Prototyping med og for brukere

Pensum

What do Prototypes Prototype?

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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. Current terminology for describing prototypes centers on attributes of prototypes themselves, such as what tool was used to create them, and how refined-looking or -behaving they are. Such terms can be distracting. Tools can be used in many different ways, and detail is not a sure indicator of completeness.

We propose a change in the language used to talk about prototypes, to focus more attention on fundamental questions about the interactive system being designed: What role will the artifact play in a user's life? How should it look and feel? How should it be implemented? The goal of this chapter is to establish a model that describes any prototype in terms of the artifact being designed, rather than the prototype's incidental attributes. By focusing on the purpose of the prototype—that is, on *what it prototypes*—we can make better decisions about 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 difficulties in communicating about prototypes: the complexity of interactive systems; issues of multidisciplinary teamwork; and the audiences of prototypes. Next, we introduce the model and illustrate it with some initial examples of prototypes from real projects. In the following section we present several more examples to illustrate some further issues. We conclude the chapter with a summary of the main implications of the model for prototyping practice.

2. THE PROBLEM WITH PROTOTYPES

Interactive computer systems are complex. Any artifact can have a rich variety of software, hardware, auditory, visual, and interactive features. For example, a personal digital assistant such as the Apple Newton has an operating system, a hard case with various ports, a graphical user interface and audio feedback. Users experience the combined effect of such interrelated features; and the task of designing—and prototyping—the user experience is therefore complex. Every aspect of the system must be designed (or inherited from a previous system), and many features need to be evaluated in combination with others.

Prototypes provide the means for examining design problems and evaluating solutions. Selecting the focus of a prototype is the art of identifying the most important open design questions. If the artifact is to provide new functionality for users—and thus play a new *role* in their lives—the most important questions may concern exactly what that role should be and what features are needed to support it. If the role is well understood, but the goal

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Kapittel på pensum

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 utvide idérommet

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

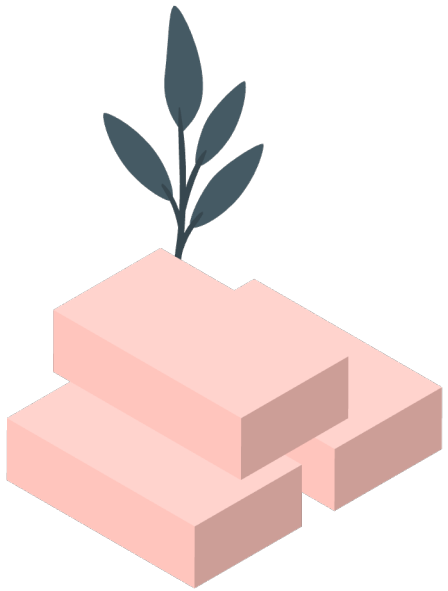
- utnytte kunnskap og erfaringer i gruppa
- skaffe nye kunnskaper / erfaringer i gruppa
- involvere andre ekspertiser (f.eks. brukere)

Hva er prototyper

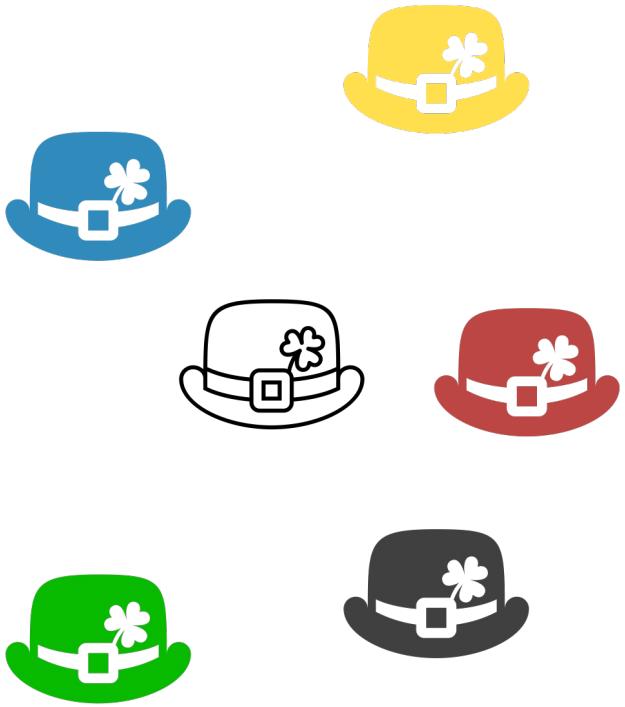
Hva er prototyper

En representasjon av en designidé

Kan være en ting som finnes fra før hvis den brukes for å besvare et designspørsmål (f.eks. murstein eller pizzaeske)



Hvordan få designidéer

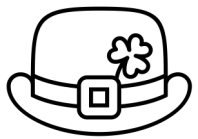


- systematisk skifte perspektiv
- perspektiver og ideer i teamet
- innspill utenfra

Hvordan få designidéer

Prosess

Planlegge for handling.
Hvilken type tenking er nødvendig?
Tenke på å tenke



Fakta

Hva vet vi egentlig?
Hva trenger vi å finne ut?
Objektiv informasjon og data

Kreativitet

Idéer og muligheter
«Alt går» mentalitet
Se for seg alle mulige løsninger

Fordeler

Positive poenger
Hvorfor er dette nyttig?
Logiske grunner gis

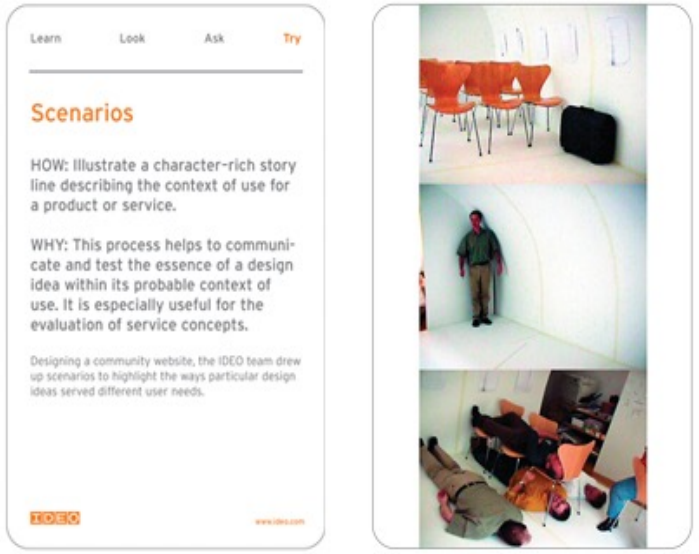
Følelser

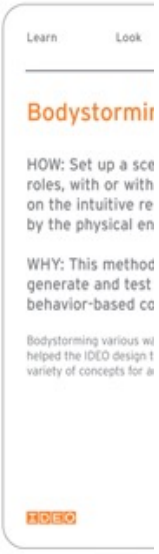
Nåværende følelser
Intuisjon, anelser og mageføelse
Ingen begrunnelse trengs

Konklusjon

Svakheter og risikoer
Utfordringer og farer
Logiske grunner gis


braking
IDEO METHOD CARDS
51 ways to inspire design
IDEO


Learn
Look
Ask
Try
Scenarios
HOW: Illustrate a character-rich story line describing the context of use for a product or service.
WHY: This process helps to communicate and test the essence of a design idea within its probable context of use. It is especially useful for the evaluation of service concepts.
Designing a community website, the IDEO team drew up scenarios to highlight the ways particular design ideas served different user needs.
IDEO


Learn
Look
Bodystormi
HOW: Set up a sce
roles, with or with
on the intuitive re
by the physical en
WHY: This method
generate and test
behavior-based co
IDEO


IDEO METHOD CARDS
IDEO METHOD CARDS
IDEO METHOD CARDS

å jobbe med designideer: skisser

å bearbeide ideer

- vurdere & videreutvikle
- konkretisere

Munchs skisser til «Skrik»

å jobbe med designideer: skisser

å bearbeide ideer

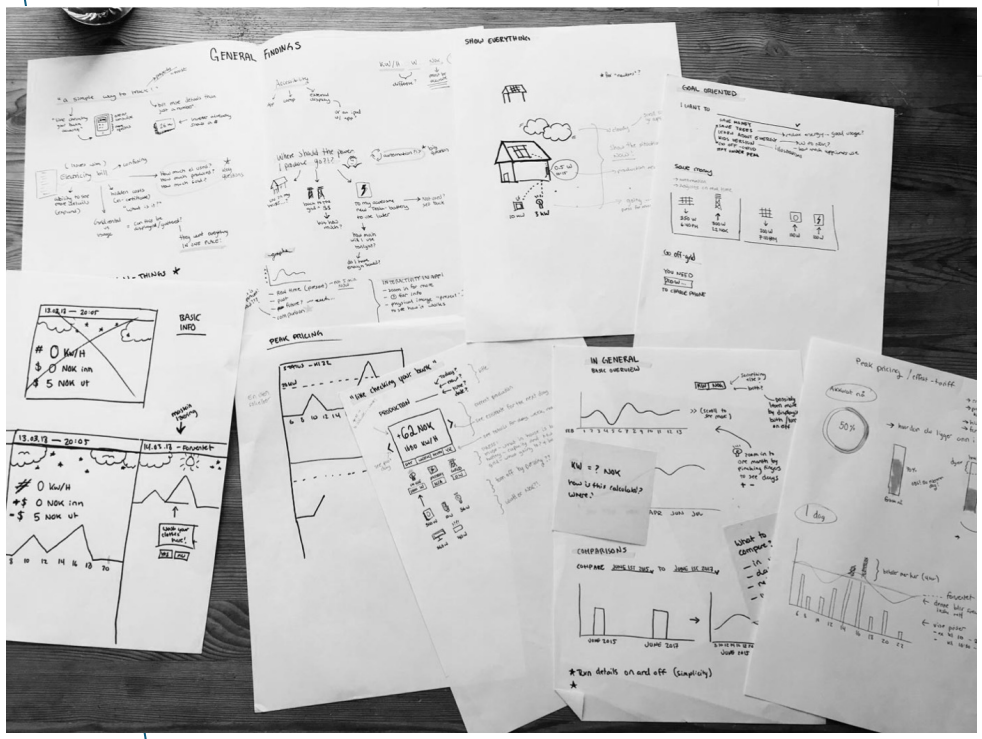
- vurdere & videreutvikle
- konkretisere

