Design Thinking and Advanced Prototyping

ELEC-C9821 – Users and Technology

Aalto University
School of Electrical
Engineering

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Today’s agenda

09:15 - 10 Lecture

1. User Study Methods
2. Finalising the Teams

10:15 - 12 Workshop

3. Teamwork: Context exploration & reflection
4. Discussion: User study plans

Learning goals

- Get to know what is a user study method
- Learn about how these can be used in innovation projects through concrete examples
- Learn to evaluate the suitability of the methods for your project

User Study Methods

User study method is a problematic notion.

1. **You do not have ‘Users’ yet because you have no product**
2. **The ‘Study’ is not about thorough and complete research**
3. **‘Method’ is a very ambiguous term**

User study method is a term that we use for convenience

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Aim: Useful Design

If your design does not have an impact on how users get their things done, it is useless.

Design Thinking is not Product Development

- In order to have an impact on users, you need to get your product out to the users.
- It requires product development, business planning, and operative execution.
- These are out of the scope of this course.
- You can learn more in Aaltonaut, PdP, and IDBM.

Aim: Arguably Useful Design

If your design does not have the potential to impact how users get their things done, it will be useless.

No Ideas:

No Users

Who are the ‘users’

- **When we talk about users in the early phases of innovation design (or design thinking), we are talking about the *potential* users of your design outcome.**

The dilemma

If you do not know what is the design object, you cannot know its users.

How to find the ‘users’

- In this project, we begin with the concept of trackable resource
- The next phase will be the exploration into the possible user contexts of these resources

What is a ‘user context’?

- **By the term user context, we refer to**
  - *Users as personal beings*: Their attitudes, capabilities, values, likes, dislikes, thoughts, style, culture, and social relations.
  - *Users as pragmatic agents*: Their work roles, practical goals, activities, problems, solutions, environments, and tools.
- **Perceiving people are ‘personal’ or ‘pragmatic’ has bearing on what kind of approach works the best**

Examples

Pragmatic Case: **Bank’s phone service**

Personal Case: **Freeride Skiing**

Pragmatic: Bank’s phone service

Users as pragmatic agents: Their work roles, practical goals, activities, problems, solutions, environments, and tools.

Personal: Freeride Skiing

Users as personal beings: Their attitudes, capabilities, values, likes, dislikes, thoughts, style, culture, and social relations.

Study for Design:

Relevance over Completeness

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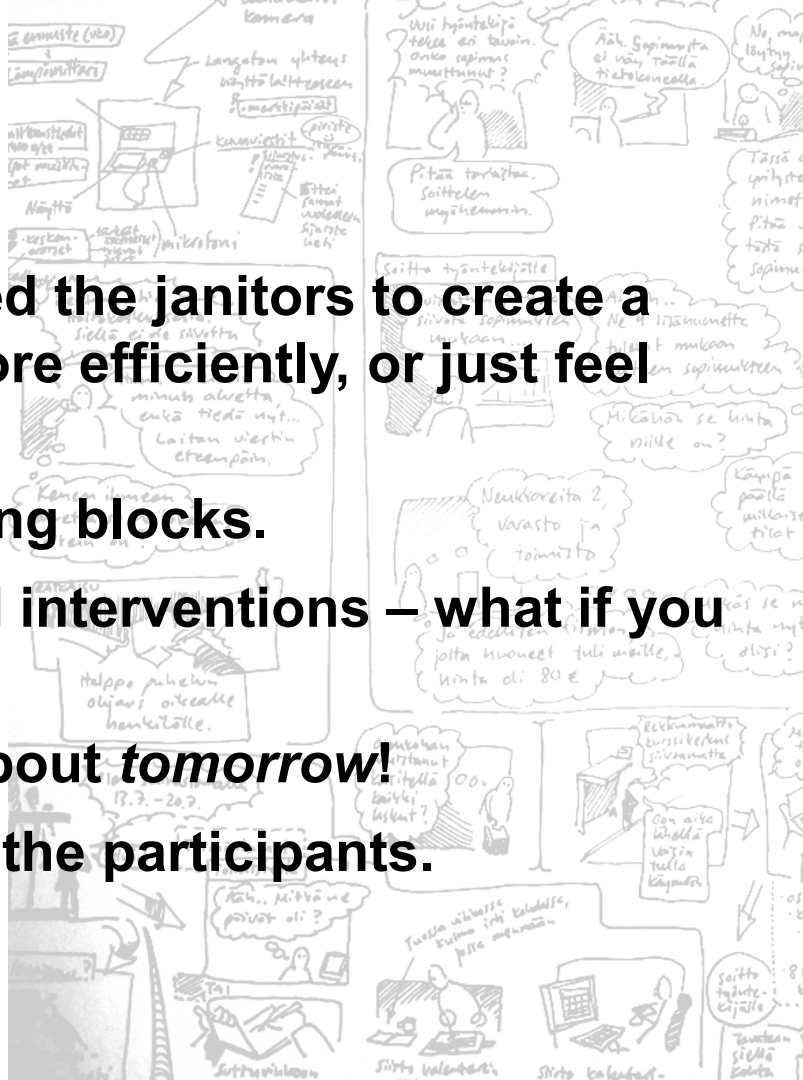
Gaining a complete picture – not worth the effort

- You can study people and their behaviour for long time, like ethnographers do
- You will gain deep understanding of the human domain
- But you may result with zero design ideas

Case: Schoolhouse

- We observed schoolhouse janitors and interviewed them in order to gain empathetic view into their context.
- We gained deep understanding of how they do their work, and what they consider important.
- We got zero design ideas from the visits.
- We learned about *today*, not about tomorrow.

