



konkretisering i design

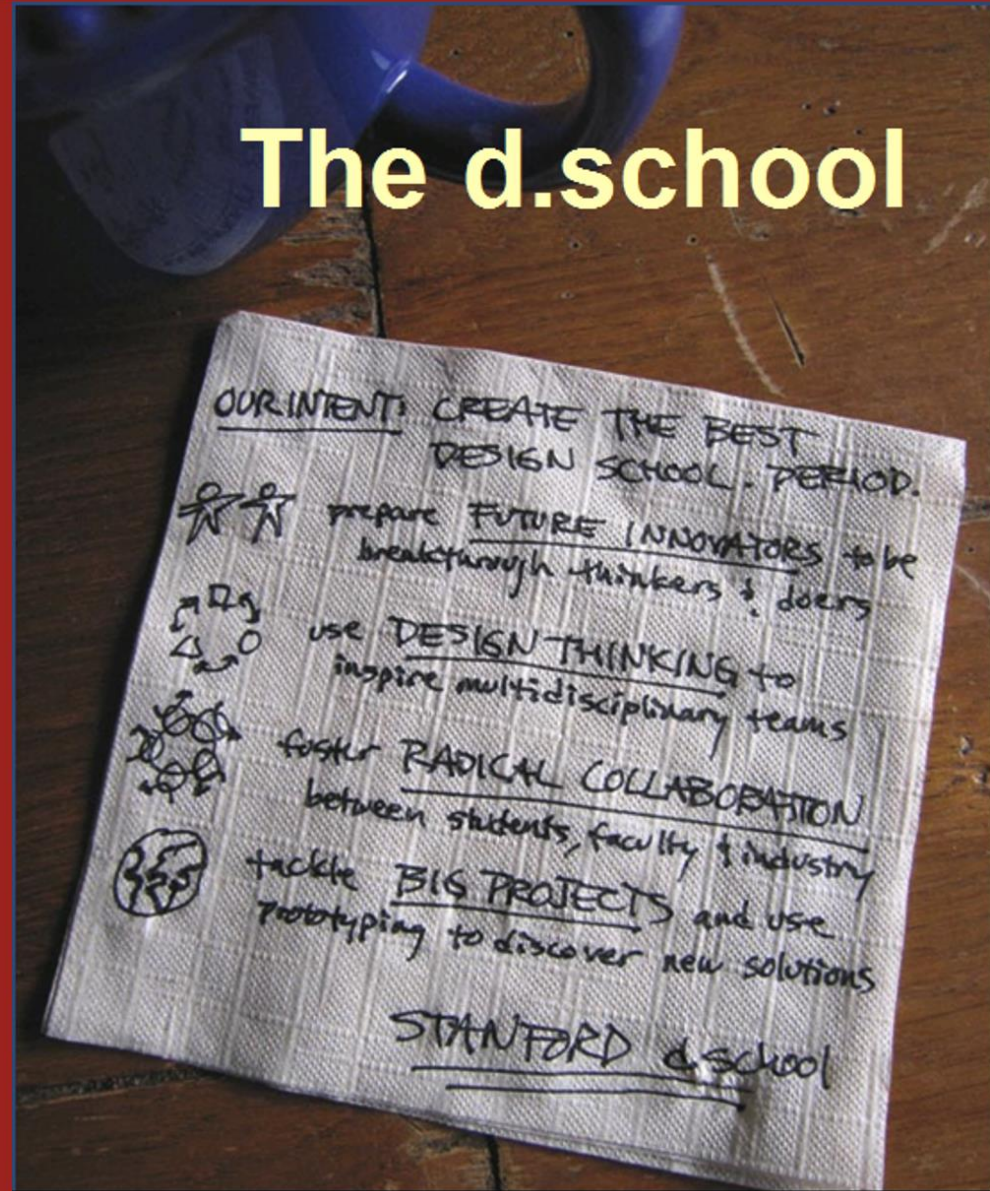
kap. 7 Designideer, skisser og prototyper
in1060 Bruksorientert design



konkretisering

er helt essensielt i design

The d.school



hvordan vi jobber med å konkretisere ideer

Kapittel 7

Designideer, skisser og prototyper

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mål med kapitlet:

- diskutere hvordan designere kan jobbe med ideer
- beskrive metoder og teknikker for å konkretisere ideer
- forklare hvilken rolle prototyping kan ha i DMB
- beskrive, planlegge og gjennomføre prototyping med brukere

hvordan vi jobber med å konkretisere ideer

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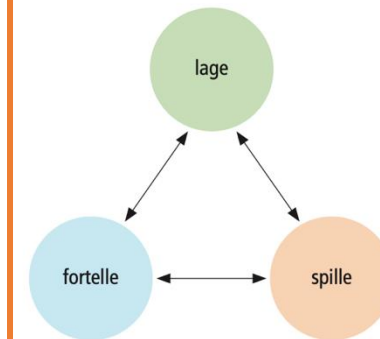
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- diskutere hvordan designere kan jobbe med ideer
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hvordan utvide idérommet

- hvordan får vi flere ideer?
- hvordan jobber vi med ideene?
 - systematisk skifte perspektiv
 - systematisk bruke metaforer



a i DMB
otyping med

- utnytte kunnskap og erfaringer i gruppa
- skaffe nye kunnskaper / erfaringer i gruppa
- involvere andre ekspertiser (f.eks. brukere)

hvordan vi jobber med å konkretisere ideer

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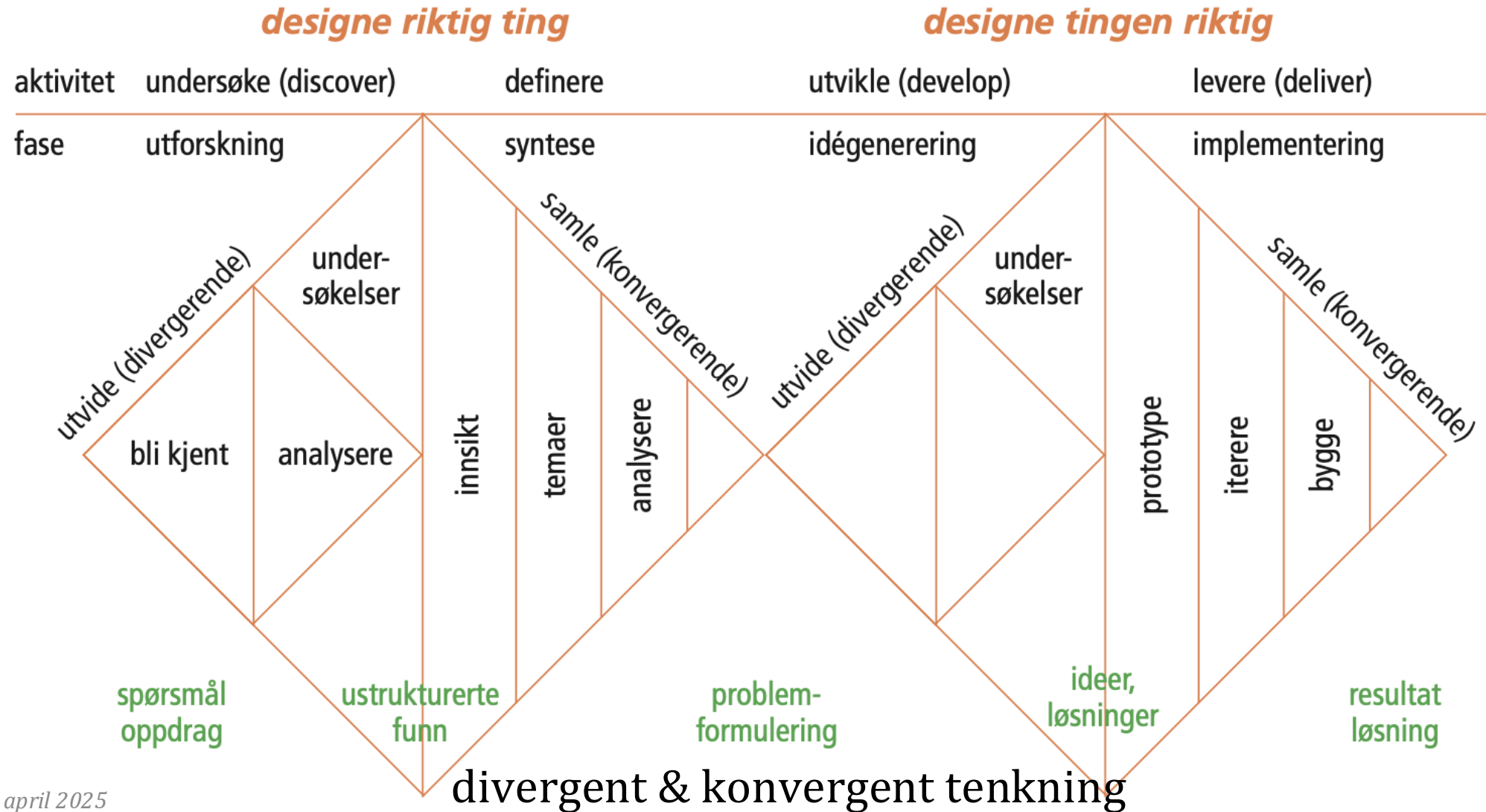
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konkretisering & materialisering

- å presisere ideen
- å diskutere om og hvordan den er mulig å lage
 - see – move – see
 - konsept & form-konsept, visjon & målbilde

idégenerering foregår i hele designprosessen



figur 2.8 i læreboka

British Design Council: double diamond

å få flere designideer

Seks tenkehatter

23 språk

Artikkel Diskusjon

Les Rediger Rediger kilde Vis historikk Verktøy

Fra Wikipedia, den frie encyklopedi

Seks tenkehatter, originalt navn *Six Thinking Hats*, er en tenkemetode utviklet av **Edward de Bono** og ble beskrevet i en bok med samme navn av de Bono. Boken ble utgitt første gang i **1985** og kom ut på norsk i **2006**.

Edward de Bono klassifiserer **menneskelige** erkjennelser og tenkemåter i ulike typer, tilnærminger og orienteringer og finner at de fleste mennesker bare utnytter en eller to slike tilnærminger. Han mener at mennesker utvikler vaner i tenkearbeidet og dermed faller ned på denne begrensede bruk av mulige tenkesett. *Seks tenkehatter* ble til ved at de Bono identifiserte de ulike tilnærmingene og beskrev hvordan systematisk bruk av tilnærmingene kunne tillæres. Han mener at møter og gruppesamarbeid kan effektiviseres ved å være bevisst på å bruke tilnærmingene.

Hvit hatt representerer informasjon, statistikk og fakta, ingen tolking eller meninger. Objektivt.

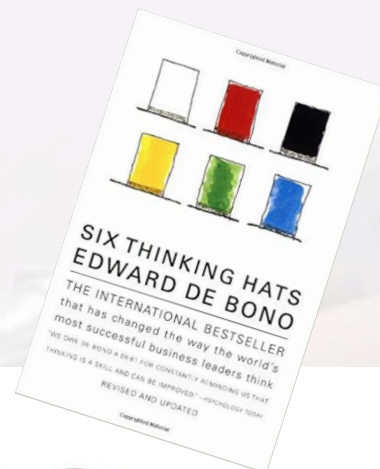
Rød hatt representerer intuisjon og følelser som ikke skal rettferdiggjøres eller forklares. Subjektivt.

