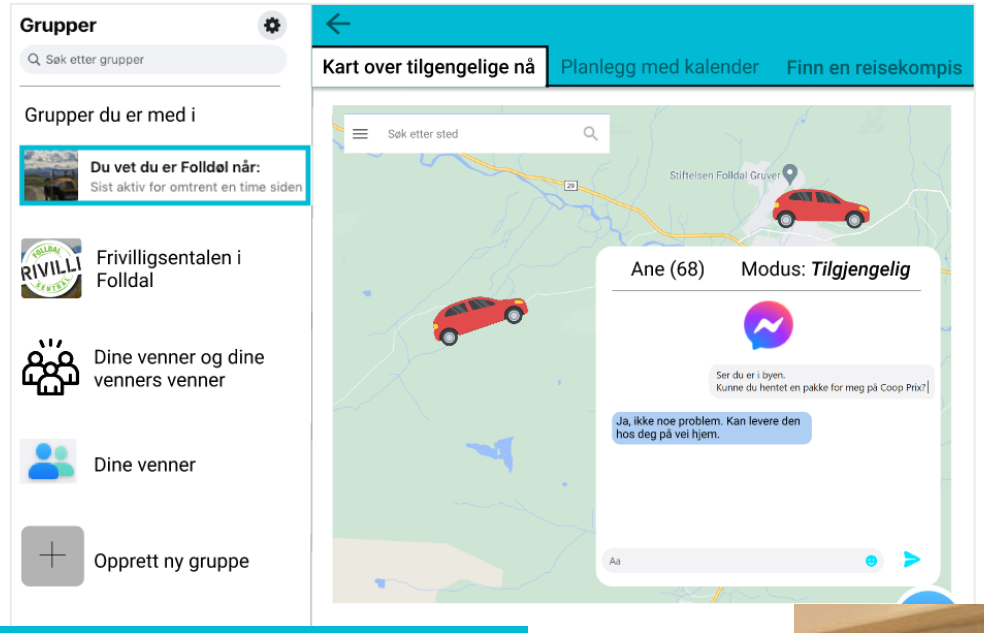
- Presenting impact of a proposed solution on KPIs
- KPIs as an input to the tool

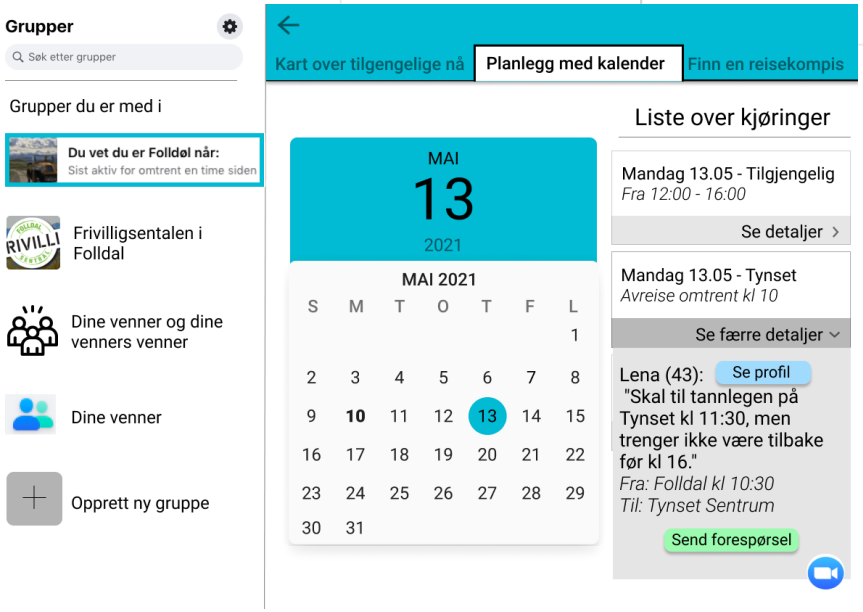
"So intuitive tool for us. This is 100 steps forward"

"We really have to cut CO2 emission by 50% until 2030 and it is … like tomorrow. Let's introduce free public transport"

Transition design tilnærming og metoder forts.