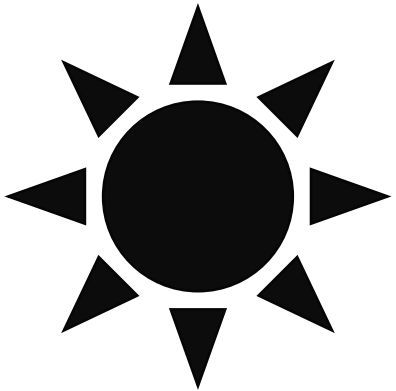
Case: Schoolhouse



- We did another study, where we asked the janitors to create a tool that would help them to work more efficiently, or just feel better at work.
- We provided them with a kit of building blocks.
- Then we went to observe, and we did interventions – what if you used your new tool?
- We came back with tens of ideas – about *tomorrow*!
- Ideas that were certainly relevant for the participants.

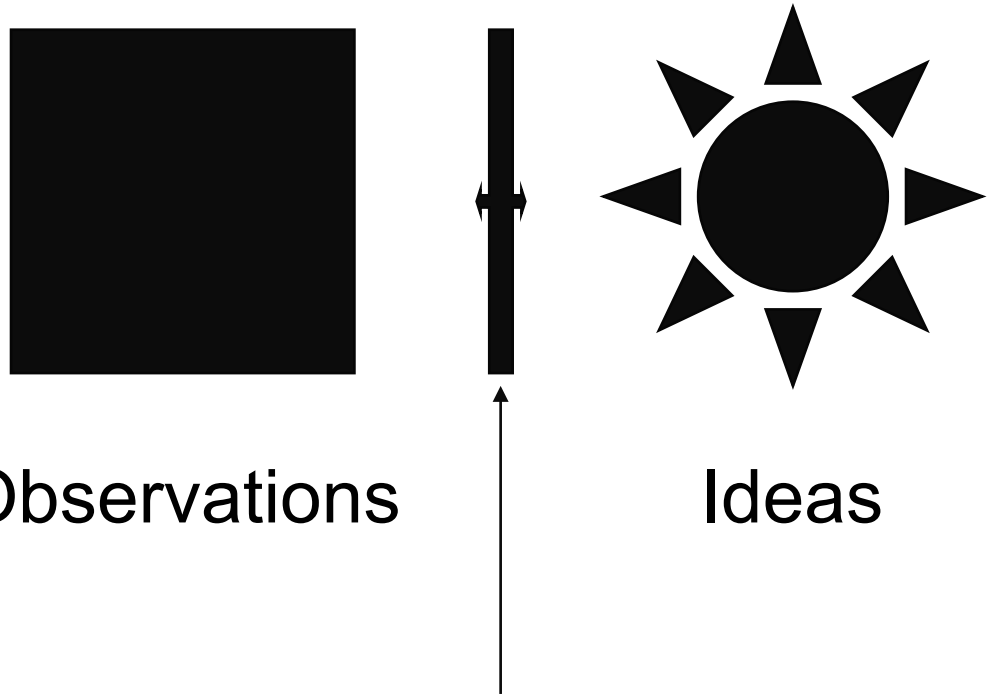
Gap between observations and ideas

Observations



Ideas

Gap between observations and ideas



Aim for relevance

- When working together with the potential users, design the activity so that you will create something useful for your project.
- Keeping the gap short between observations and ideas ensures your process stays relevant to design.
- The longer you have time, and better resources for the study, the longer you can keep the

Not a recipe:

What is a method?

Method

- *“Methods are a set of activities embedded in a particular environment, with participants, materials, tools, and a general direction, or a goal: what to achieve.” – Ylirisku & Buur, 2007*

Ylirisku, S., & Buur, J. (2007). *Designing with Video: Focusing the user-centred design process* (1st Edition.). Springer.