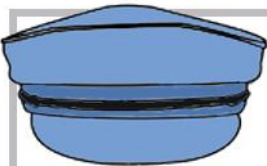
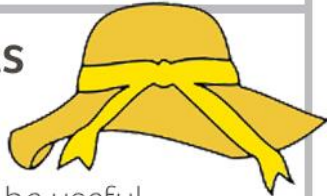
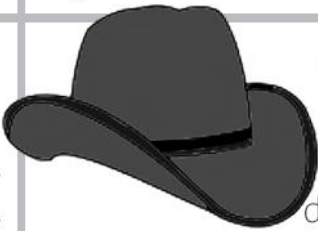
Svart hatt representerer forbehold og forsiktighet, fokuserer på farefulle sider. Objektivt.

Gul hatt representerer positive, konstruktive muligheter og håp. Tillater visjoner og drømmer. Objektivt og spekulativt.

Grønn hatt representerer det kreative og brukes til idéskaping og løsningsforslag. Lete etter alternativer. Spekulativt.

Blå hatt representerer kontroll og organisering, en metatenking. Overblikk.



 Process Planning for action. What type of thinking is needed? Thinking about thinking.	 Creativity Ideas, possibilities, pie-in-the-sky alternatives. Imagining all kinds of solutions.
Facts What do we know? What do I need to find out? Objective information and data.	 Benefits Positive points. Why an idea may be useful. Logical reasons are provided.
 Feelings Current feelings. Intuition, hunches, gut instinct. No reasoning needed.	 Cautions Weaknesses, risks, difficulties, dangers. Logical reasons are provided.

å få flere designideer

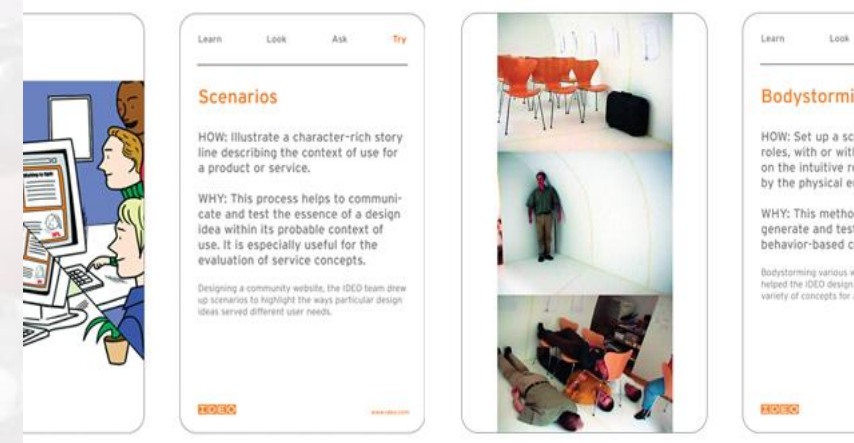
- innspill utenfra

IDEO

< thinking

Method Cards

IDEO Method Cards are a tool to showcase methods we use to inspire great design and keep people at the center of our design process. Each of the 51 cards describes one method and includes a brief story about how and when to use it.



å få flere designideer

Powers of Ten (film)

Article [Talk](#)

From Wikipedia, the free encyclopedia

The ***Powers of Ten*** films are two short American documentary films written and directed by [Charles and Ray Eames](#). Both works depict the relative [scale](#) of the [Universe](#) according to an [order of magnitude](#) (or [logarithmic scale](#)) based on a [factor of ten](#), first expanding out from the Earth until the entire universe is surveyed, then reducing inward until a single atom and its quarks are observed.

Powers of Ten



Title card for the 1977 version

Directed by	Charles and Ray Eames
Based on	<i>Cosmic View</i> by Kees Boeke
Narrated by	Judith Bronowski (1968) Philip Morrison (1977)
Music by	Elmer Bernstein
Distributed by	IBM Pyramid Films
Release date	September 4, 1977
Running time	9 min
Country	United States
Language	English

POWERS OF TEN AND THE RELATIVE SIZE OF THINGS IN THE UNIVERSE



1977

Powers of Ten is one of the Eameses' best-known films. Since it was produced in 1977, it has been seen by millions of people both nationally and internationally. As with [A Communication Primer](#) and *2n* (a 2-minute Peep Show from the exhibition, [Mathematica](#)), in this film, Charles and Ray employed the system of exponential powers to visualize the importance of scale.

When the Eameses came across the 1957 book by Kees Boeke, *Cosmic View: The Universe in Forty Jumps*, they decided to

å få flere designideer

Powers of Ten (film)

[Article](#) [Talk](#)

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Powers of Ten

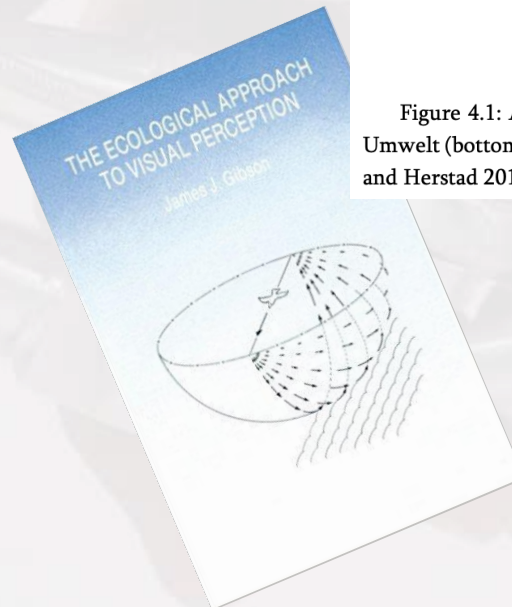


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Figure 4.1: A garden according to the human Umwelt (top), the same garden according to a Roberto's Umwelt (bottom) where the thin line represents the boundary wire and the dotted line the guide wire (Soma and Herstad 2018, p. 60).



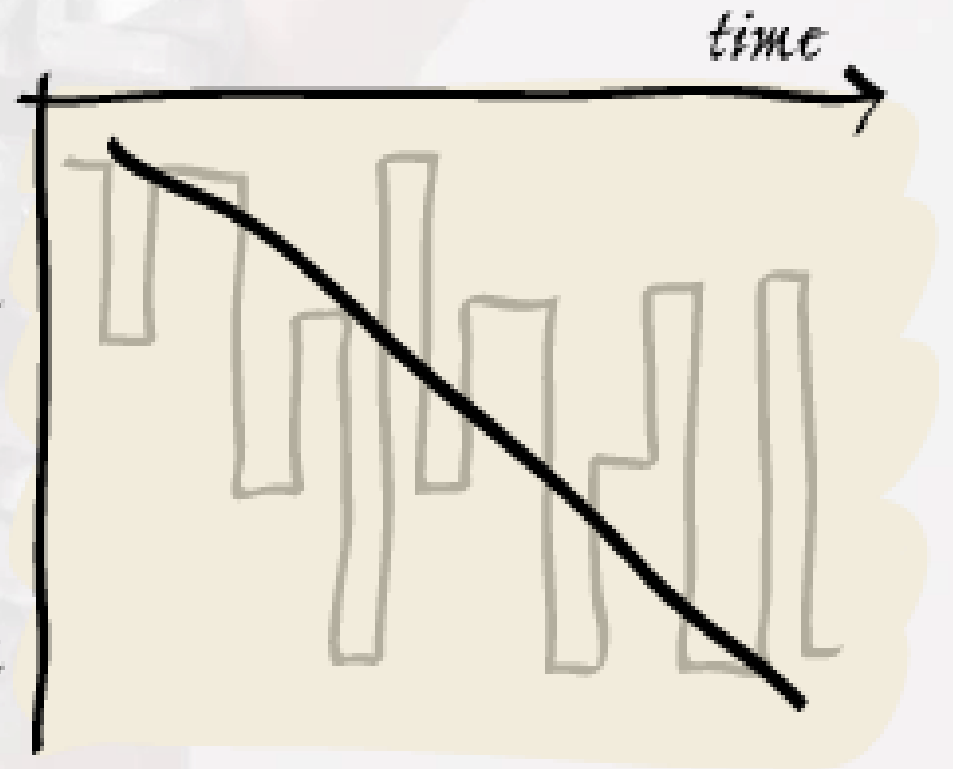
å få flere designideer

- systematisk skifte perspektiv
- i samtale med materialet



*bevege seg mellom flere
nivåer av konkretisering
samtidig*

vision
operative image
details
specification



å jobbe med designideer: skisser

å bearbeide ideer

- konkretisere
- presisere
- detaljere
- vurdere & videreutvikle



Munchs skisser til «Skrik»

å jobbe med designideer: skisser

å bearbeide ideer

- konkretisere
- presisere
- detaljere
- vurdere & videreutvikle

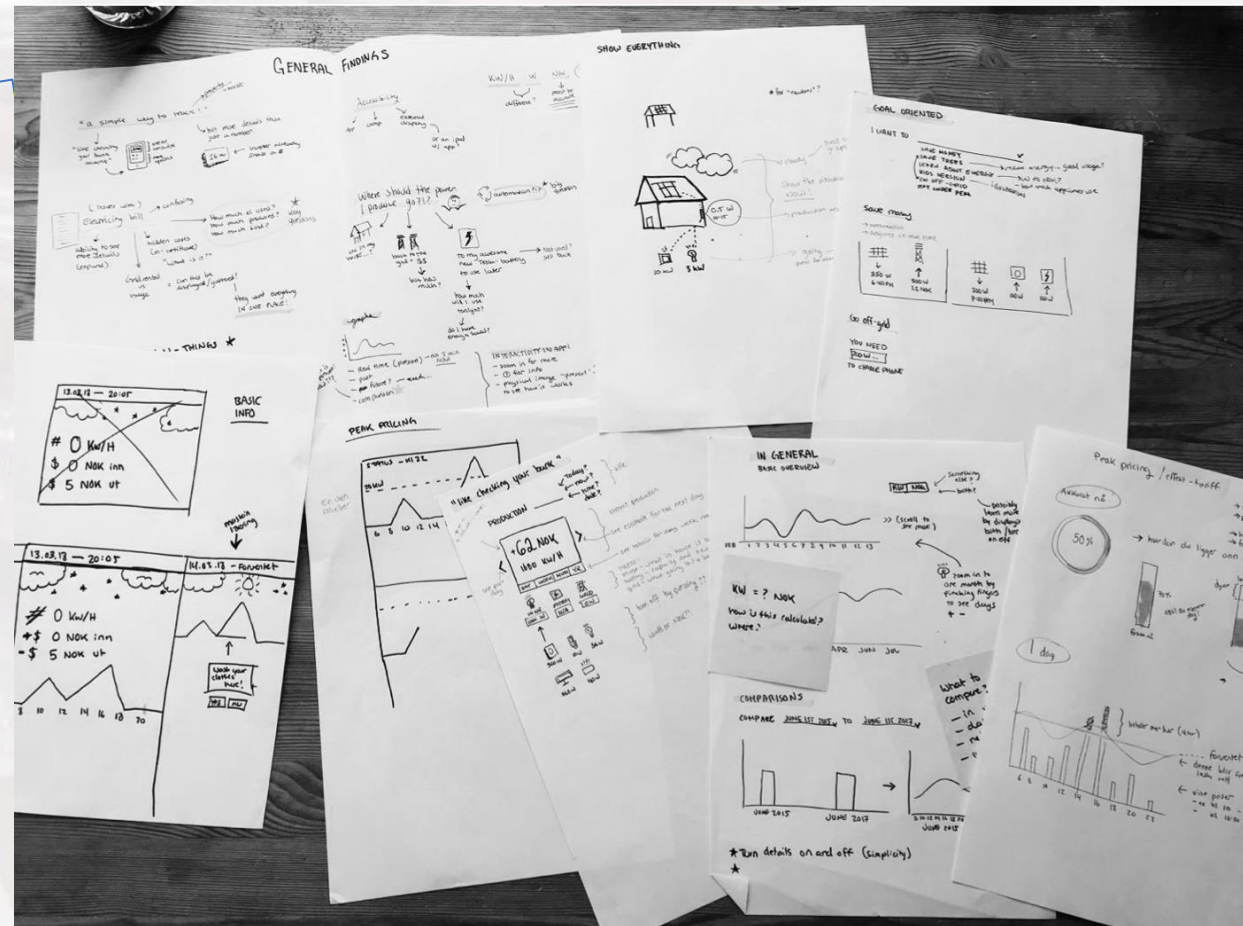
Designing a solar panel display:
Information, visualization and personalization