- En klynge av prosjekter med fokus på bærekraftig mobilitet og bærekraftig turisme
- 5 MSc og 2 BSc oppgaver (12 studenter ved UiO og NTNU)
- 6 researchers from two research groups



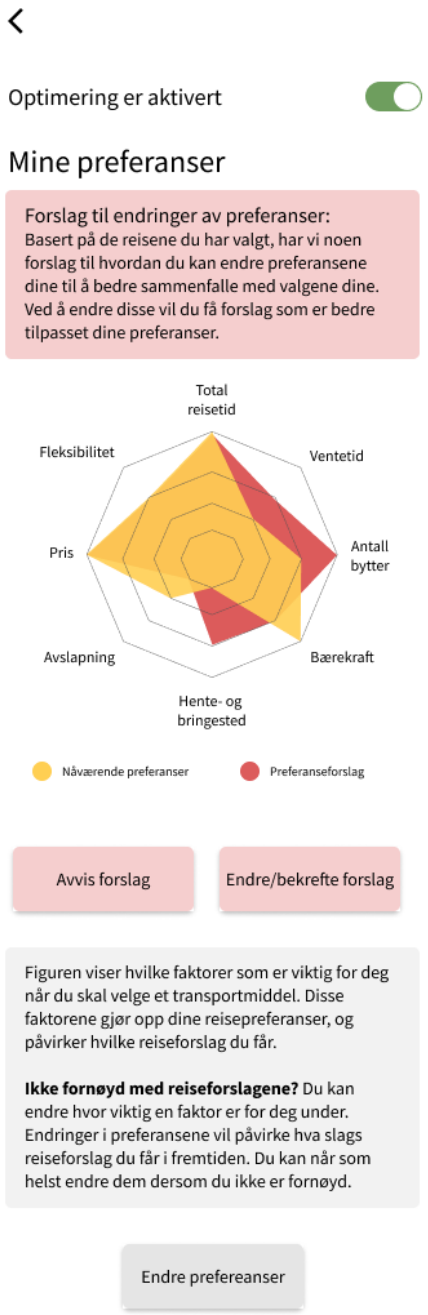


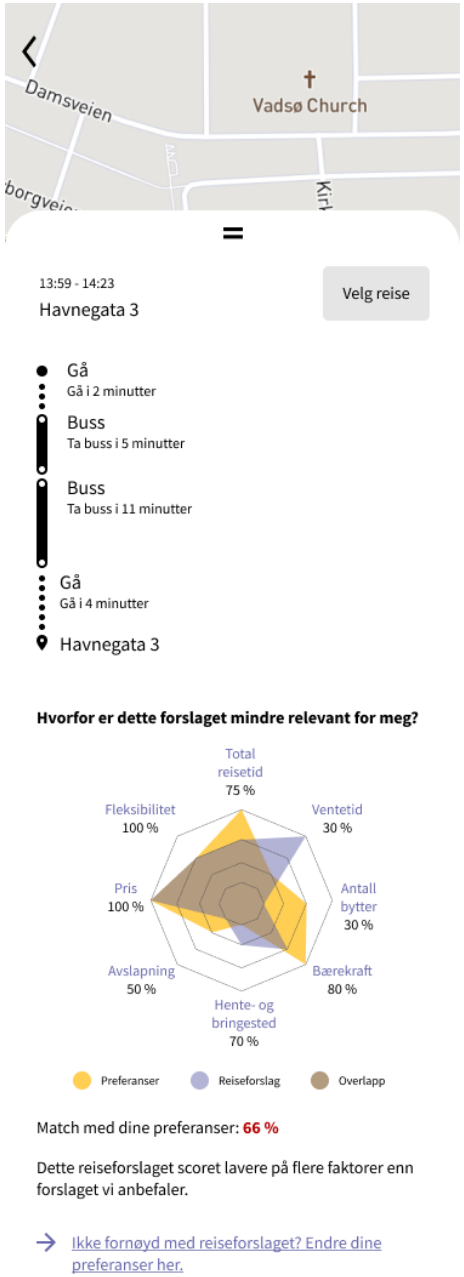
«this small keystroke can make that they [elderly] become engaged and come out of the house»