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



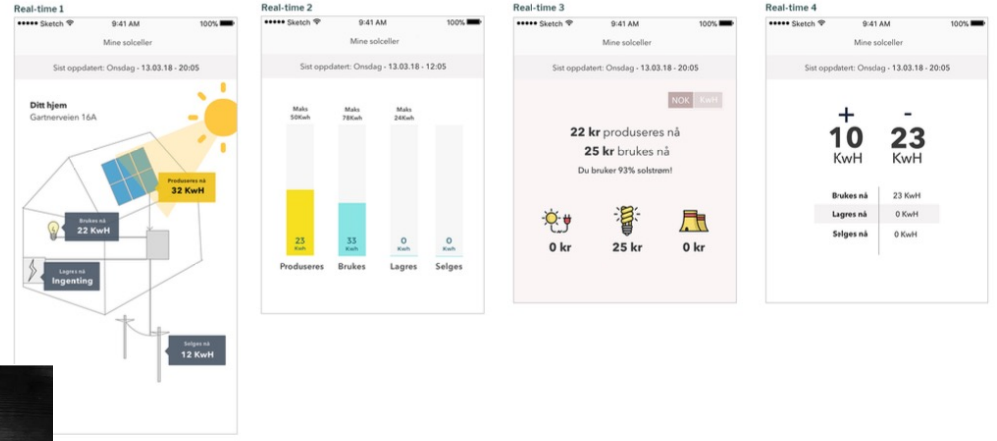
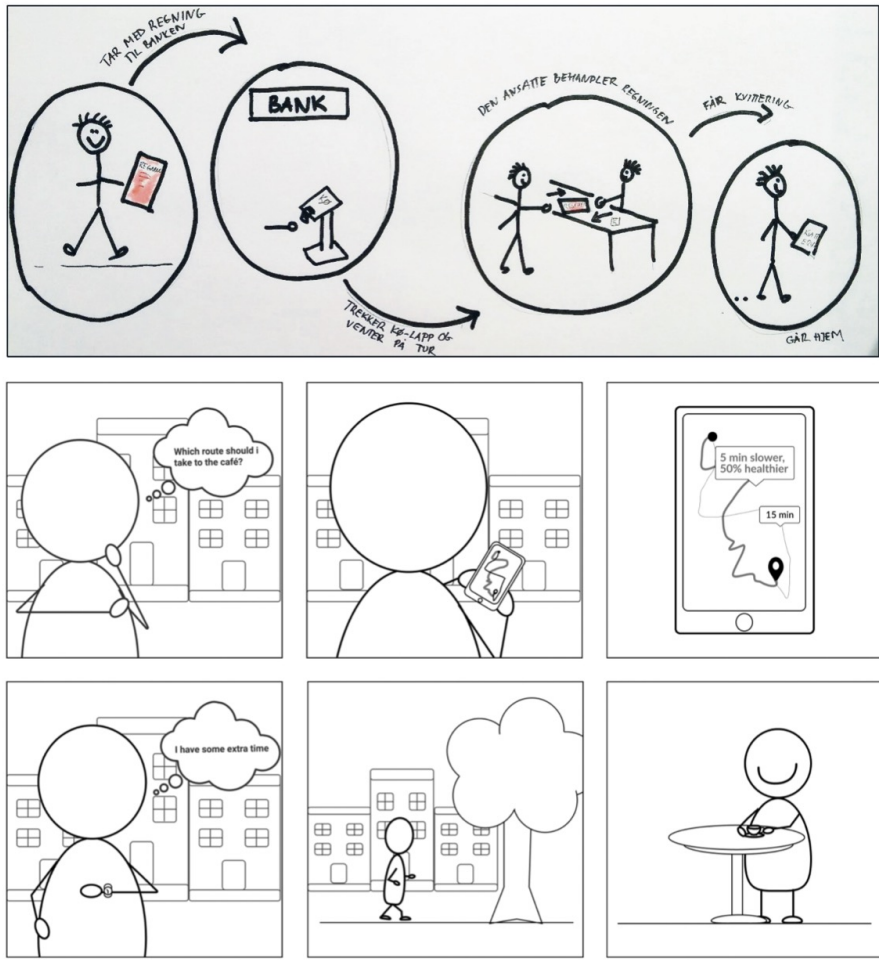


Figure 33- Examples of designing the same information for different types of users

skisser av prosesser / dreiebok (story board)



Figur 7.4 Eksempel på en dreiebok. Fra Stark 2016 og Rimer & Hiorthøy 2020 (masteroppgaver)

eksempel på dreiebok ("story board")

skisser av prosesser

A breath of fresh air

Visualizing air quality for young adults

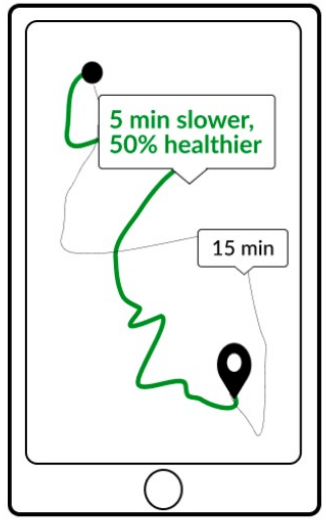
Jonas H. Hiorthøy and Marte Rimer

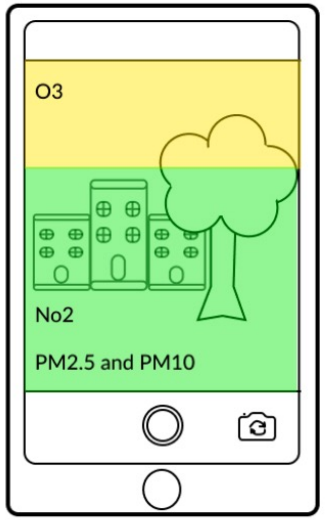
Thesis submitted for the degree of
Master in Informatics: Design, use and interaction
60 credits

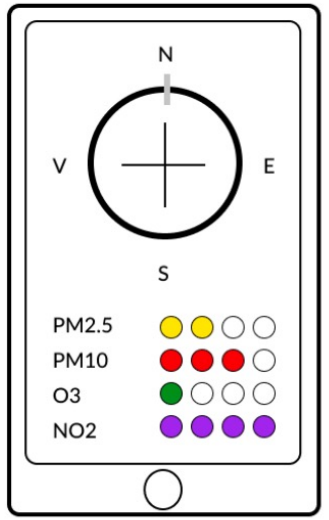
Department of Informatics
The Faculty of Mathematics and Natural Sciences