Thea Snilsberg Søfting

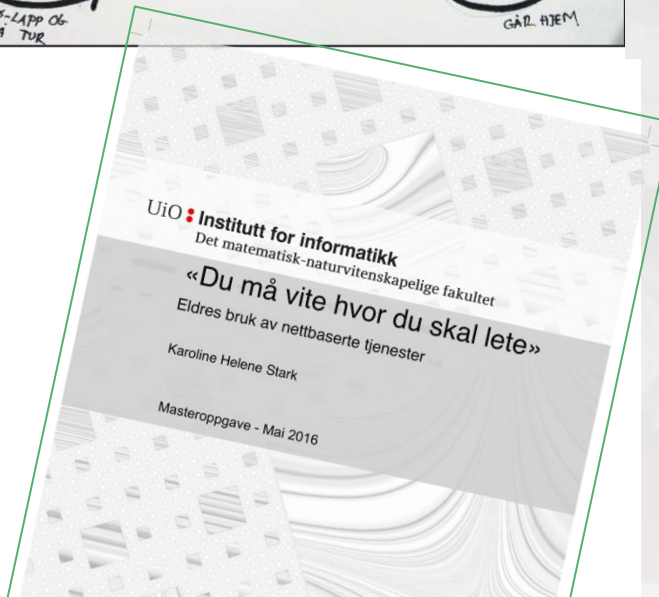
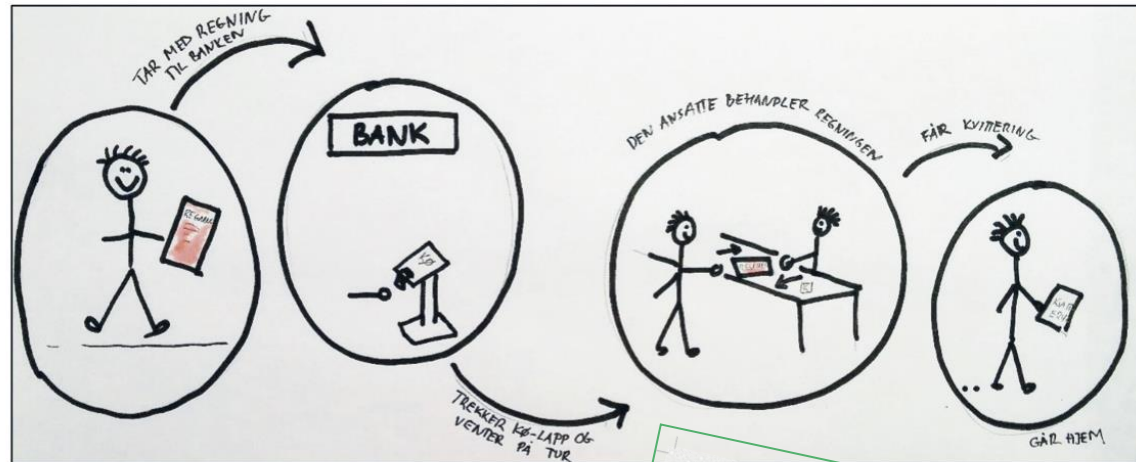


Thesis submitted for the degree of
Master in Informatics: Design, Use, Interaction
60 credits

Department of Informatics
UNIVERSITY OF OSLO
Spring 2018



skisser av prosesser / dreiebok



eksempel på dreiebok ("story board")



skisser av prosesser

A breath of fresh air

Visualizing air quality for young adults

Jonas H. Hiorthøy and Marte Rimer

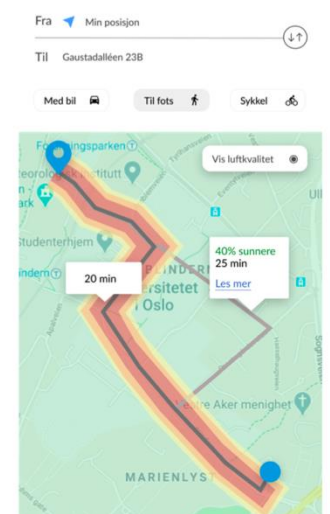
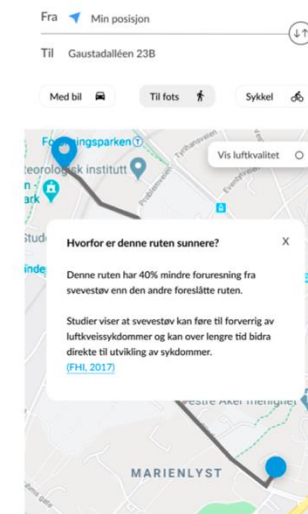
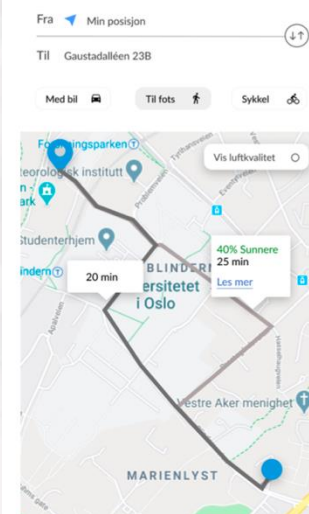
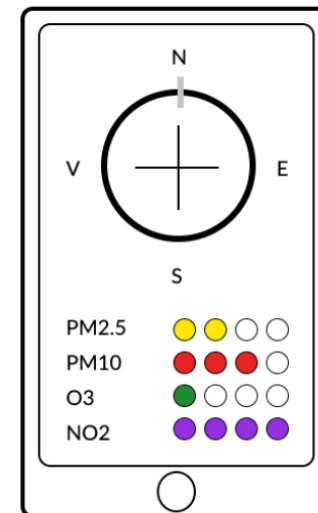
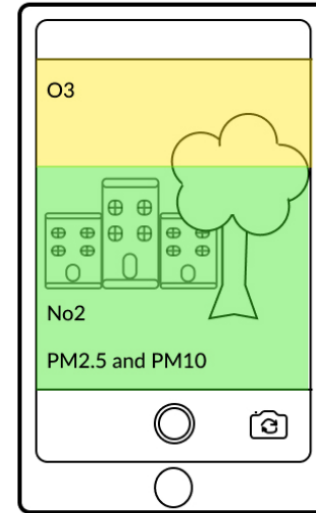
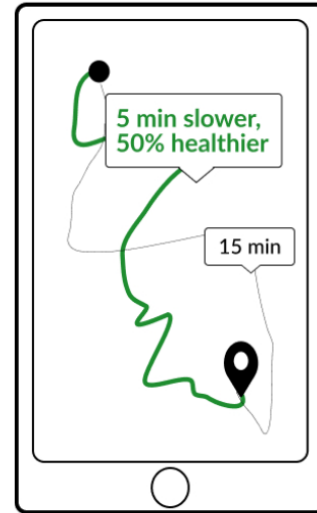


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Spring 2020



skisser av prosesser

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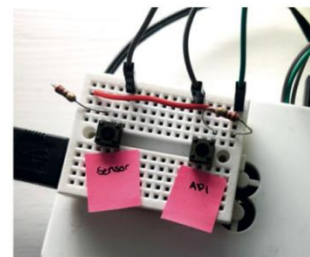
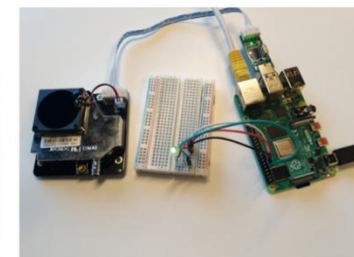
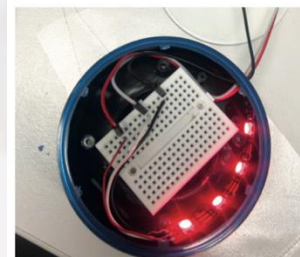
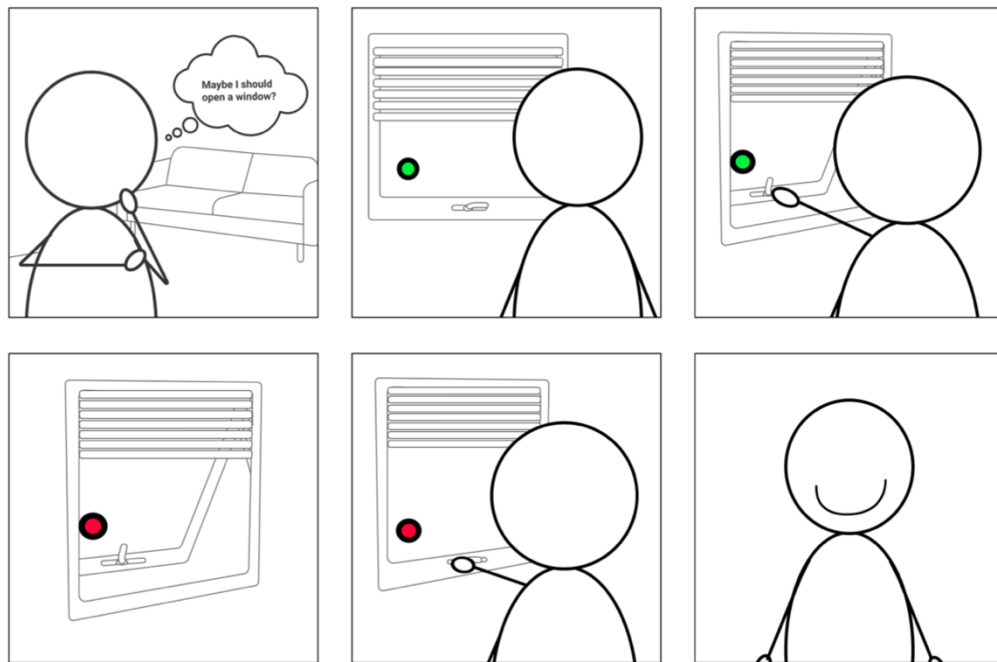