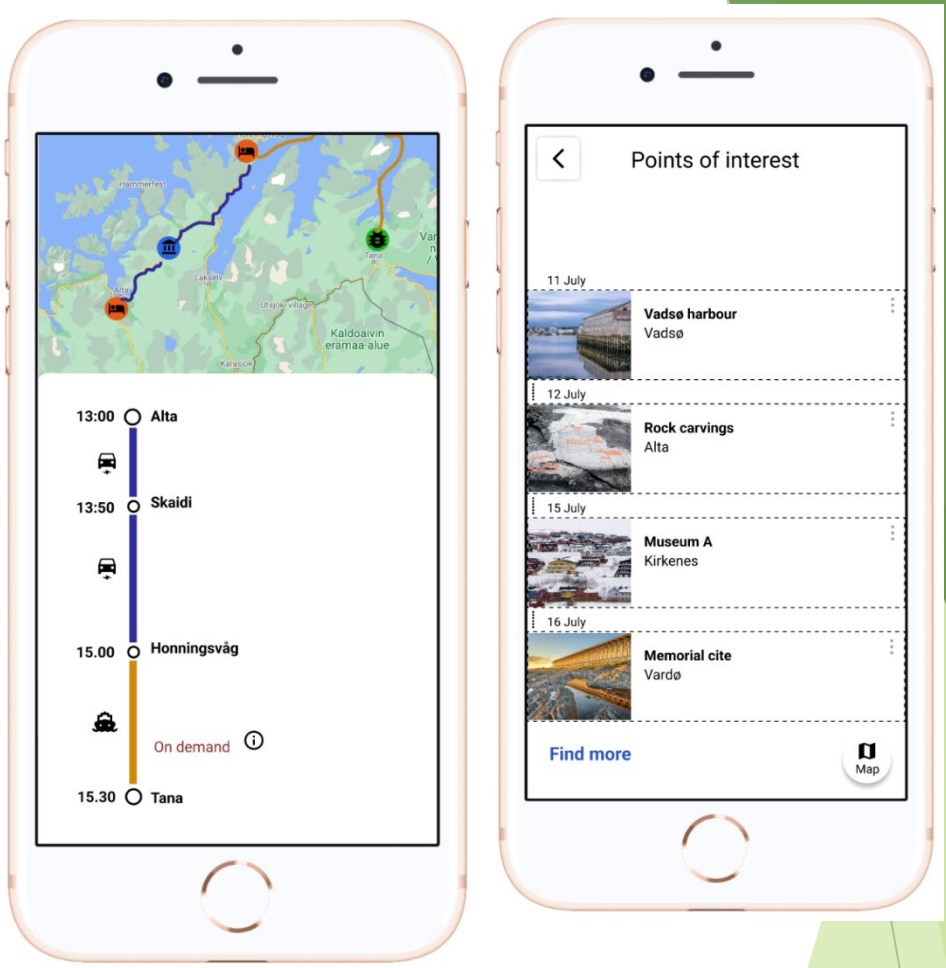
[are there any problems here]

"No, I just see the opportunities"

Prillard, O. A. (2021). The Design and Creation of an ICT Transportation Management Service to Increase Mobility for Older Adult in Rural Areas. MSc Thesis in Engineering and ICT. Trondheim, NTNU.







Lund, S. H. and M. L. Johansson (2022). User-centred design of optimisation based systems for rural mobility, MSc thesis, IFI, UiO

Österberg, L. E. (2022). The role of prototypes in design of MaaS services for rural areas, MSc thesis, IFI, UiO

Impact

18% reduction of CO2 footprint
59% reduction of cost
10 minutes longer travel time

LEDER

SMARTERE: *Et nytt prosjekt der Folldal er med skal teste smartere transportløsninger i distriktene.*
ILLUSTRASJONSFOTO: BJØRN-FRODE LØVLUND

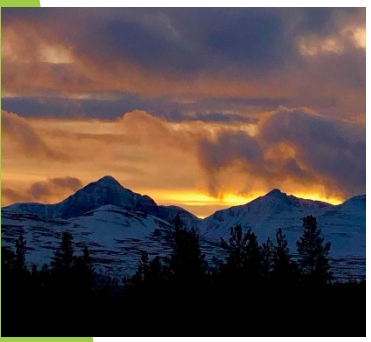
Smartere transport i distriktene

Det er en ikke rett fram å lage et velfungerende kollektivtilbud i distriktene. Bussen skal helst gå når vi skal ut av døra. Den bør ikke bruke for lang tid til dit vi skal, og så gjelder de samme kriteriene når vi skal hjem. Utfordringene og målene med kollektivtrafikken er mange. Ikke bare skal tilbudet passe oss best mulig, men det skal gjøre oss som samfunn mindre avhengig av bilen og sørge for at forurensingen går ned. Bompengedebatten som raste før valget synliggjorde godt at man ikke bare kan endre vanene til innbyggerne med et knips.