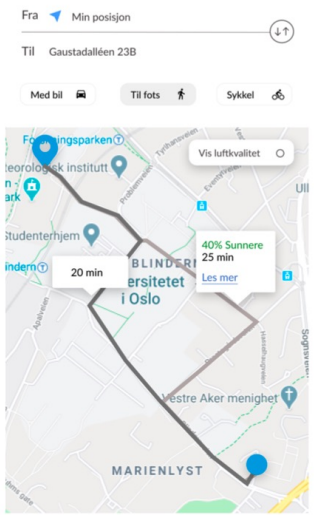
UNIVERSITY OF OSLO

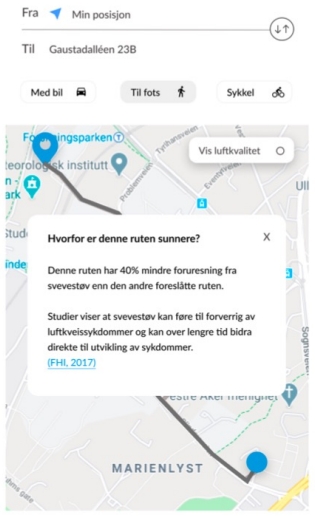
Spring 2020

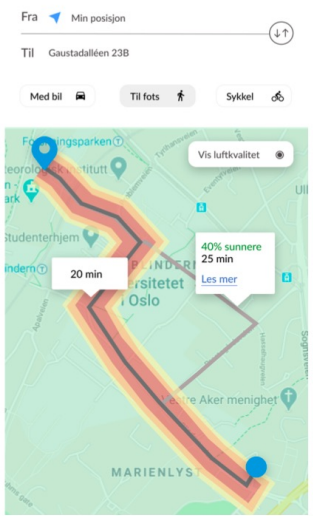




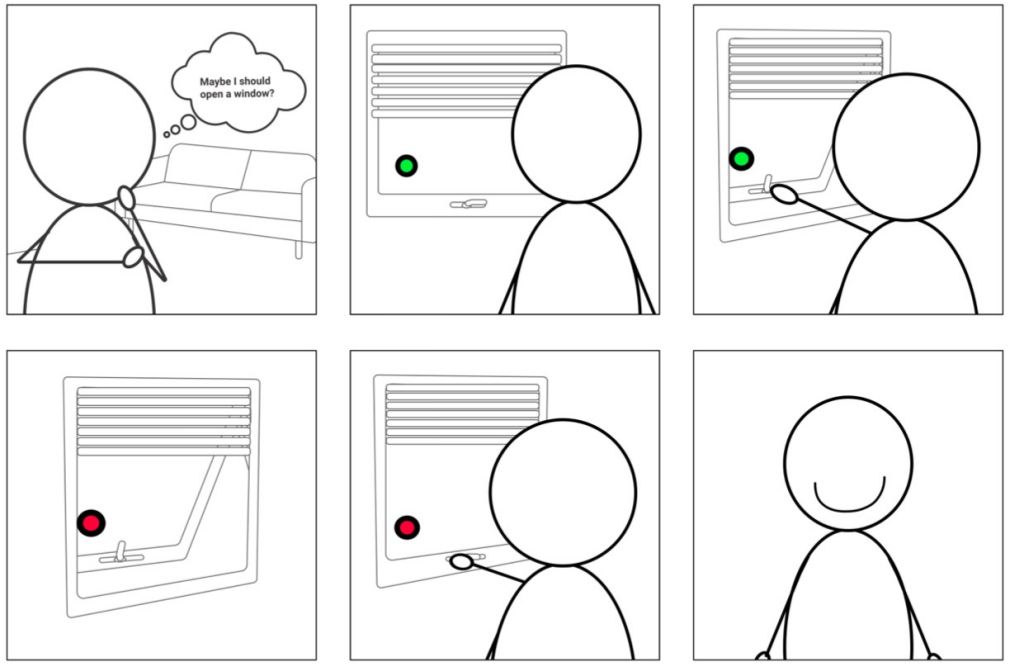








skisser av prosesser



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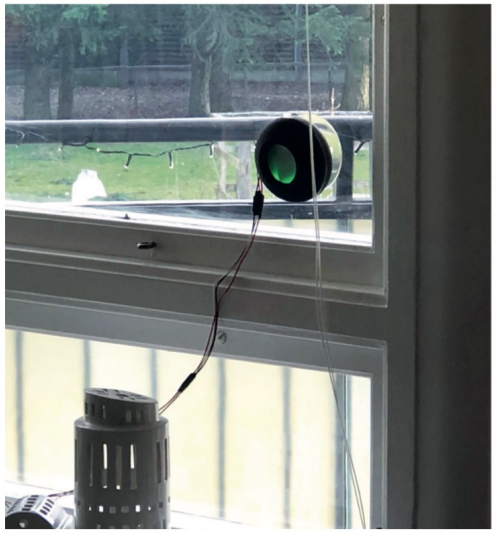
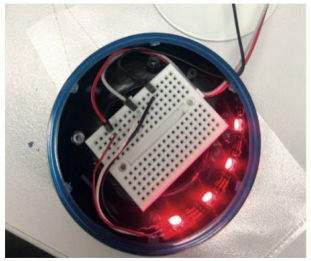
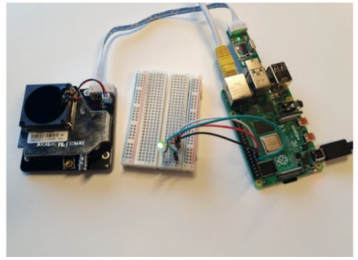
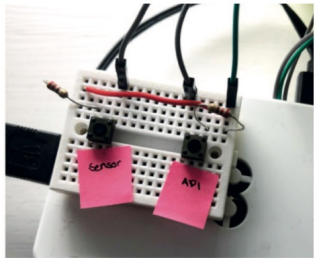








prosessbeskrivelser

UiO : Institutt for informatikk
Det matematisk-naturvitenskapelige fakultet

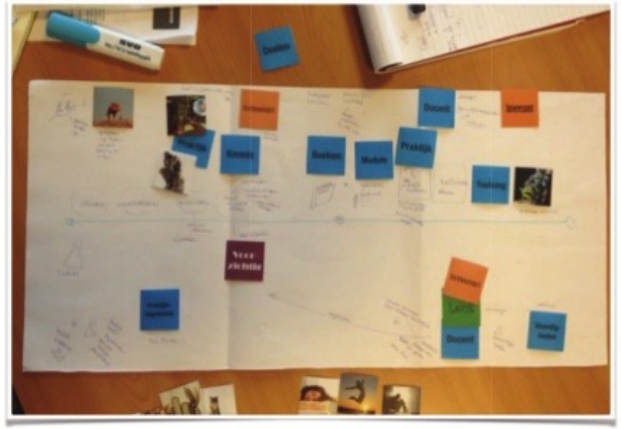
«Hæ? Hvorfor har ingen fortalt meg dette?»

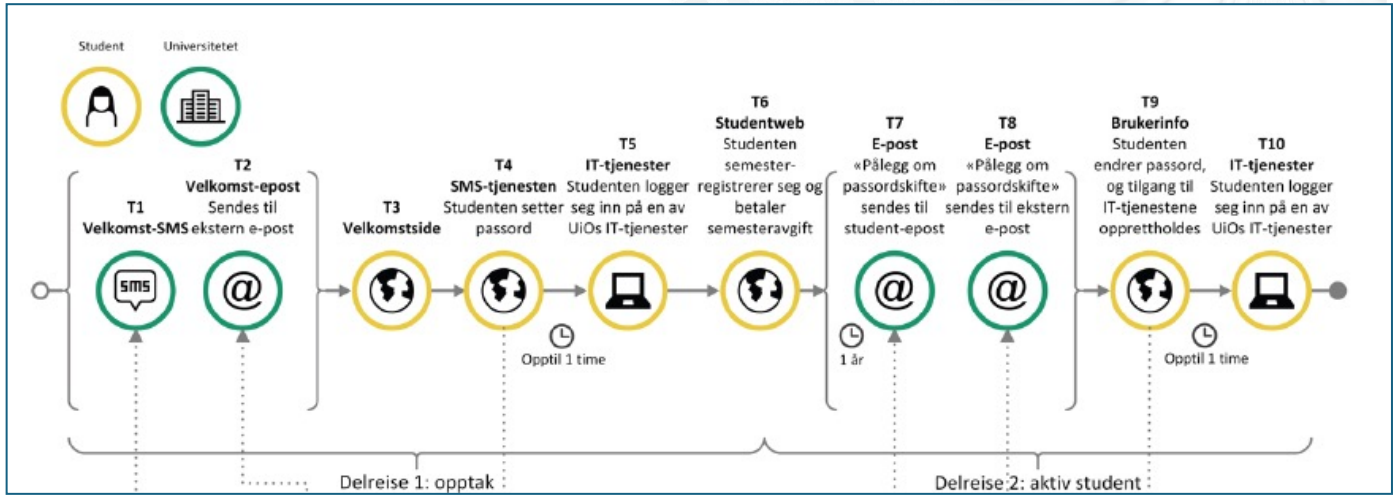
En analyse av IT-løsningene ved UiO i et tjenestedesignperspektiv

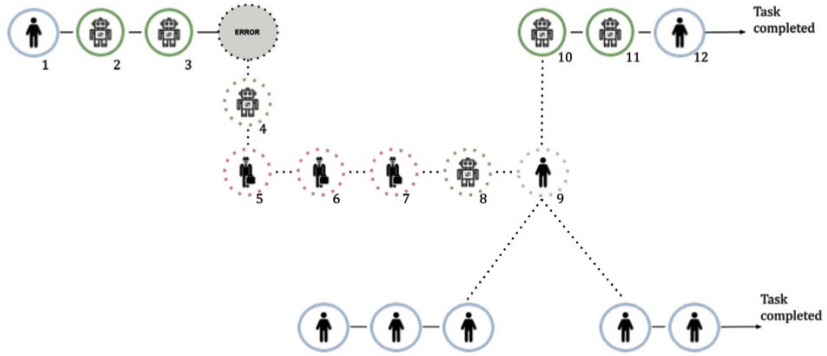
Masteroppgave - Martine Birketvedt Eklund og Seline Tomt - 2016-08

tjenestedesign

- kundereiser ("customer journey")







Human-supported robot work

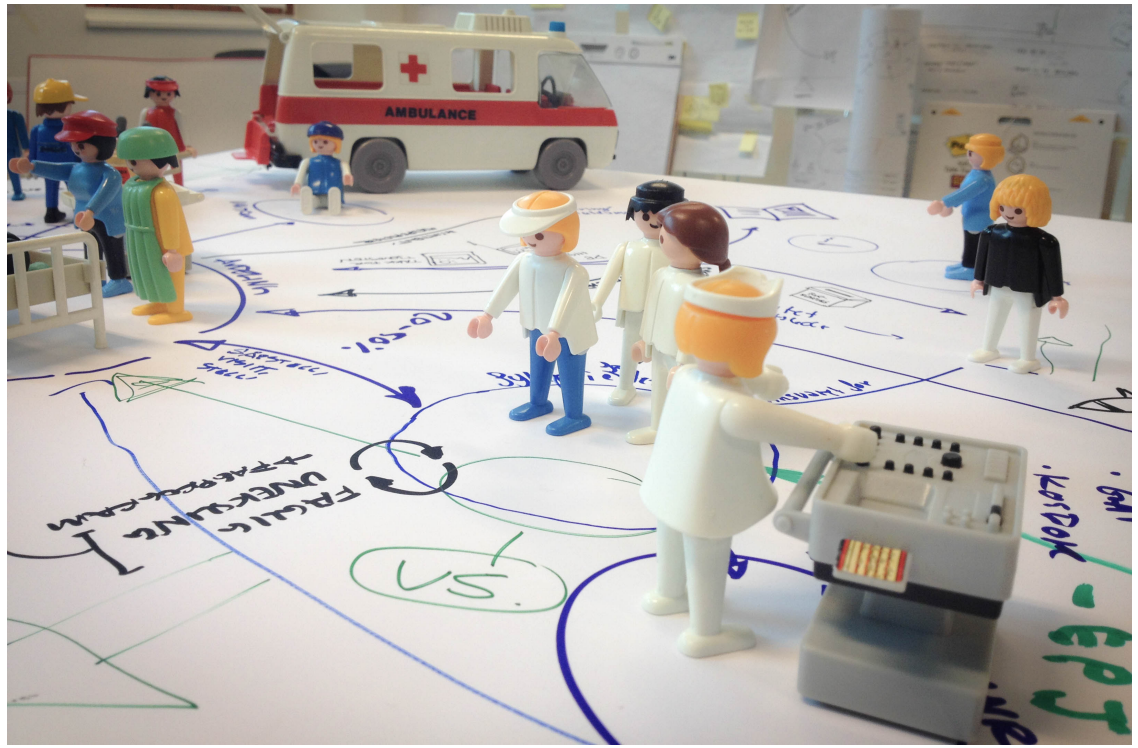
A case study on mobile robots in hospital environments