User Study Methods

- **User study methods**
  - Questionnaire, Interview, Observation, Co-design, Probing

Questionnaire

- **What: You give a form for people to fill in**
- **Pros**
  - Quick & easy to share
  - Possibly reaches many (>10) people
- **Cons**
  - Limited relevance, you only get what you ask
  - Not good for empathy building

Interview

- **What: You go to chat with people**
- **Pros**
  - You will also get surprising stuff, and more elaborated answers
  - Can adjust questions on the fly
  - Good for empathy building
- **Cons**
  - You get only talk = what people think (not what they do/dream)
  - You may need to physically travel to users' site

Observation

- **What: You go an see how people do things**
- **Pros:**
  - You see how people get things done
  - You see the environment and tools as well
- **Cons**
  - You need to travel to users' site, get permissions
  - Documentation is hard, and results easily in a lot of excessive data

Co-Design

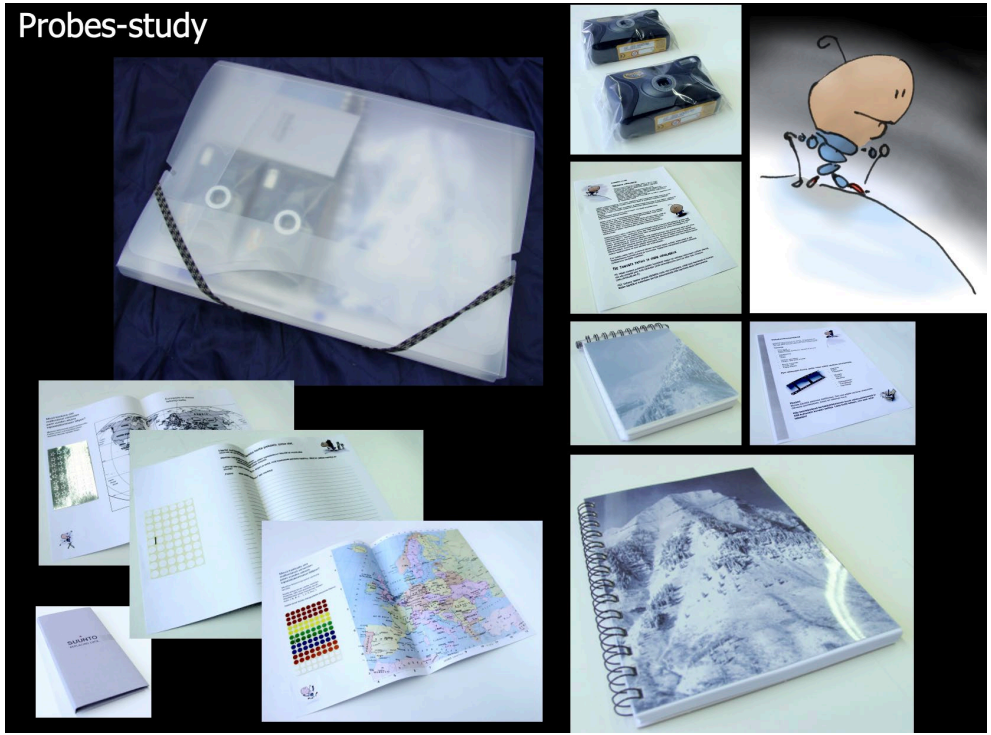
- **What: You ask people do design with you**
- **Pros:**
  - Results in ideas that are relevant to users
- **Cons**
  - May require quite a bit of facilitation

MakeTools / Liz Sanders

Design Probing

- **What: You ask people to do assignments (self-documentation)**
- **Pros:**
  - You can reach activities that would not occur during your visit
  - Self-documentation enables people to start thinking about their activities from the point of view of your project prior to interview
  - Makes people more ready for co-designing
  - May support creation of empathy-encouraging materials
- **Cons:**
  - Time and resource-intensive

Design Probing



2003

Ethics – Get permissions!

- **Make sure you are allowed to be / document stuff at the location where your study happens**
- **Make sure to ask for informed consent**
  - This means that you need to clearly explain what you do, and how you are using the data (e.g. videos, images, audio)
  - Users should be able to quit the study when they feel so
  - If you document, you need to ask explicitly, if they are ok with you documenting the stuff.

-- Presence Check --

Finalizing Teams

Workshop Part I

User Contexts

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Workshop Part 1 – User Contexts

Based on your work on the ‘trackable resources’ make a similar mind map – but now starting from the most interesting resources.

For example:

- Trackable resource: “Lego blocks”
- Create a mind-map, who would be the potential users of tracking Lego blocks (the kids playing, or parents stepping on them)

Do not yet think about your application too much.

Reflection

Workshop Part II

User Motivations

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Workshop Part II – User motivations

- Choose 3 most interesting user contexts / users
- What do they want about the ‘resources’?
- What do you think is their problem related to the resources?

Reflection

User Study

User study plan

- **What is your intended user group**
- **What would be your user study method(s)**
  - You will need to involve at least 4 users

Learning Diary

- Reflective & reflexive writing
- 400-600 words weekly to keep up the rhythm (deliverable periodically, 2400-3600 words)
- Show your exercises & project work
- Be visual (+ integrate images to body text)
- Read and cite academically (=IEEE or APA format)

Learning Diaries

I read through the 15 diaries that were submitted.

I am proud of the very high quality of the diaries!

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Please, keep writing the diaries weekly.

This week

- **Write your diary and submit it**
- **Submit your Team Agreement via e-mail (unless done)**
- **Submit your Team's User Study Plan**
- **Start the exercises (Fri 14-16, Mon 14-16, Tue 10-12)**
  - in Vilhon Paja Lab (former Sähköpaja)