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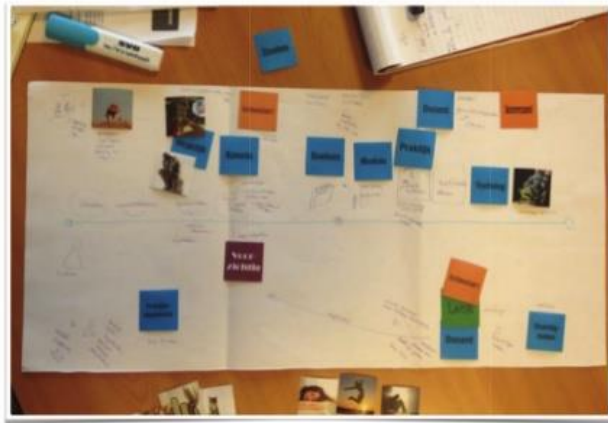
Spring 2020



prosessbeskrivelser

tjenestedesign

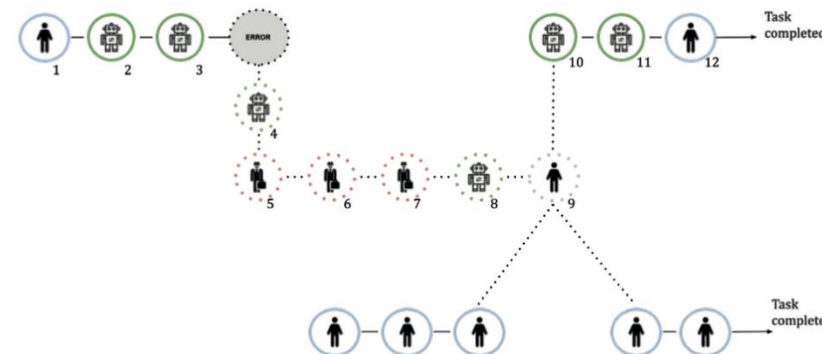
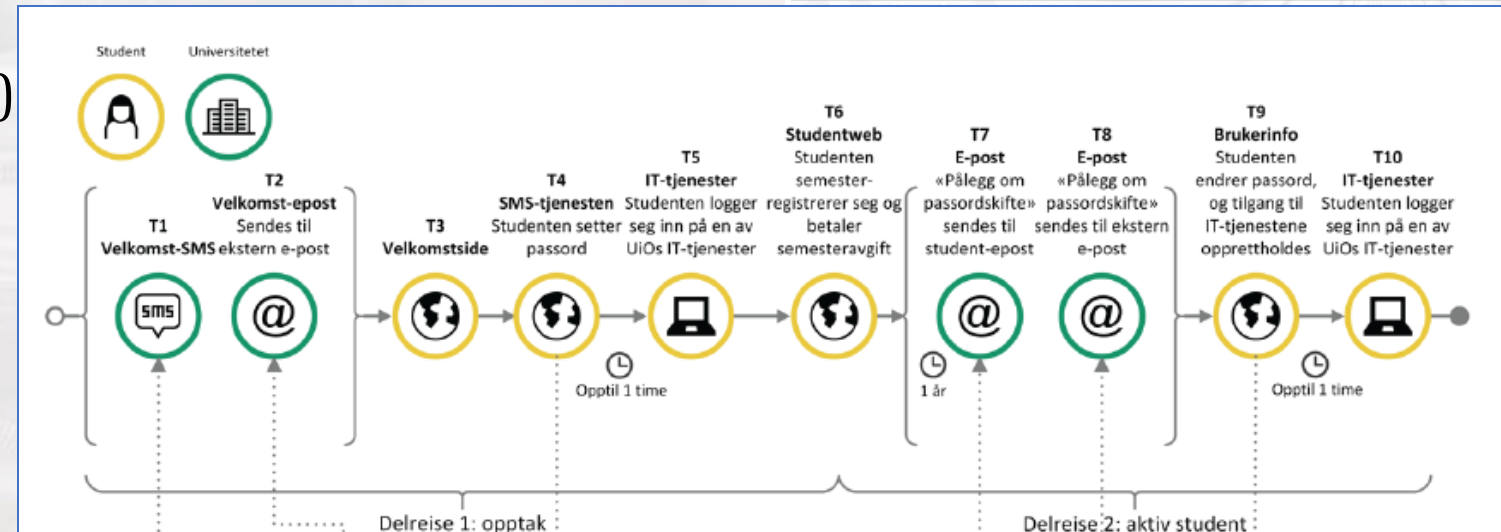
- kundereiser (“customer journey”)



«Hæ? Hvorfor har ingen fortalt meg dette?»

En analyse av IT-løsningene ved UiO i et
tjenstedesignperspektiv

Masteroppgave - Martine Birketvedt Eklund og Seline Tomt - 2016-08



Figur 7.6 Arbeidsflyt med mennesker og roboter, med avvik. Fra Oskarsen 2018 (masteroppgave)

Human-supported robot work

*A case study on mobile robots in
hospital environments*

Johanne Svanes Oskarsen



beskrivelser for analyse + som resultat

gigamapping ($\approx$ rike bilder)

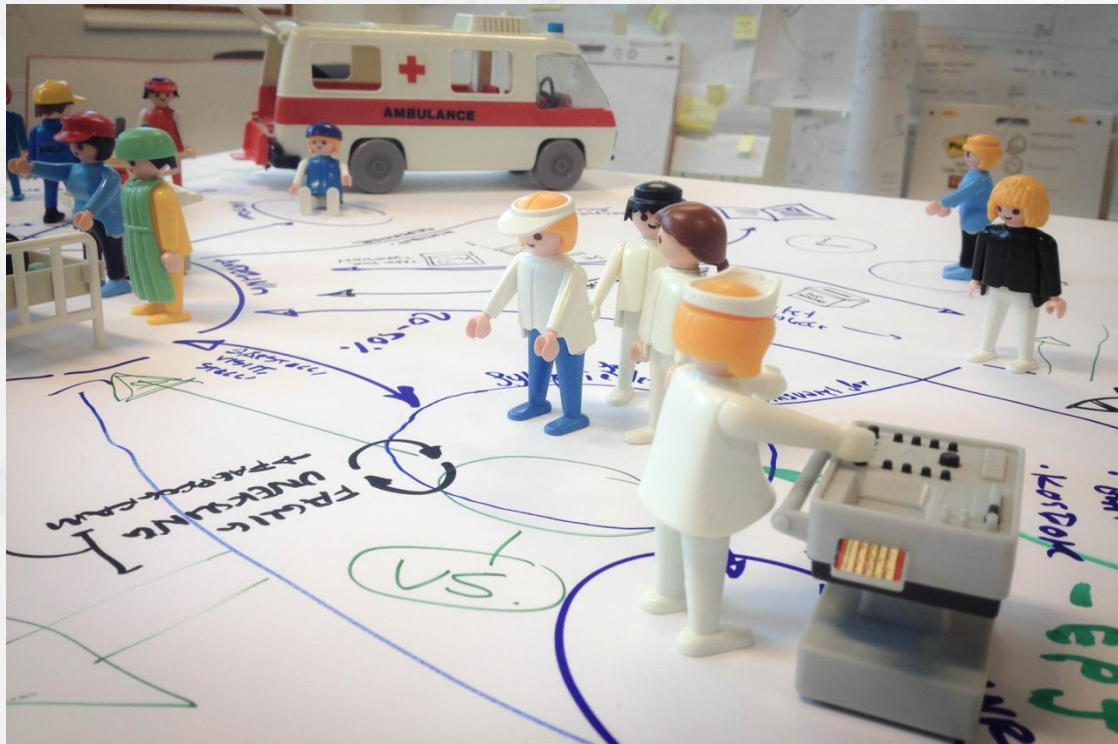
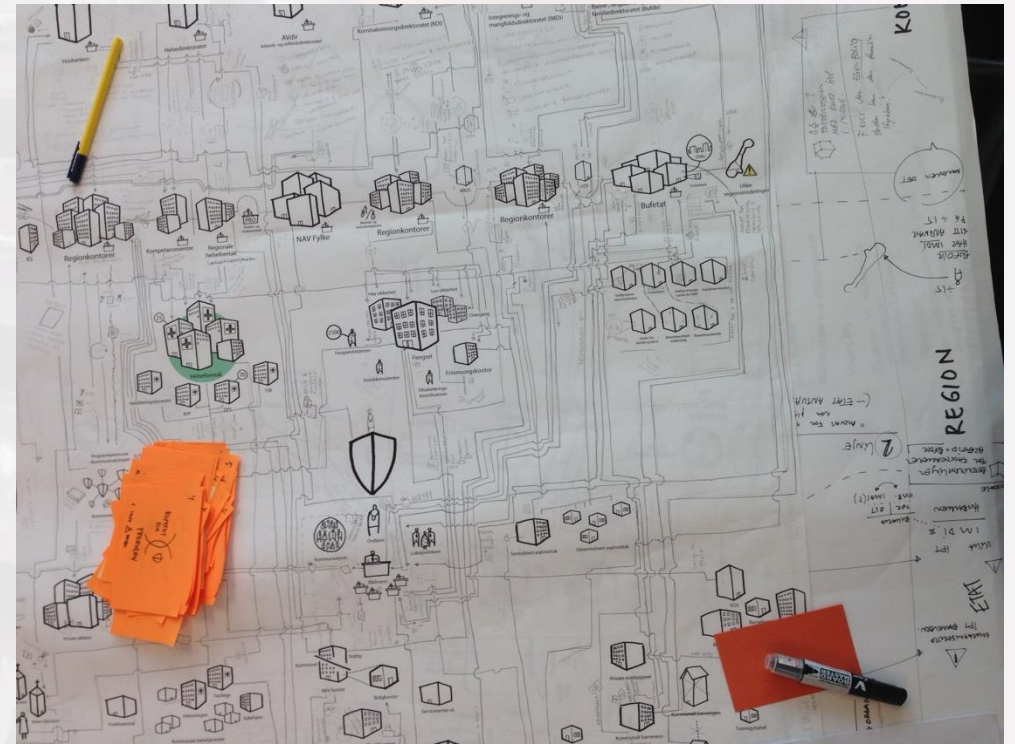