Johanne Svanes Oskarsen

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

beskrivelser for analyse + som resultat

gigamapping (rike bilder)



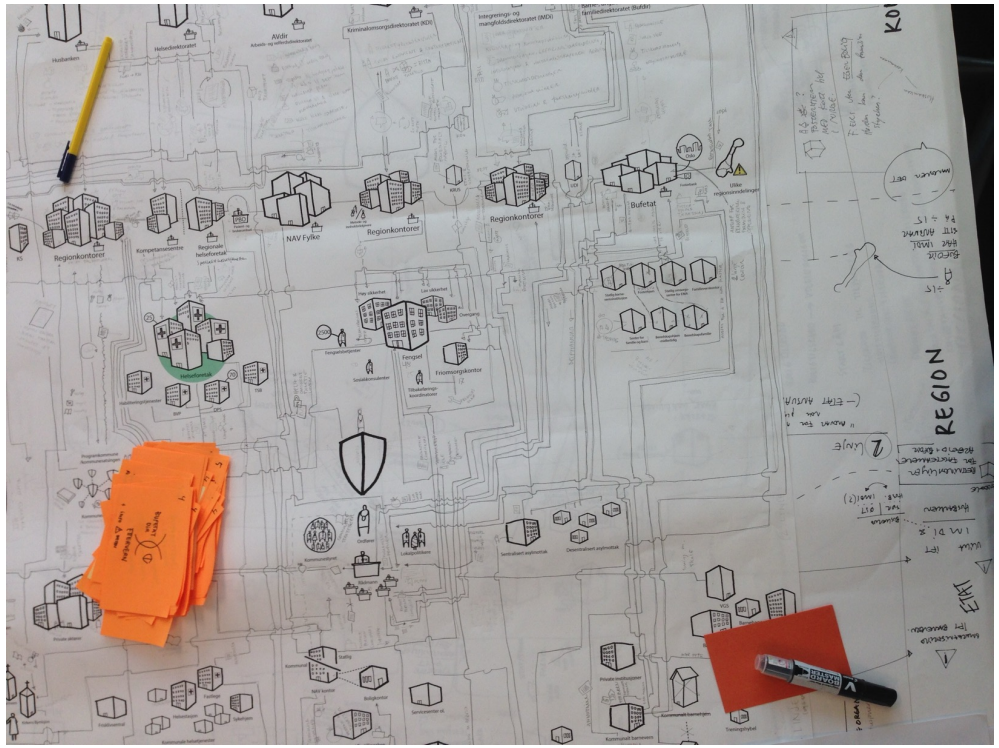


foto: Halogen

gigamapping

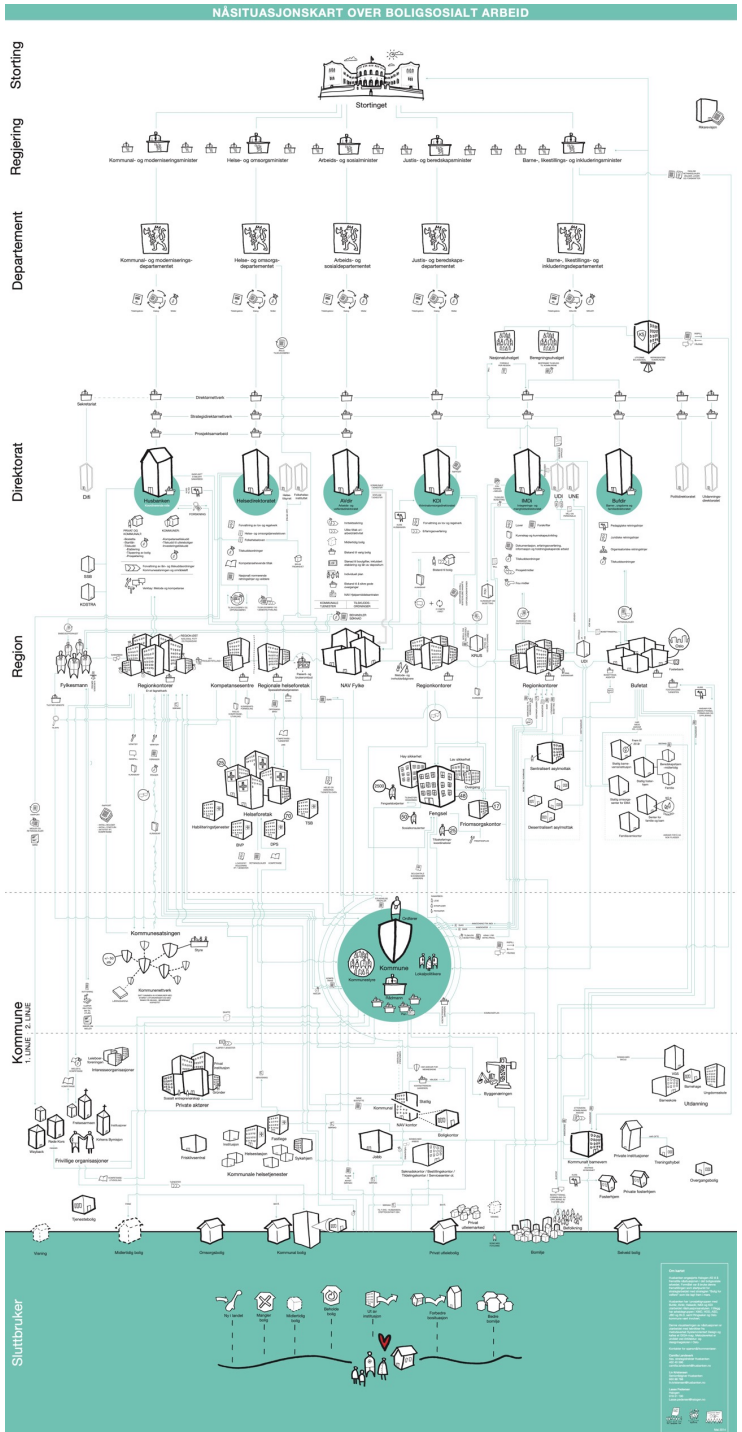


foto: Halogen

Hvorfor prototype

Diskutere

Evaluere

Kommunisere

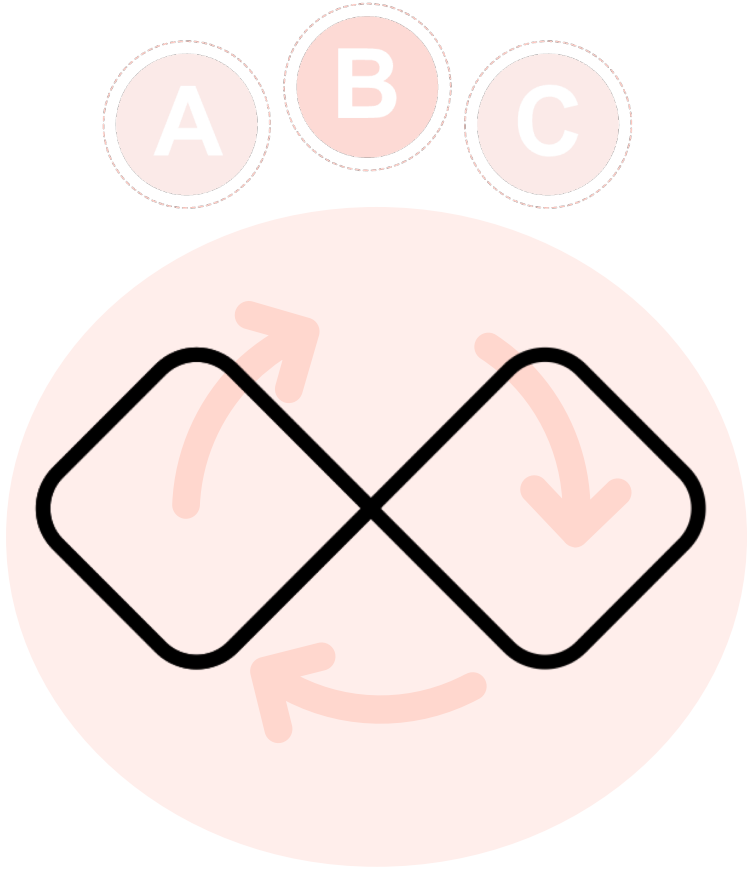
Teste

Utforske

Hvorfor prototype

Hvorfor prototype

Åpner og lukker idérommet

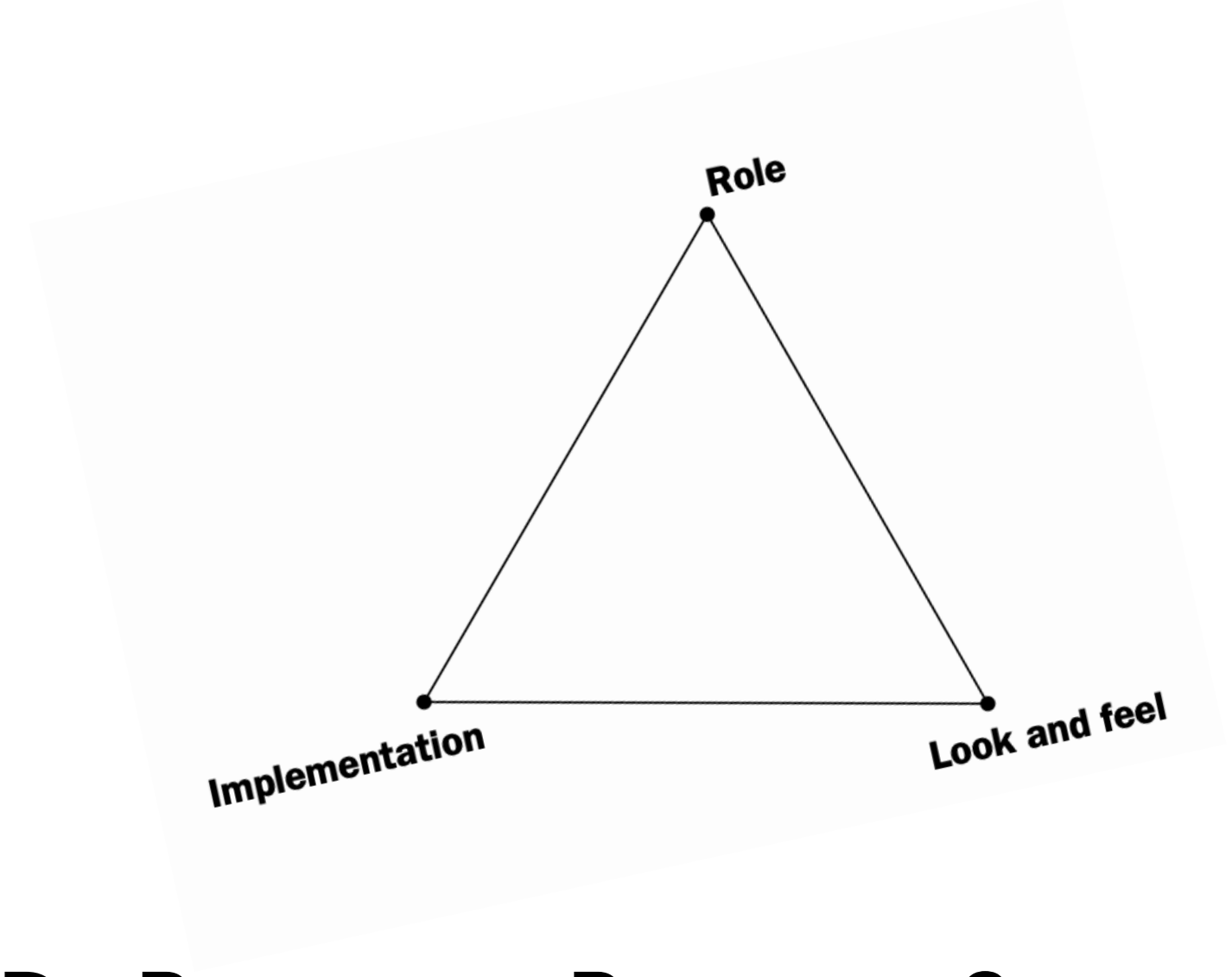


Hvordan snakke om prototyper

- Oppløsning (Fidelity)
- Medium
- Horisontal eller vertikal
