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Portfolio

An in-depth look at my master thesis project, plus some miscellaneous work.

Process

The process of my master thesis project consisted of 6 steps in an iterative manner. These steps were based on the HCI-Recipe which spills a design process into four steps needed in design thinking. These are Establishing Requirements, Designing Alternatives, Prototyping, and Evaluation.

#	Activities	My role
1	User ideation session & inspiration card workshop	Planning and conducting workshop/ Data analysis
2	User co-design session	Planning and conducting co-design session/ Data analysis
3	Creation of initial prototype	UI Design/ Prototyping
4	Deployment test	Contacting participants and interviews/ Data analysis
5	Brainwriting & Jigsaw puzzle prototyping w/ users	Planning and conducting workshop/ Data analysis
6	Creation of final prototype	UI design/ Prototyping/Conceptualization

Project Road Map

Prior to the project, a pre-project was conducted in which the primary focus or prior rather than environmental impact was chosen, during this project the focus arose as energy utilizing in a means of usage and in each step chosen.

Initial Goal

Design an app that helps people reduce the economic impact of their electricity usage through shifting.

Iterative Design process and prototyping

User study

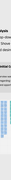
1. How do people use electricity?
2. What challenges exist in regard to understanding electricity usage?
3. What do people currently do to manage their usage?
4. What is important to people in regard to this?

Turn findings into three concepts for evaluation

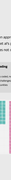
Co-design / Evaluation session

Created three concepts that appealed to different characteristics put forth by the users in the initial study, and had the users discuss and evaluate them in regard to how useful they would be for their own needs.

Users liked the simplicity but found that it lacked control and deeper insight



Users found it too difficult to connection between price and usage, and the app's suggestive features, but found it to be too "spontaneous" and not support longer term planning.



Users liked the overtred usage and price graph, and found it easy to understand. They found the suggestive planning menu, and found the alarm a the other panels to be of lesser importance.

Lastly, the users were tasked with creating their own concepts on A3 print-outs of phones. This allowed them to express exactly what features and data they wished, and how they imagined it could be presented.

Based on this workshop, a prototype was chosen. This decision focused on allowing the users to plan their usage of appliances by being provided with an overview of the electricity price, and motivating action through showing the actual price differences of using appliances at different times.

Create prototype and plan deployment test

Deployment Test

The Prototype

I created a prototype in Figma which, through the use of some plugins, was able to function as a usable prototype for a deployment test. This "description" worked so well that none of the participants realized it wasn't a functioning app.

The prototype is based on the direction chosen as a result of the previous workshop, and displays the electricity price each hour, and how much consumer appliances would cost to use at the selected time. The user can swipe on the graph to see at future hours for which electricity prices have been made available.

The Deployment

The prototype was deployed with six participants across four households for a total of two weeks per household.

During the period they were asked to use the prototype in a way they felt was natural for them, i.e. I did not force them to use it for every electricity-consuming activity.

I conducted two interviews with each household, one prior to the deployment, and one afterwards. The preliminary interviews mainly focused on their current usage of electricity, and what they would like and be introduced to the system. The second interviews focused on their experiences with the prototype. Each of these follow-up interviews were recorded and transcribed.

Data Analysis

Using a top-down approach I condensed the interviews into elements in the practice of assisted shifting based on Shove et al's practice framework. These elements describe needs in the practice, and dominate needs and desires not currently met by the prototype.

Initial Coding

Each text was was coded, being colored according to their topics, and assigned codes.

Clustering and Categorization

Similar codes are clustered, and codes are categorized based on the Practice Framework.

Translation into Themes

Each cluster is translated into actionable themes relevant to create a prototype.

Findings

Findings Findings

Finally, I created a final prototype based on the preceding user feedback, and the findings from this. This has affected (and energy-related expenses.

2. A lack of motivational support. As an example, some participants expressed a desire to be able to see the average electricity, explaining that using appliances when the price is lower than the average feels objective "like winning".

Exploration of how to incorporate feedback and motivational support

Brainwriting & Jigsaw puzzle prototyping

For this final study, I conducted three combined brainwriting & jigsaw puzzle workshops with just two participants each.

Brainwriting

The participants were informed of the goal of the project, and the specific workshop, before being tasked with creating two simple concepts that related to any way possible to either motivational support or performance feedback. Afterwards, the participants would present their ideas to each other, before creating a poster, and create three more ideas based on the other participant's ideas.

The primary goal here was to get them into the right head space, and to get them to consider what they believed to be important before continuing with the second task, the jigsaw puzzle prototyping.

Jigsaw Puzzle Prototyping

This is a slightly strange, but pretty effective way of getting people to express their thoughts, ideas, challenges, and needs related to a subject.

The participants are given an A3 print out of a phone, a set of generic components, and a couple pens, and asked to create a prototype of the system.

The A3 size makes it so that all of the prototypes are nonsensical (it was, but that's not the point. The playful nature of the activity managed to lead the other half of the participants, with one group showing with their prototype for 45 minutes, and to the end each saying had created something which, when they then presented, documented a deep insight into their wants and needs.

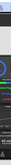
Final Prototype

Finally, I created a final prototype based on the prototype used for the deployment test, with alterations based on the findings of the deployment test itself, and the brainwriting/jigsaw workshops.

Created through an iterative process consisting of three steps. While it took quite a few iterations to get to the final design, I have learned a lot about the importance of the workshop and the importance of including users for the learning and workshop data created with primal with and pen paper. A digitally HI-fidelitarian, both of these data sets contributed to Figma.

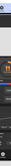
Sorting

Participants were given a stack of cards with different components (phones & plants) connected with how their mind thought they should be connected. Participants were encouraged to explain why.



Brainwriting

Participants were given a set of ideas, and were tasked with taking inspiration from the ideas, and creating their own ideas. Some ideas were not relevant, but this is a fair cost, because with needs and functionality in the mind.



Jigsaw Puzzle

Participants were given a set of components, and were tasked with creating a prototype. This was a fun way to get people to express their thoughts, ideas, challenges, and needs related to a subject.

Final Prototype

Based on the workshop, I created a final prototype based on the prototype used for the deployment test, with alterations based on the findings of the deployment test itself, and the brainwriting/jigsaw workshops.

Other Projects

The following, contains examples of collage, research presentation, UI/modeling, and conceptual illustration. Enjoy!

Study Space Spotter

An interactive map designed for, and in collaboration with, Aalborg University Library. Allows users to find study spaces that match their HI specific needs. Intended for a 40" screen in portrait.

For this project I conducted interviews with representatives from the library, created a set of user personas, planned, conducted, and analyzed usability tests, and took part in the final design of the system.

The International Student

The Casual Group Worker Student

2 of 6 simple personas I created for my project with Aalborg University Library.

Based on interviews with users of the library and the staff.

Habit@

Habit@ is an example of some of the 3D-modeling and physical prototype creation I have done. It is a small device that sits on a surface, and is used to track the duration of tasks. Created using SolidWorks

STRNGTHN

A personal passion project I have been following one for a while.

STRNGTHN

It also comes in dark mode!