foto: Halogen

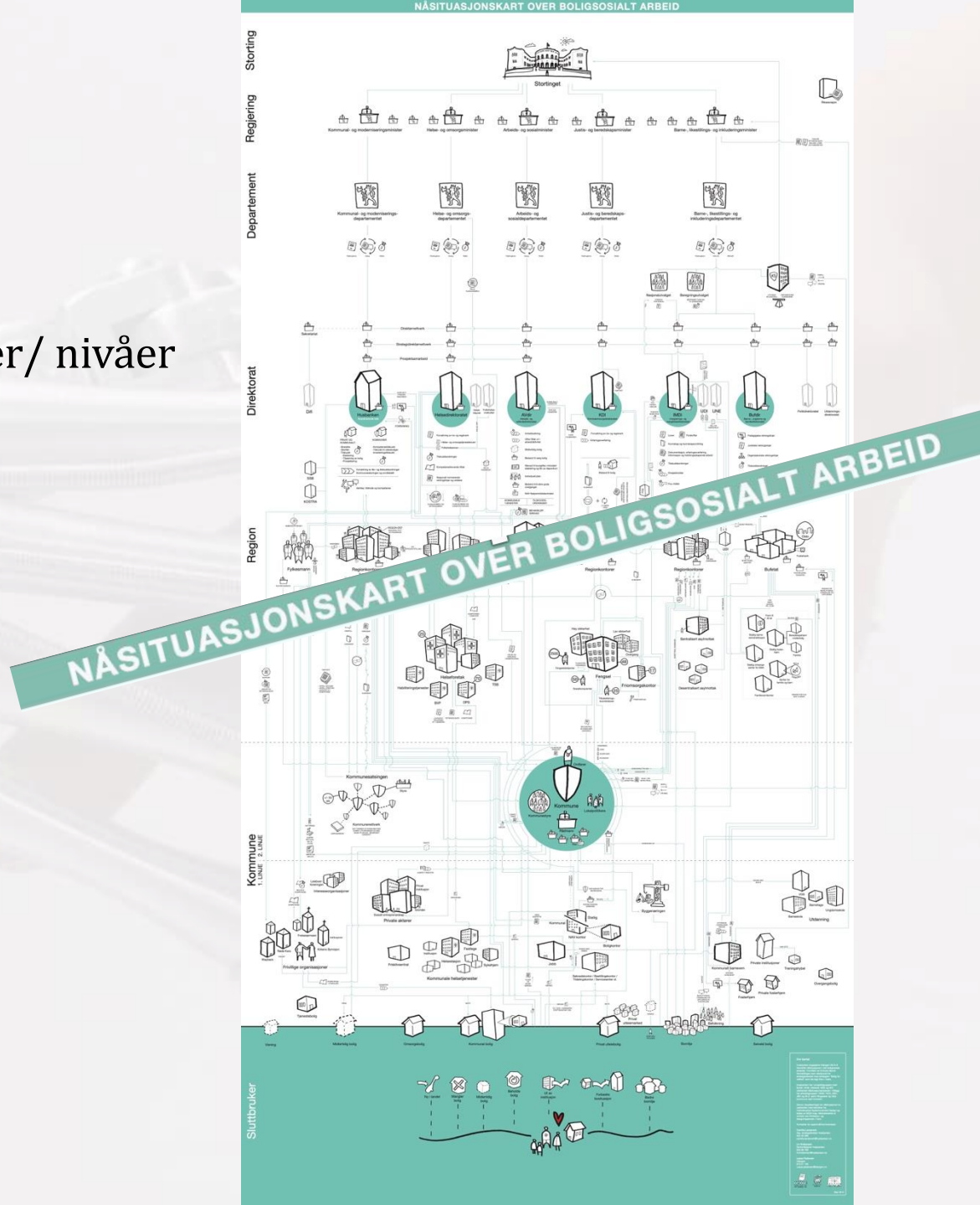


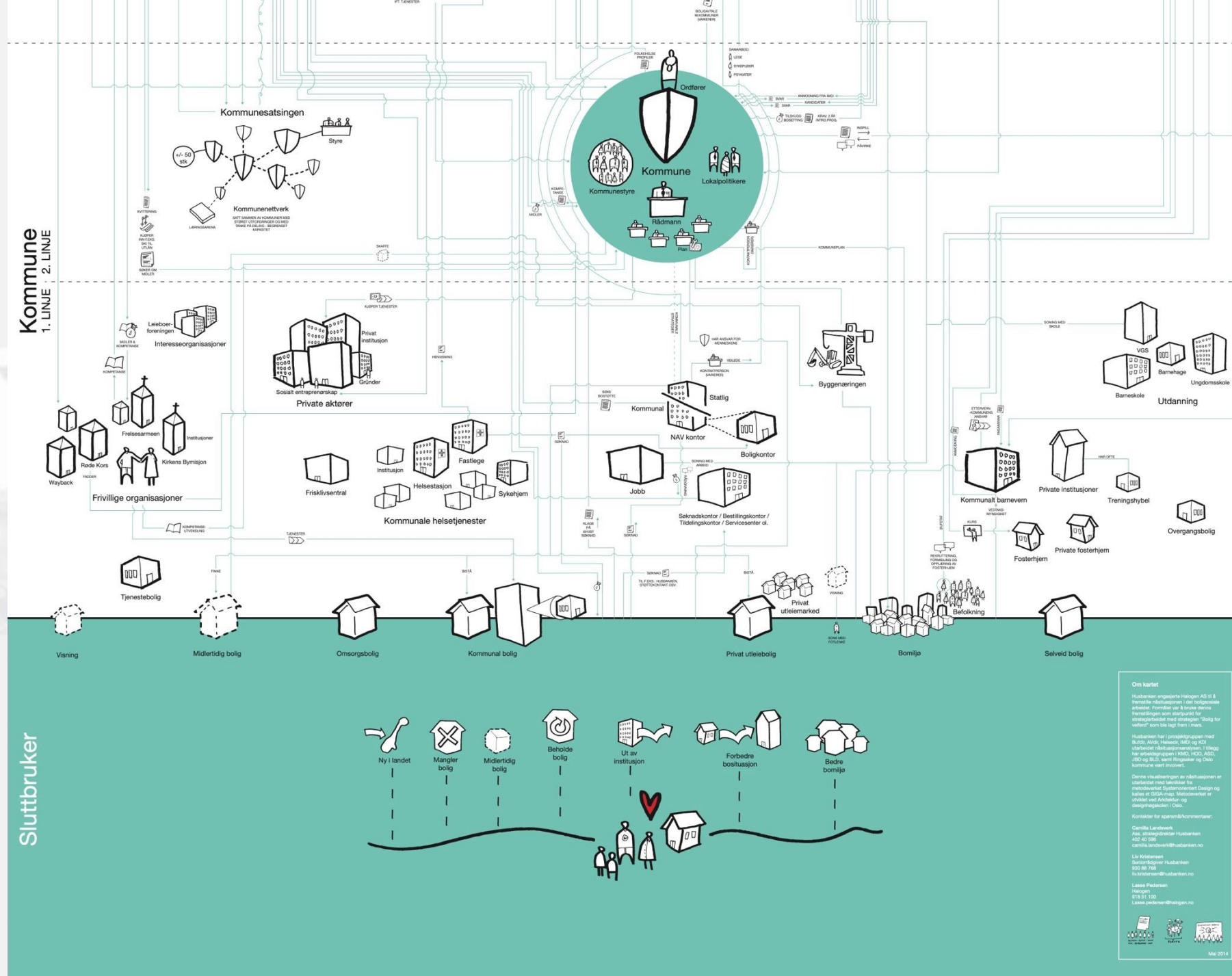
gigamapping

- forstå se hvordan ulike deler/ nivåer henger sammen
 - og påvirker hverandre
- + presentere oversikten & kompleksiteten