- Mock-up eller Wizard of Oz

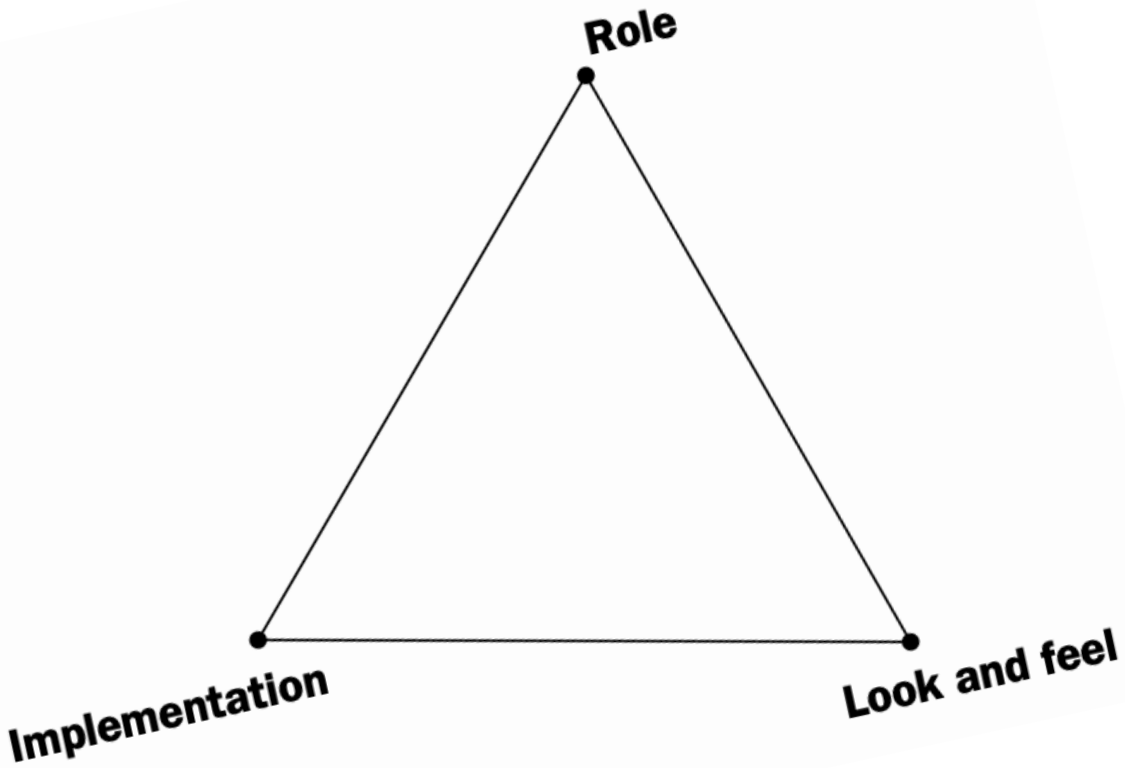
What Do Protoypes Prototype?

Houde and Hill, 1997



What Do Protoypes Prototype?

Houde and Hill, 1997



Hjelp til å lage effektive prototyper

Hjelp til å forklare prototyper til andre

Wnat Do Protoypes Prototype?

Houde and Hill, 1997

Rolle → Funksjon og/eller nytte

Hvilken funksjon skal det nye artefaktet ha i brukers lik?

På hvilken måte er artefaktet nyttig for dem?

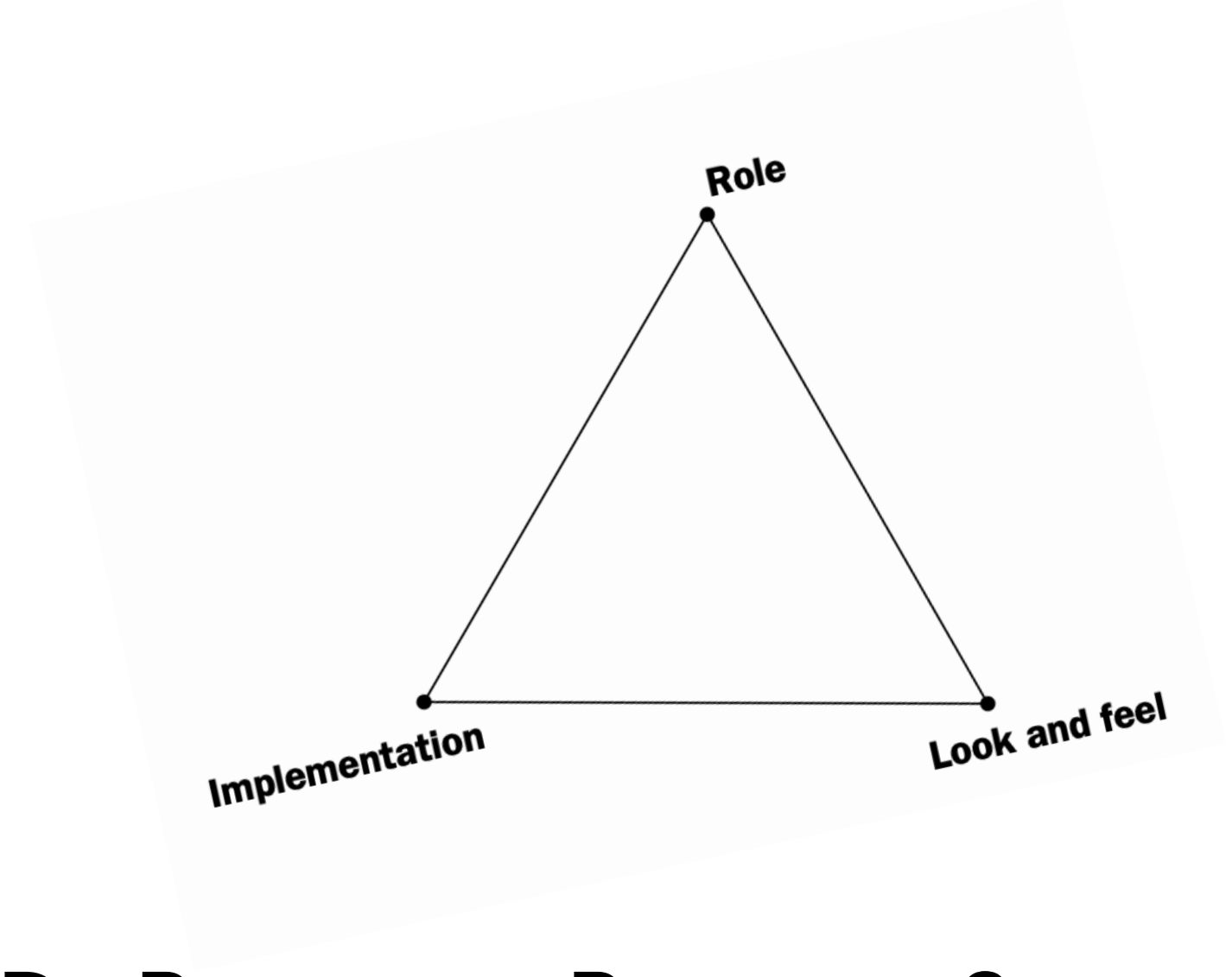
Form → Sanseopplevelse

Hvordan oppleves bruk, rent sensorisk for brukere?