Slår dette til, er det bare å heise flag get.

Da snakker vi helst om byene. Verre blir det allerede når man beveger seg utenfor ring 3 i Oslo. I distriktene er det ikke økonomi i å ha et rikholdig busstilbud som skal passe den enkelte. Nå skal imidlertid Hedmark Trafikk og samarbeidspartnerne Entur, Sykehuset Innlandet, Folldal kommune og Sintef starte et prosjekt for å se på hvordan man kan utnytte eksisterende transport i utkantstrøk på en bedre måte. Prosjektet har et budsjett på ti millioner kroner, der målet er å lage et felles system hvor både transport- og varetransport inngår.

Systemet skal forbedre transporttjenestene i distrikter med hensyn til effektivitet, økonomi, kortere reiser- og ventetid, kundens opplevelse og miljø, sies det. Slår dette til, er det bare å heise flagget. Så enkelt er det nok ikke, men dersom det kan gjøre hverdagen bedre for pendlere og det lokale næringslivet, er vi på rett veg. Et godt, miljøvennlig transporttilbud på bygda må på plass i arbeidet med å skape en mer miljøvennlig framtid.

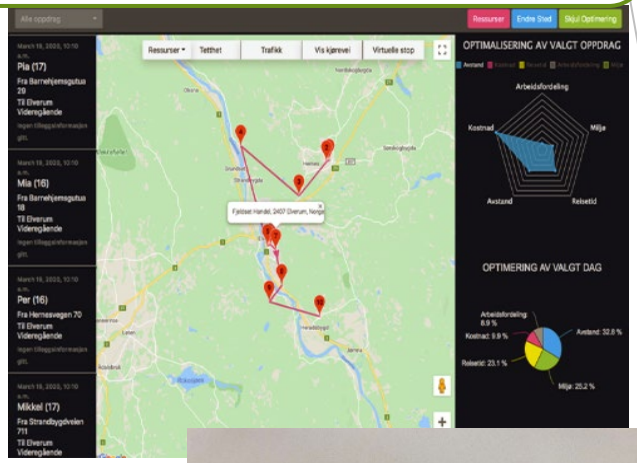


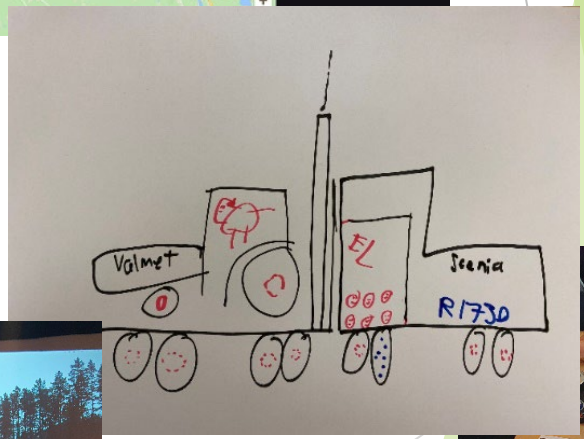
Du er her: Forside / – Folldal kan bli foregangskommune – Satser på smart transport /

– Folldal kan bli foregangskommune – Satser på smart transport

Folldal er med i et unik prosjekt for å gjøre distriktene smartere på transport. Aktørene hadde i dag møte.

Dette sier Kenneth Wik fra EnTur, en app som skal gjøre det enklere å reise. Bakgrunnen for uttalelsen er et unikt prosjekt hvor Folldal kommune er utpekt som samarbeidspartner sammen med Hedmark





LESSONS LEARNED

What have we learned

- Transition design (focus of envisioning future) initiated radically new ideas and engagement among citizens and politicians; it enabled collective and participatory imagination, awareness of close the future is
  - free public transport in municipality to achieve 50% reduction of CO2 footprint in the municipality
- Difficult to explain that transitions take time
  - citizens were expecting driving busses and drones at the end of the project while we were developing the algorithms; good support from politicians was important
- You cannot solve everything in one project
- You have to actively use SDGs as a tool for strategic planning in your organization
- Building a good network, partners, stakeholders and ecology of projects over longer time

What have we learned cont.

- Transition design (monitoring phase) helps moving from green-washing to real transitions and changing the attitudes
- Use of KPIs was useful for establishing the common ground and helped keeping the focus on sustainability
- Media might help you

What's next

- New EU and national projects already started
- Further development of the concepts, tools and methods

Takk for i dag!