foto: Halogen

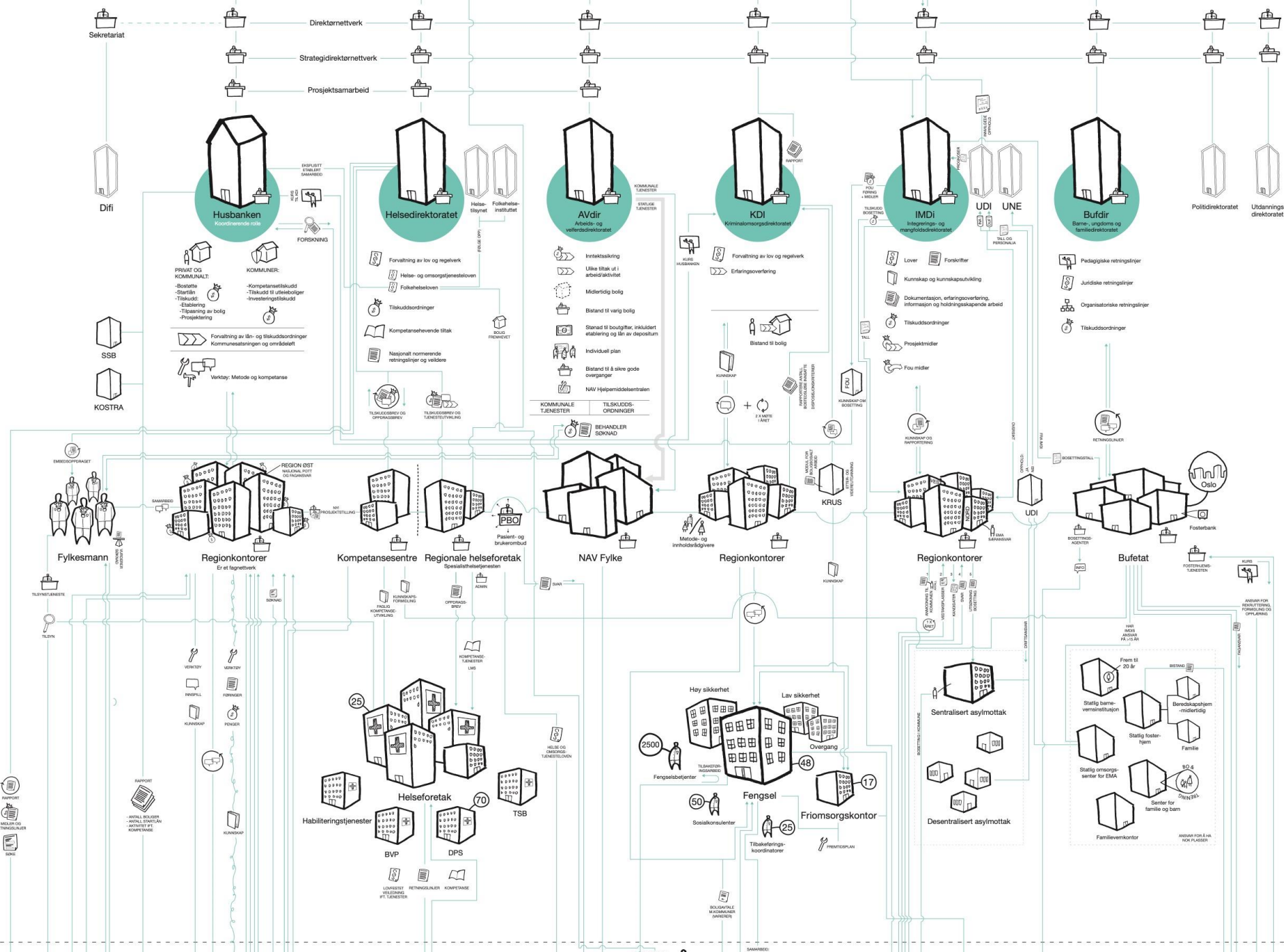
in1060, 1. april 2025





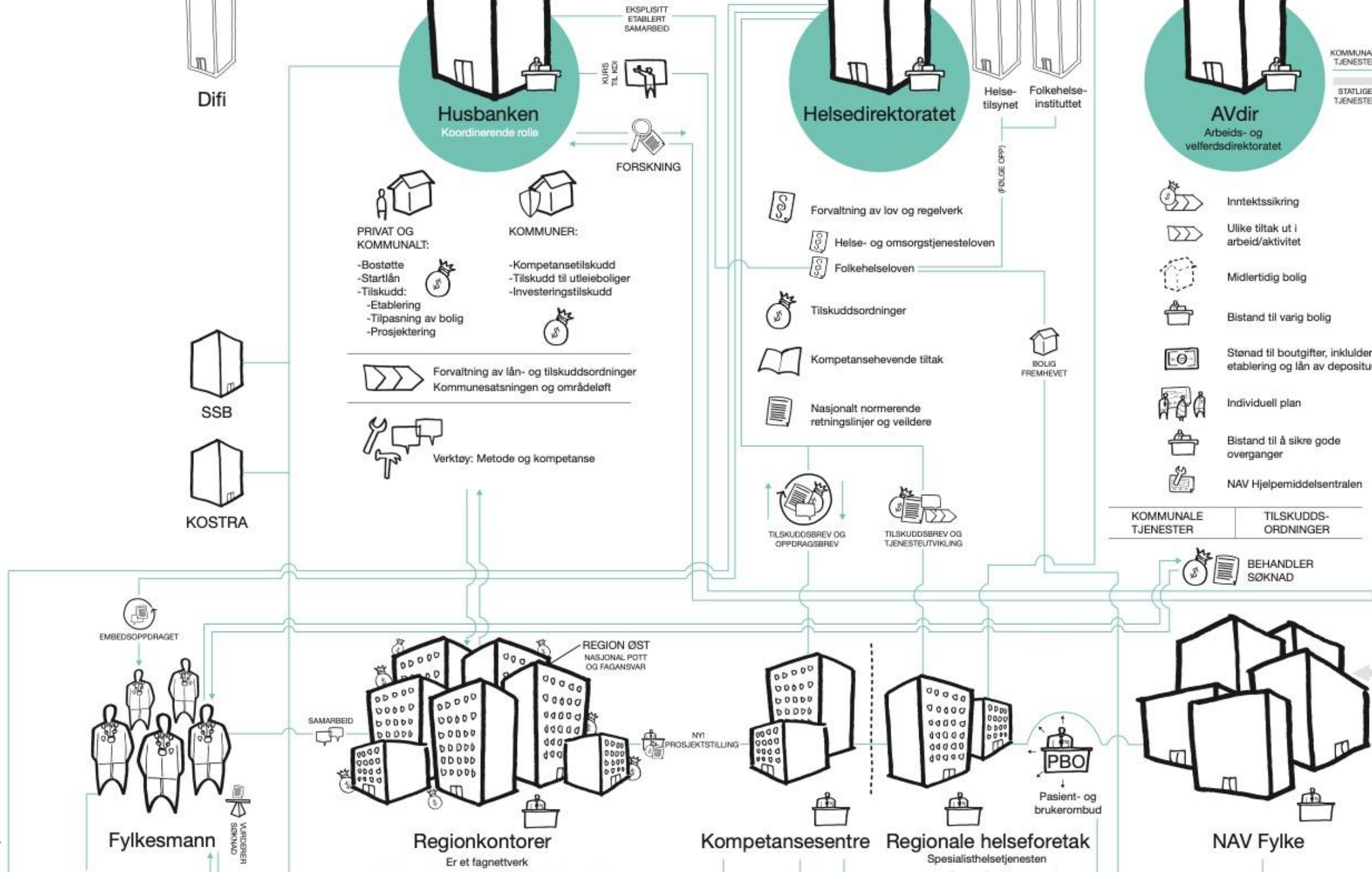
Direktorat

Region



Direkte

Region



system-orientert design

gjesteforelesning tirsdag 22. april

Astrid Larssen:

- hva er tjenstedesign

og hvordan gjør man det?

Systems Oriented Design

SOD- GIGAMAPPING- TOOLS- FRAMEWORKS- PROJECTS- RESEARCH-

Systems Oriented Design / Systemorientert Design (NO)
The designerly way to work with systems
The main mission of Systems Oriented Design is to build the designers own inter systems thinking can fully benefit from design thinking and practice and so that d thinking.

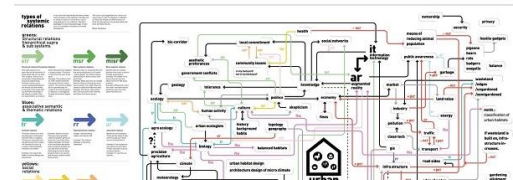
News blog

RSD10 Online
Created: 30 March 2021 Hits: 62

RSD10
Relating Systems Thinking & Design Symposium
Playing with tensions

in Share Like 5 Share 5 Tweet

Executive Master in Systems Oriented Design
Created: 22 February 2021 Hits: 526



Systems Oriented Design

SOD- GIGAMAPPING- TOOLS- FRAMEWORKS- PROJECTS- RESEARCH-

Gigamapping
Created: 31 March 2012 Hits: 105689

By Birger Sevaldson

Gigamapping is part of the [Systems Oriented Design \(SOD\)](#) framework, which has started to live its own life and spread much further than SOD. This site is a part of the SOD web where aspects of Gigamapping are

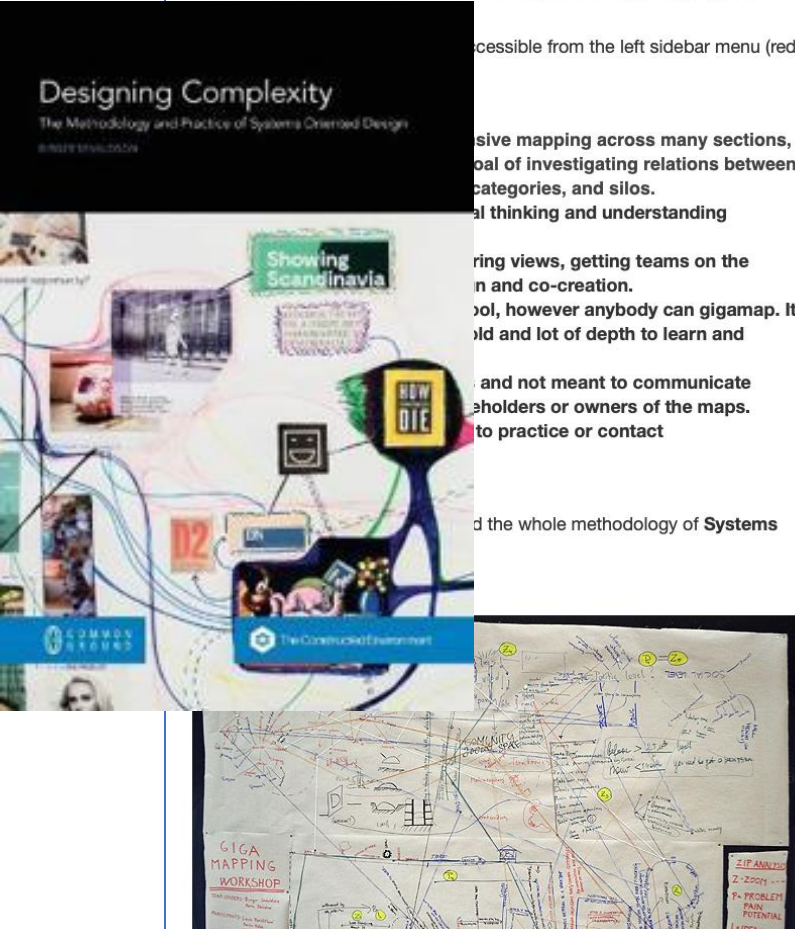
accessible from the left sidebar menu (red

sive mapping across many sections, goal of investigating relations between categories, and silos. al thinking and understanding

ring views, getting teams on the n and co-creation. tool, however anybody can gigamap. It old and lot of depth to learn and

and not meant to communicate sholders or owners of the maps. to practice or contact

d the whole methodology of Systems



prototyping

prototypos (gresk): original form

protos: første + *typos*: type, inntrykk

- en første modell som brukes som mal for videre utvikling, opprinnelig en første fullskala funksjonell form av et nytt design av et artefakt (f.eks. i bilproduksjon)
- et eksemplar som demonstrerer viktige egenskaper hos et fremtidig artefakt
- en modell som representerer en visjon (en løsning)



www.modelljernbanensdag.no



begreper om prototypen i seg selv

- *resolution* = oppløsning, detalj-rikdom
- *fidelity* = nærhet til produkt, forseggjorthet

forseggjorthet: avhengig av rollen til prototypen / de spørsmålene dere lurte på

- *low fidelity* = enkle skisser
 - billig og rask (& kan med fordel kastes)
- *high fidelity* = nesten ferdig produkt
 - forseggjort, kan testes av brukerne alene
- *horizontal prototype*
 - bredde, ikke dybde, mange funksjoner
- *vertikal prototype*
 - dybde & detalj, få funksjoner



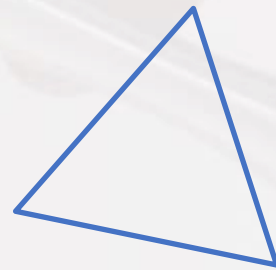
prototypen svarer på spørsmål i design

H&H s 3:

We define *prototype* as any representation of a design idea, regardless of medium

Houde & Hill 1997

implementering



form

What do Prototypes Prototype?

Stephanie Houde and Charles Hill
Apple Computer, Inc.
Cupertino, CA, USA

s.houde@ix.netcom.com, hillc@ix.netcom.com

rolle

1. INTRODUCTION

Prototypes are widely recognized to be a core means of exploring and expressing designs for interactive computer artifacts. It is common practice to build prototypes in order to represent different states of an evolving design, and to explore options. However, since interactive systems are complex, it may be difficult or impossible to create prototypes of a whole design in the formative stages of a project. Choosing the right kind of more focused prototype to build is an art in itself, and communicating its limited purposes to its various audiences is a critical aspect of its use.

The ways that we talk, and even think about prototypes, can get in the way of their effective use. We can get in the way of describing prototypes themselves, such as how they are used, and how they are built.

the kinds of prototypes to build. With a clear purpose for each prototype, we can better use prototypes to think and communicate about design.