Hva ser, hører og føler de mens de bruker artefaktet?

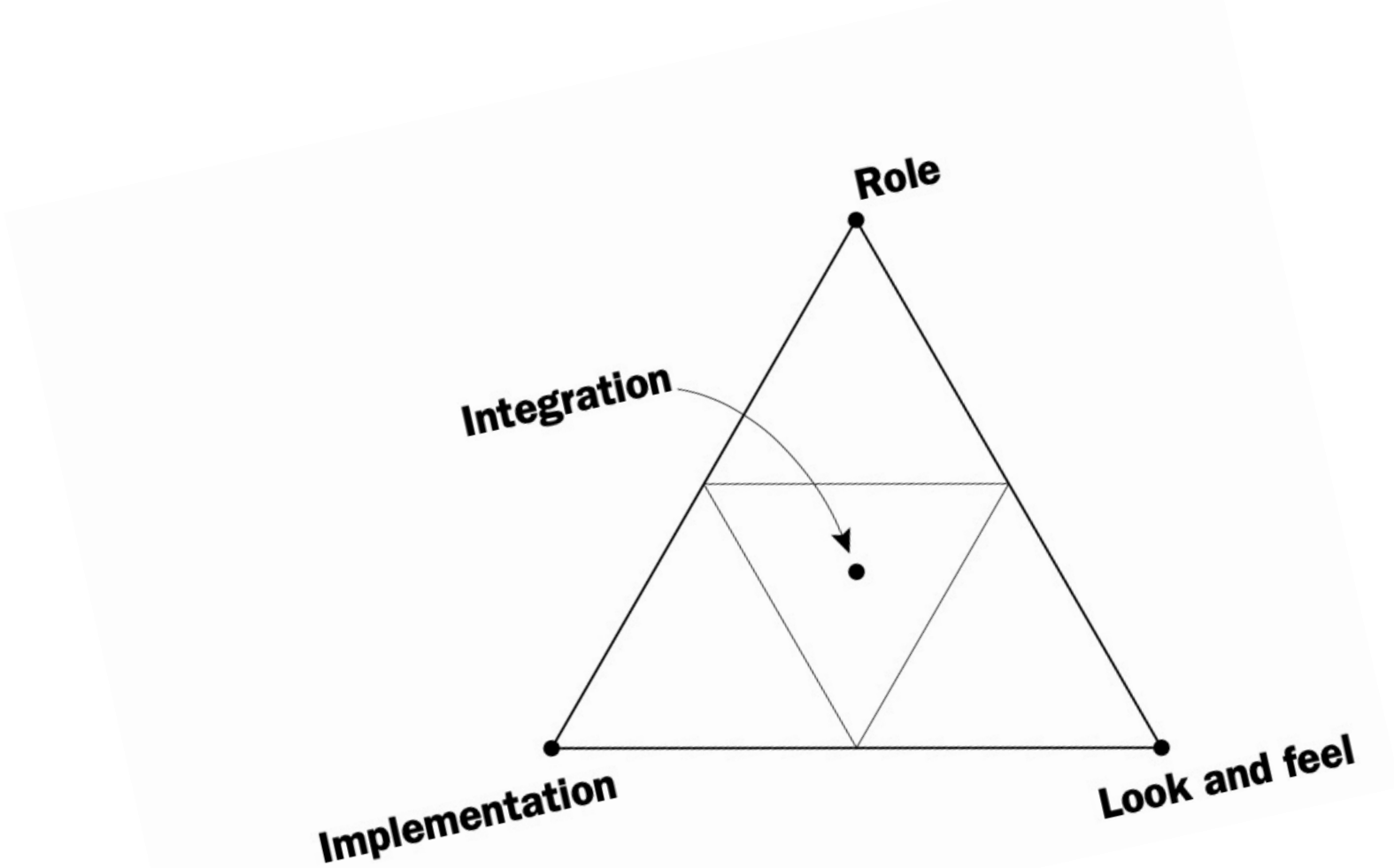
Implementasjon → Virkemåte

Hvilke teknikker og komponenter brukes for at artefaktet skal kunne gjøre det den skal?



What Do Protoypes Prototype?

Houde and Hill, 1997



What Do Protoypes Prototype?

Houde and Hill, 1997

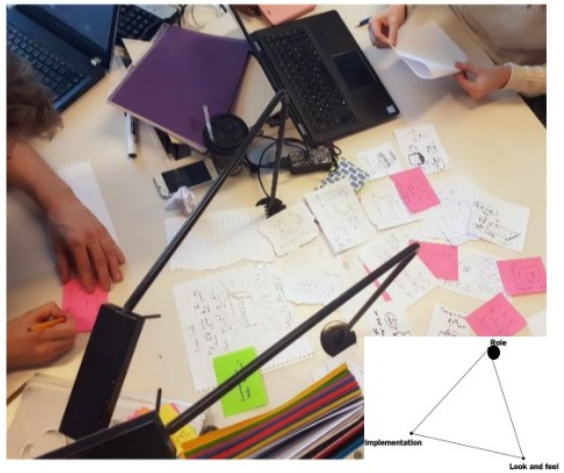
Integrasjon

Rolle, look and feel og implementasjon

Representerer hele brukeropplevelsen og verifiserer designet

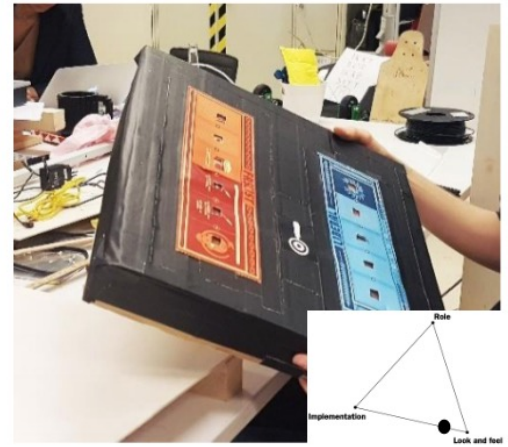
Skal være like komplekse som det ferdige artefaktet, men bør være mulig å «kaste»

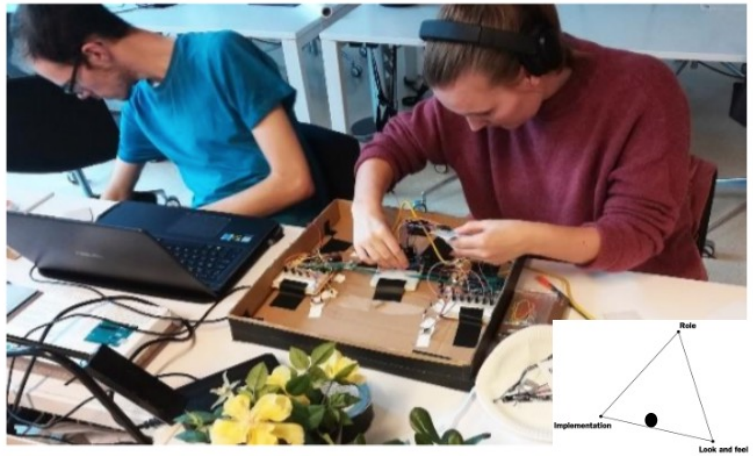
Rolle, look and feel, og implementasjon

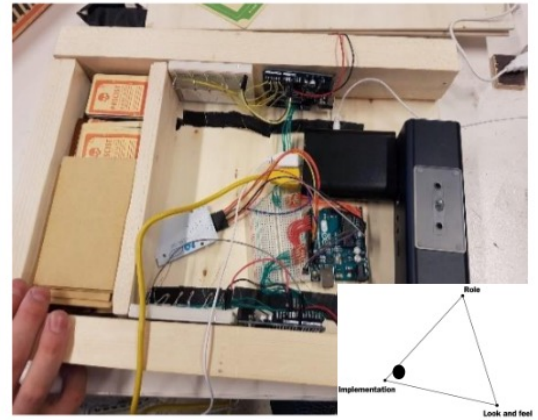

Role
Implementation
Look and feel

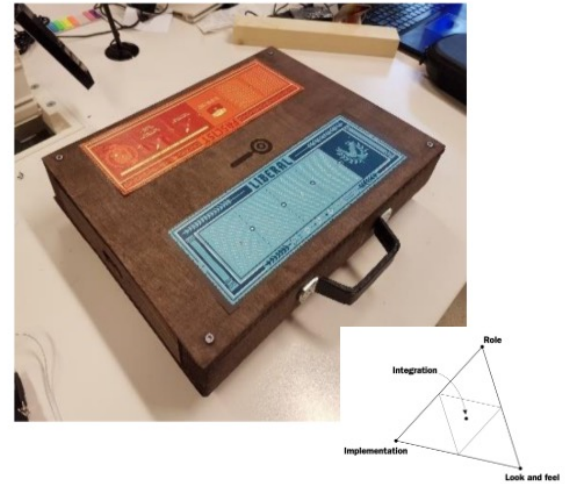

1.
2.
3.
Role
Implementation
Look and feel


FASCIST
Role
Implementation
Look and feel


Role
Implementation
Look and feel


Role
Implementation
Look and feel

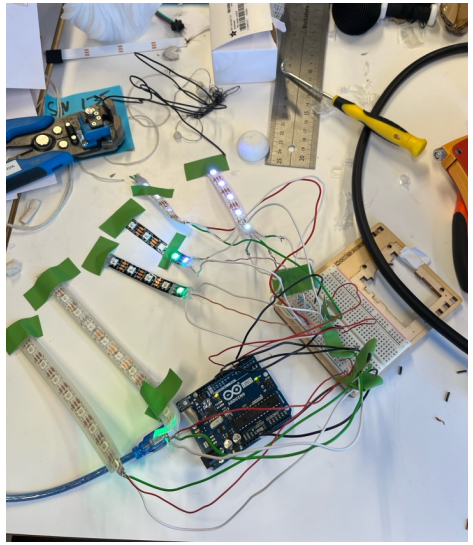

Role
Implementation
Look and feel

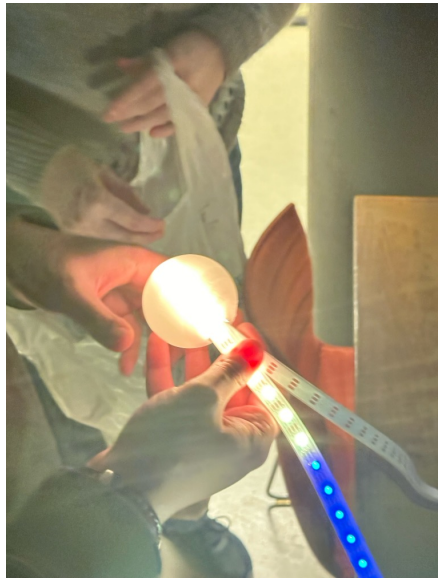

LIBERAL
Role
Integration
Implementation
Look and feel

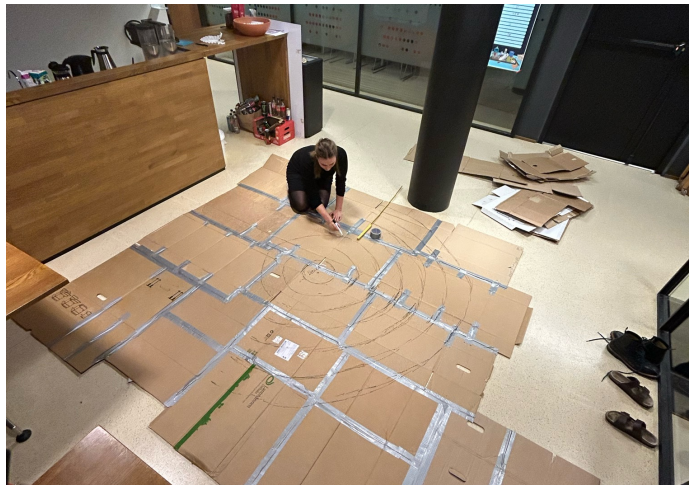
Stellar impact

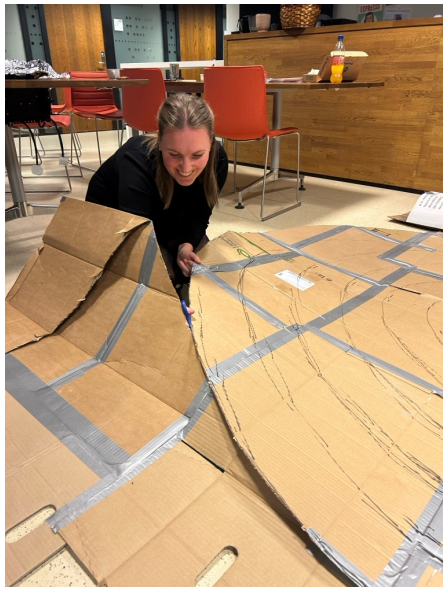
Fem i farta

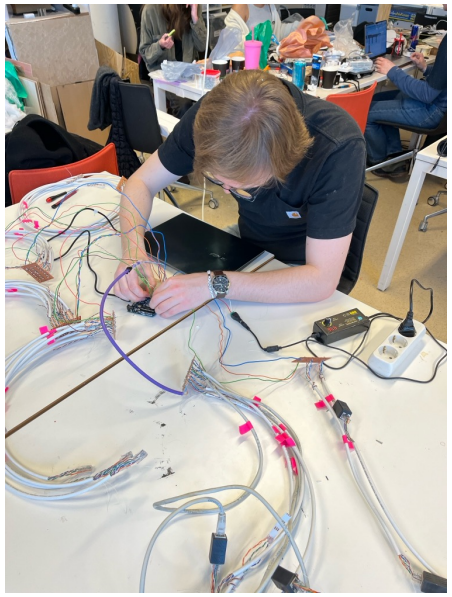

BONÅNZA

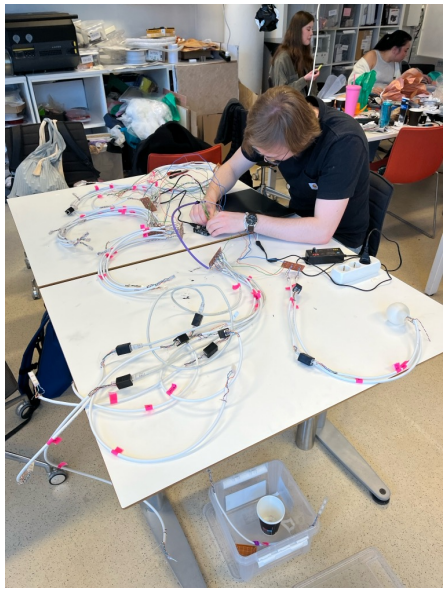




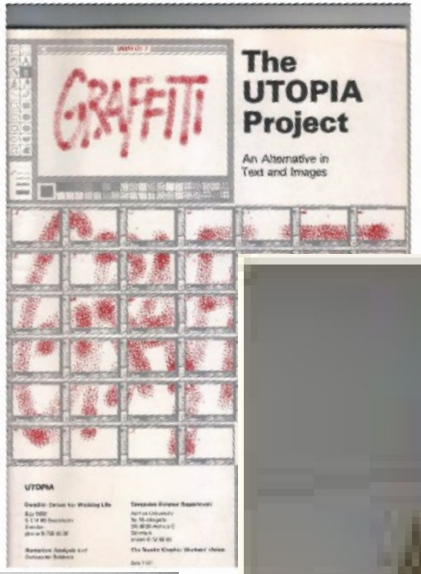


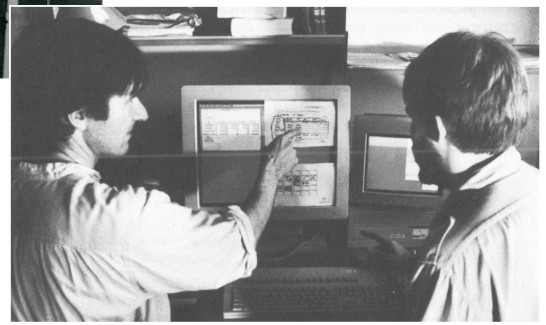


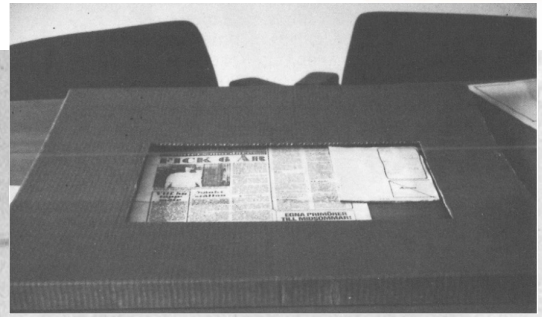




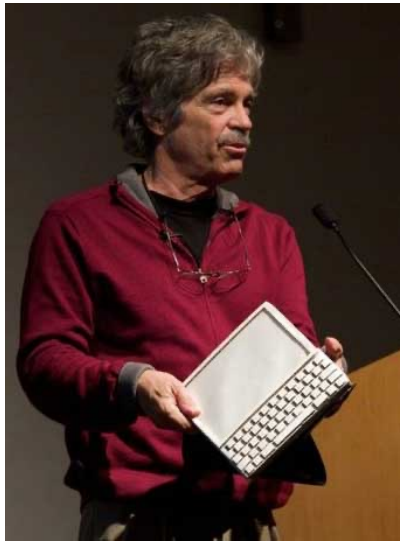
UTOPIA-prosjektet

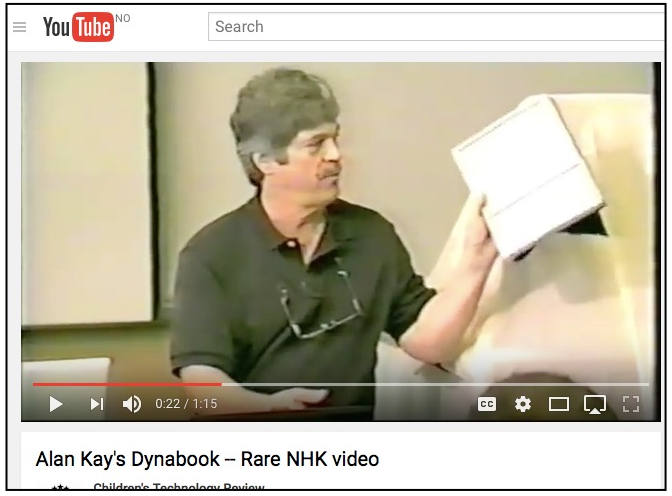


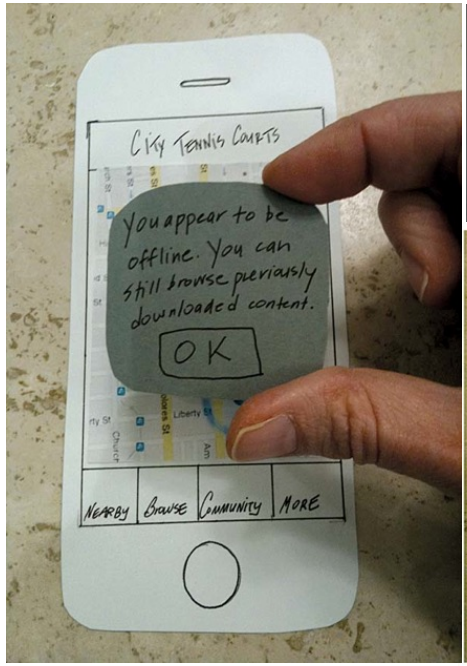


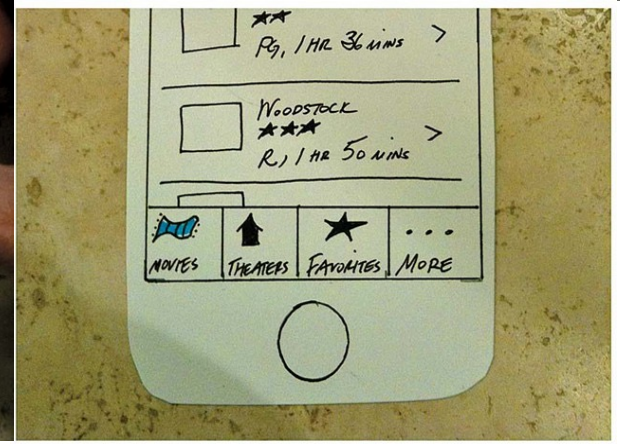


Alan Kay med Dynabook









prototyping med barn

bruk av prototyper i rollespill

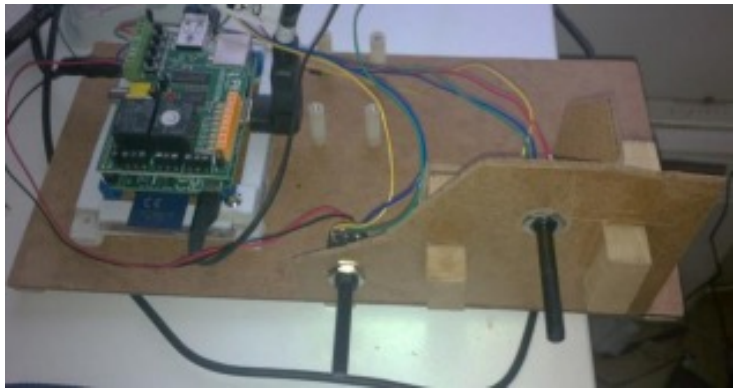
Buchenau & Fulton Suri
erfaringsprototyping – "body storming"

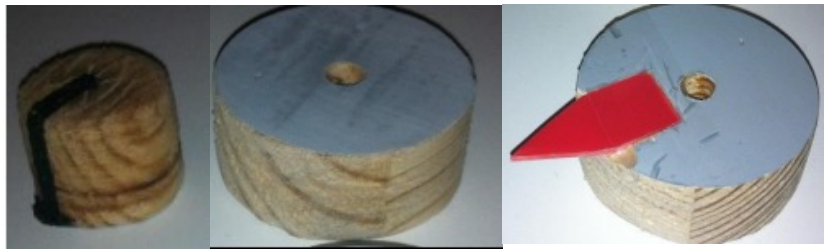
Figure 15 The children's first meeting with the embodied representation of the CA

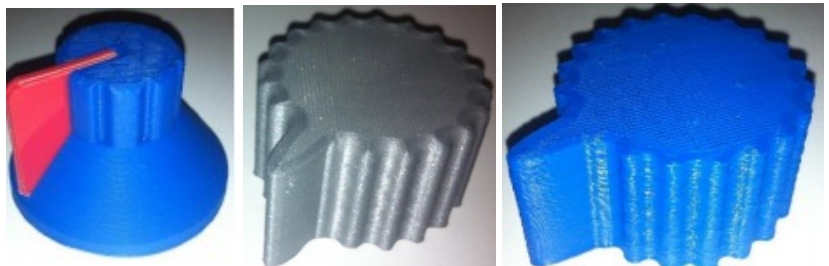