In the first section we describe some current practices in communicating about prototypes, the complexity of interactive systems, issues of disciplinary teamwork, and the audiences for prototypes. Next, we introduce the model of prototypes with some initial examples of prototypes from real projects. In the following section we present several more examples to illustrate further issues. We conclude the chapter with a summary of the main implications of prototyping practice.

2. THE PROBLEM WITH PROTOTYPING

Interactive computer systems and artifacts can have a rich variety of characteristics, such as auditory, visual, and interactive. For example, a personal digital assistant has an operating system, a graphical user interface, and a database.

prototypen svarer på spørsmål i design

tre klasser av spørsmål om artifaktet:

rolle (funksjon, nytte)

*i brukerens liv
hvordan er det nyttig for dem?*

integrasjon

for full brukeropplevelse

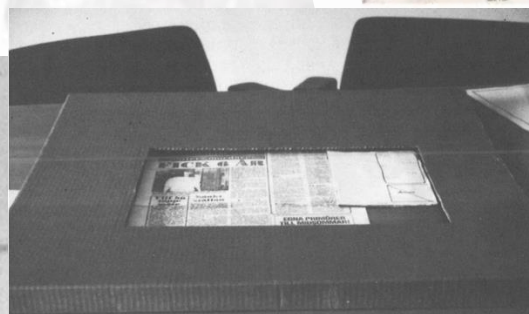
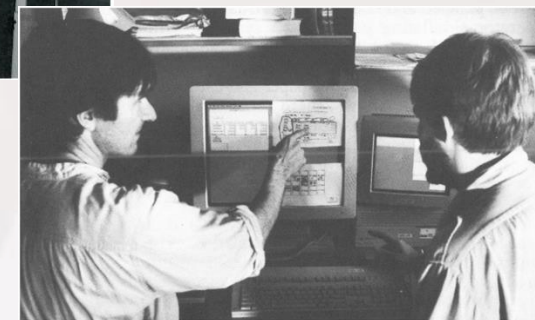
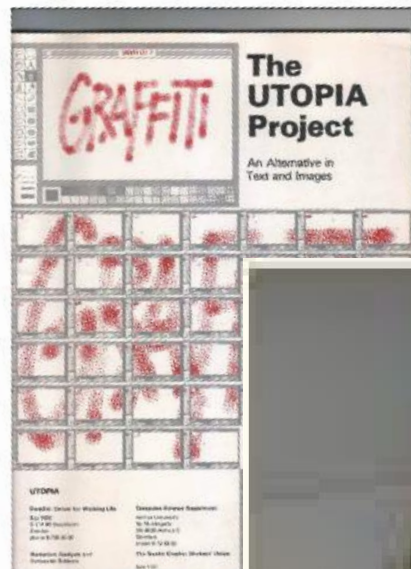
implementering
(hvordan den fungerer)

hvordan få den til å virke?

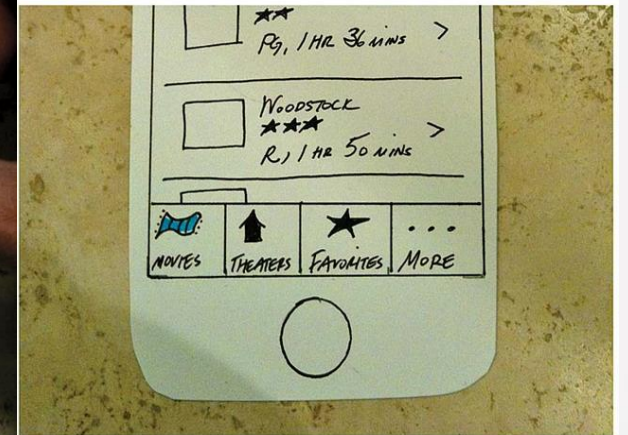
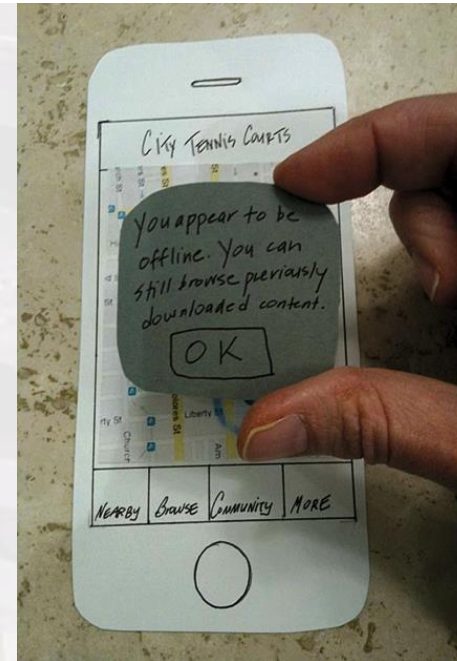
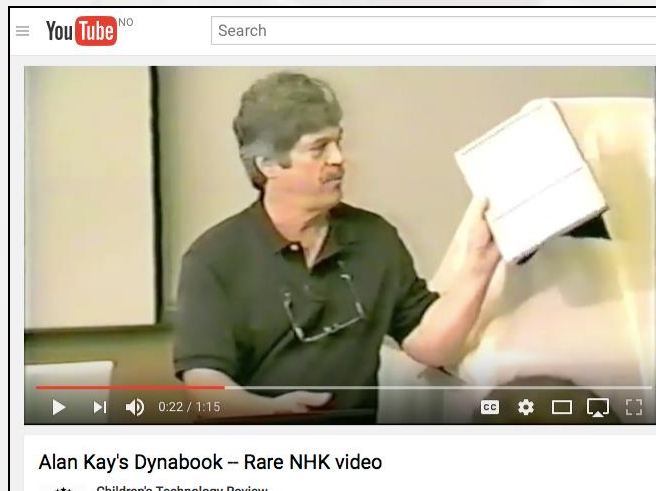
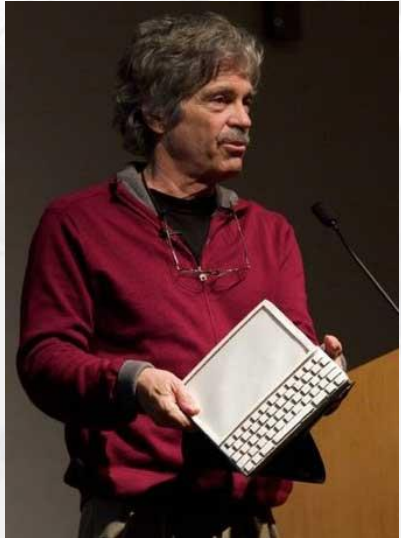
form («look-and-feel”)
(brukerens sanse-opplevelse)

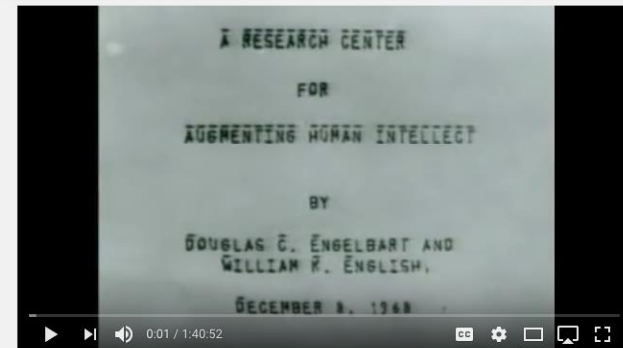
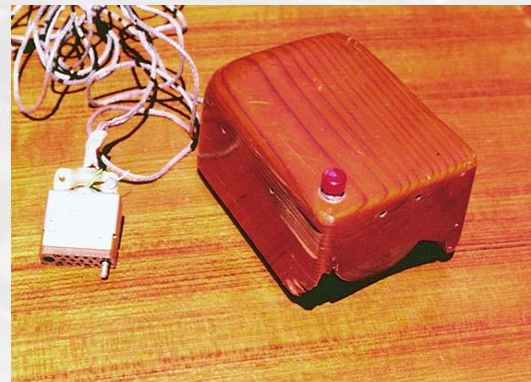
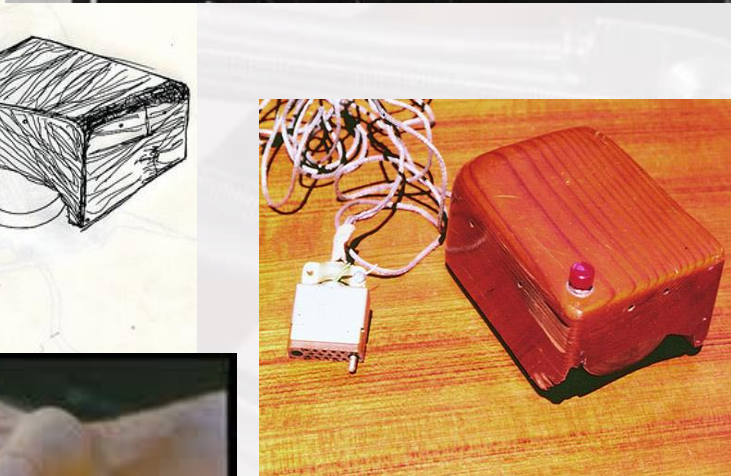
*konkret brukeropplevelse:
se, høre, føle ...*

UTOPIA-prosjektet

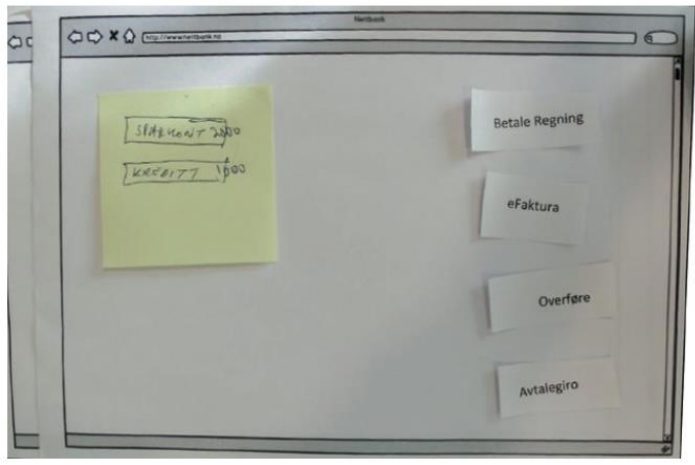


Alan Kay med Dynabook





enkle prototyper



*Karoline Stark
Harald Maartmann-Moe*



Figure 15 The children's first meeting with the embodied representation of the CA

*Julie Nilsen Hagen & Kristine Røyneland
"trollmannen fra Oz"*

bruk av prototyper i rollespill

Buchenau & Fulton Suri
erfaringsprototyping – “body storming”



Figure 15 The children's first meeting with the embodied representation of the CA

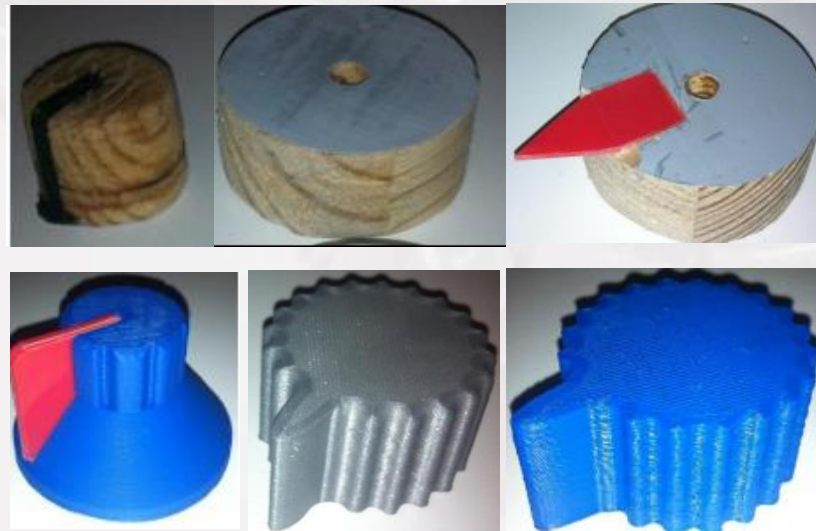
Julie Nilsen Hagen & Kristine Røyneland
“trollmannen fra Oz”

prototyping med barn



prototyping med eldre

Espen Johnssen m.fl. & Suhas Joshi



Rune Rosseland



Thomas Iversen & Suhas Joshi

prototyping med eldre

- en klar hensikt / funksjon
- materialutforskning gir ideer
- ønskelige og mulige løsninger



Figure 1. Workshop setup

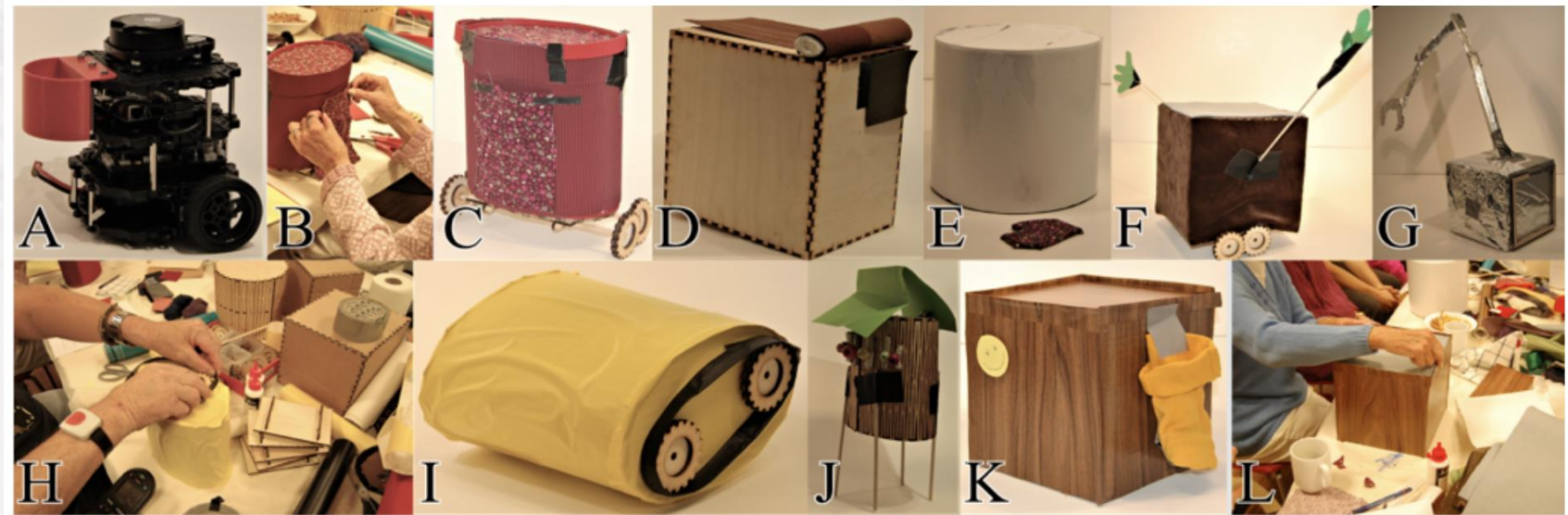


Figure 3. A: "Burger" robot with a 3D printed "backpack" for demonstration, B: Antonella, C: Antonella, D: Brenna, E: Aimee, F: Anca, G: Agelica, H: Bruno, I: Bruno, J: Basilio, K: Antonella, L: Antonella

The Role of Physical Prototyping in Participatory Design with Older Adults

An Exploration of Form and Materials in the Design of a Robot for Older Adults

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Abstract— How can older adults actively participate in the design processes of assistive robots designed for their homes? We have organized workshops with a group of older adults who worked actively with materials and physical prototyping to design a fetch robot for the home. We present the basics of the workshop materials, how the workshop was performed, and findings on the role of physical prototyping from the workshops.

Keywords — robots; human-robot interaction; physical prototyping; older adults; participatory design

I. INTRODUCTION

Assistive technology, such as robots, is designed and implemented to help older, retired people to stay independently at home longer. In the Participatory Design tradition, one of the core values and points of origin is the ideal of democratic

learned from working with older adults through physical prototyping and material explorations before we conclude the paper in Section VI.

II. RELATED WORK

Participants' limited in-depth knowledge of a design project [4] may make it difficult for them to gain an overview of the possibilities in the design domain, and hence challenging to be creative within the design problem. Joshi and Bratteteig [5] suggest that elderly users should be enabled to participate in mutual learning and co-construction activities on their own terms. They describe a successful mutual learning process as the possibility for both groups to extend their creative and imaginative capacity and build on each other's ideas to design concrete artefacts. To participate on their own terms, the participants should be able to express themselves in their own language, without having to adapt the professional ter-

uavhengige prototyper

- så robust og høyoppløselig at den kan brukes av en bruker på egen hånd, hos brukeren eller i brukskonteksten, uten at designeren er tilstede

slik at brukerne kan prøve prototypen

- hjemme, i eget tempo og forme sine egne meninger
- over tid og ikke bare få et førsteinntrykk

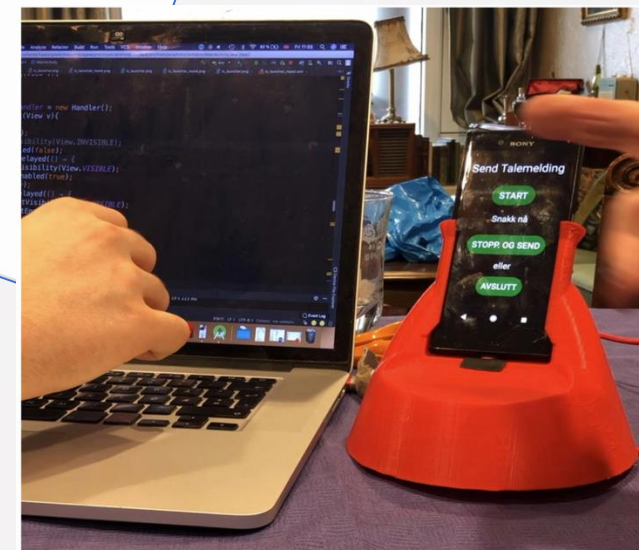
uavhengige prototype er tidkrevende, men gir god læring til alle



uavhengige prototyper



*prototyper av
Harald Maartmann-Moe*



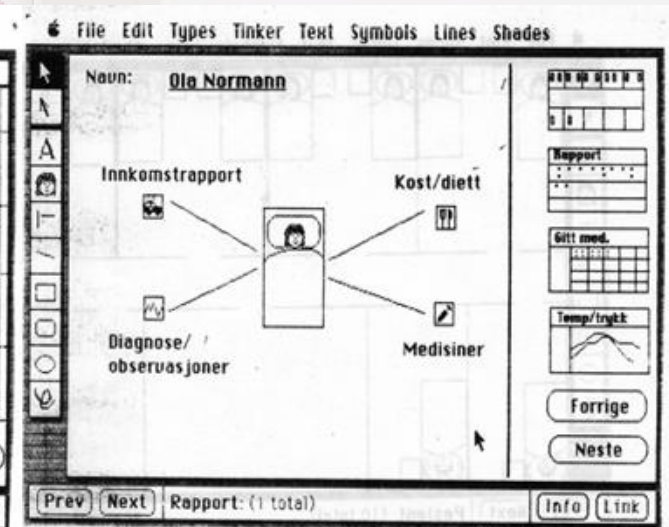
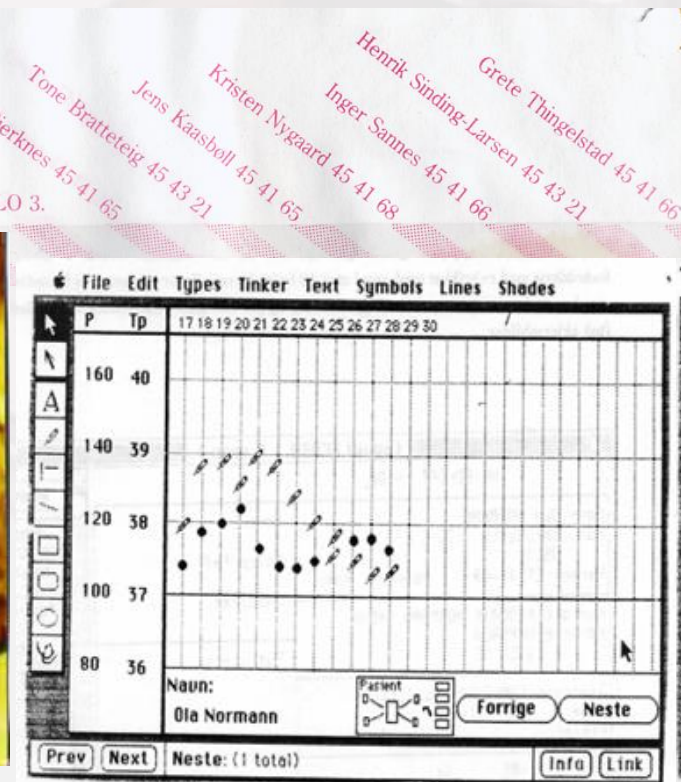
tips for prototyping

- lag mer enn én prototype til brukerne: da blir de eksempler & lager et idé-rom
- uferdige “kladder” gir inspirasjon til forbedringer og inviterer brukerne til å delta i designarbeidet

florence

Et forskningsprosjekt om bruk av edb som hjelpemiddel i sykepleie, tilknyttet det nordiske forskningsprogrammet SYDPOL.

Institutt for informatikk, Universitetet i Oslo, Postboks 1080 Blindern, 0316 OSLO 3.



presentasjon av prototyper 14 - 19 mai

hensikt:

- 1) få feedback på prototypene dvs. hvordan dere har konkretisert ideene deres og derfor kan dere gjerne ha mer enn én idé og mer enn én prototype
- 2) få tips om alternative tekniske løsninger
- 3) få tips om hva dere kan gjøre for å forbedre prosjektet

NB: dette er et kurs hvor læring er viktigst
dvs. at prosessen er viktigst