Julie Nilsen Hagen & Kristine Røyneland
"trollmannen fra Oz"

prototyping med eldre

Espen Johnssen m.fl. & Suhas Joshi







Rune Rosseland

Thomas Iversen & Suhas Joshi

prototyping med eldre

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

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

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

Figure 1. Workshop setup

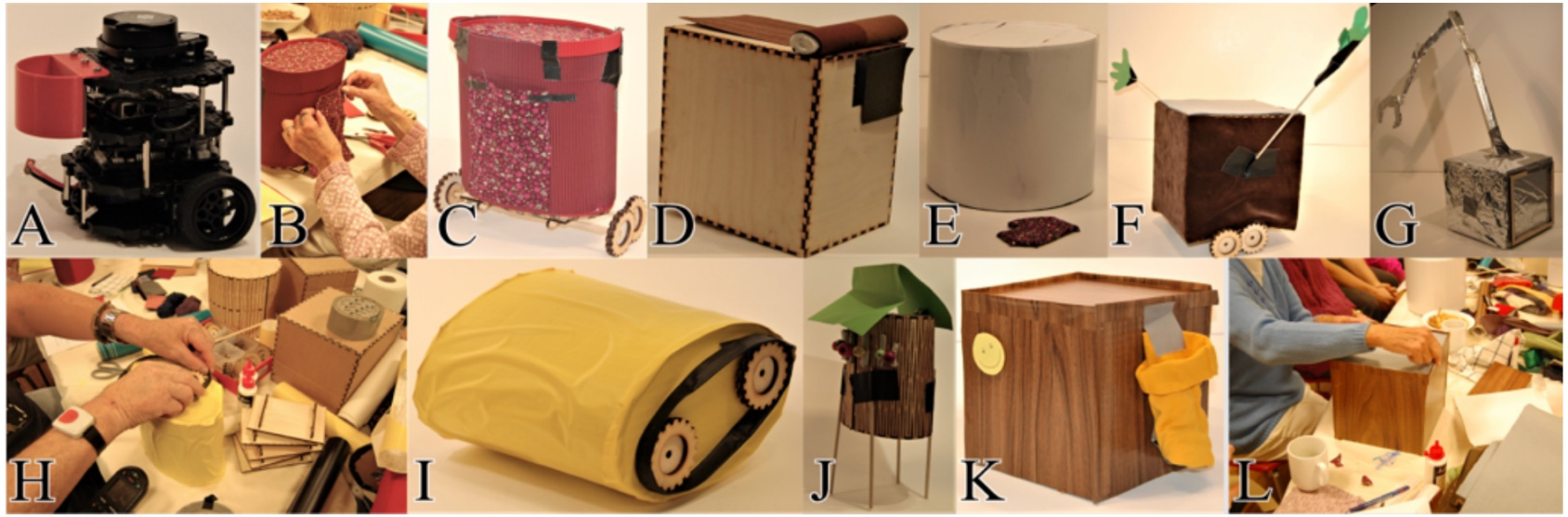

Figure 3. A: "Burger" robot with a 3D printed "backpack" for demonstration, B: Antonella, C: Antonella, D: Brenna, E: Aimee, F: Anca, G: Agelica H: Bruno, I: Bruno, J: Basilio, K: Antonella, L: Antonella

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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


"These things take time"

Unhurried explorations and independent prototypes
In participatory design with older adults

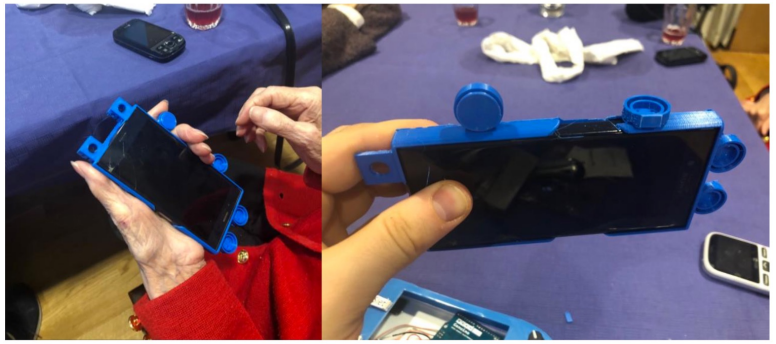
Harald Maartmann-Moe

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

Department of Informatics
Faculty of Mathematics and Natural Sciences
University of Oslo

uavhengige prototyper

prototyper av
Harald Maartmann-Moe



Tips

- Lag mer enn én prototype
- Uferdige «kladder» gir inspirasjon til forbedringer og gjør det mulig for brukerne å delta i designarbeid
- Tilpass prototypen til brukerne
  - Kan de lite om designfaget trenger de kanskje mer høyoppløslig prototyper
- Forklar hva prototypen utforsker og hva den ikke utforsker