

HUMAN-PRODUCT INTERACTION

FROM A DESIGNERS PERSPECTIVE



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ANNET HENNINK
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BACHELOR

3 years

IDE

Industrial Design Engineering

MASTER

2 years

IPD

Integrated Product Design

DFI

Design for Interaction

SPD

Strategic Product Design

Some of My Projects

New Product Line for Royal Delft



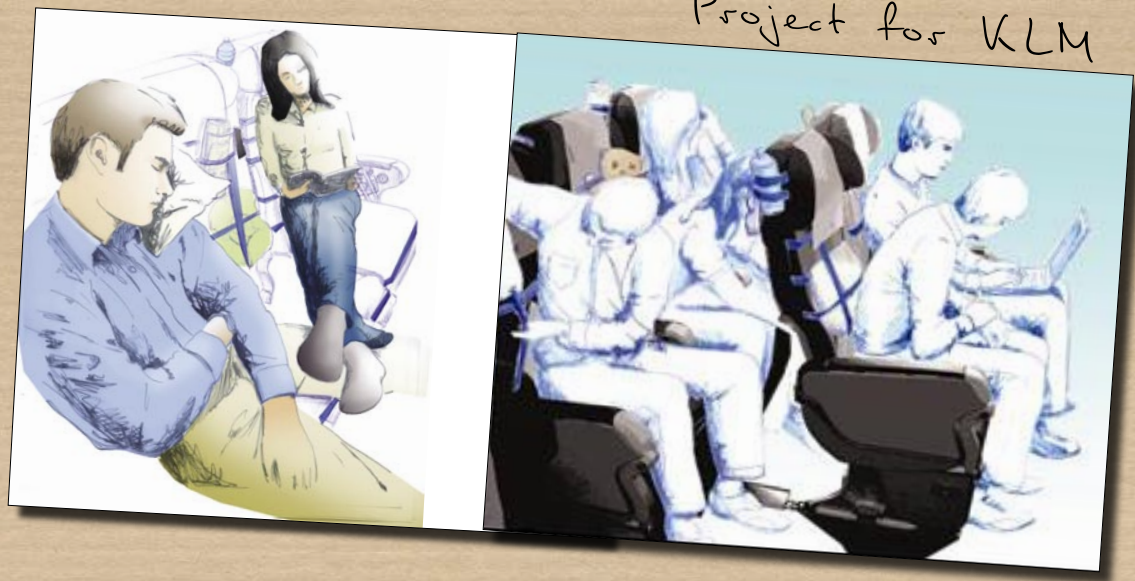
Cylindrical Remote Control



MSN on Mobile Phone



Project for KLM



Some of My Projects

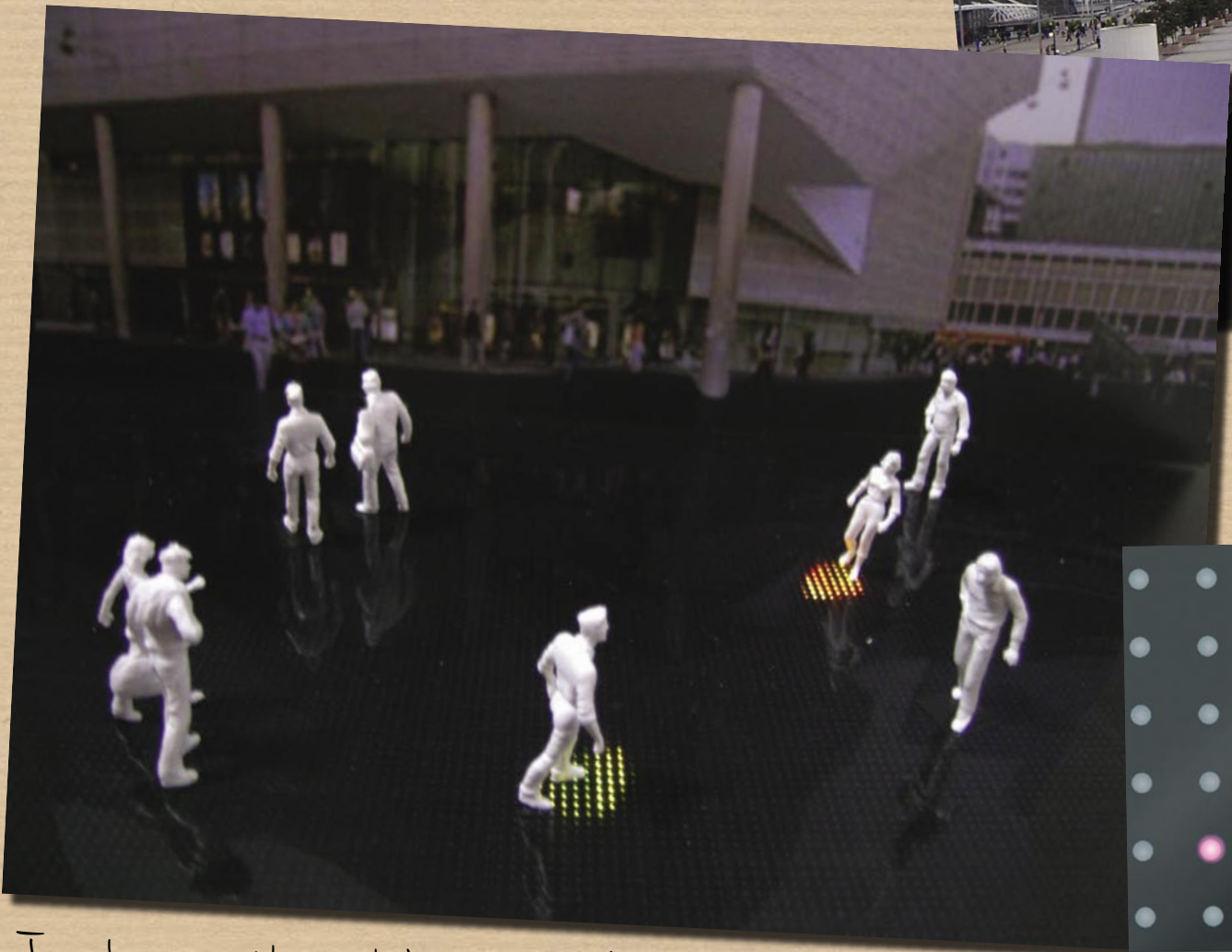
Large Public Displays



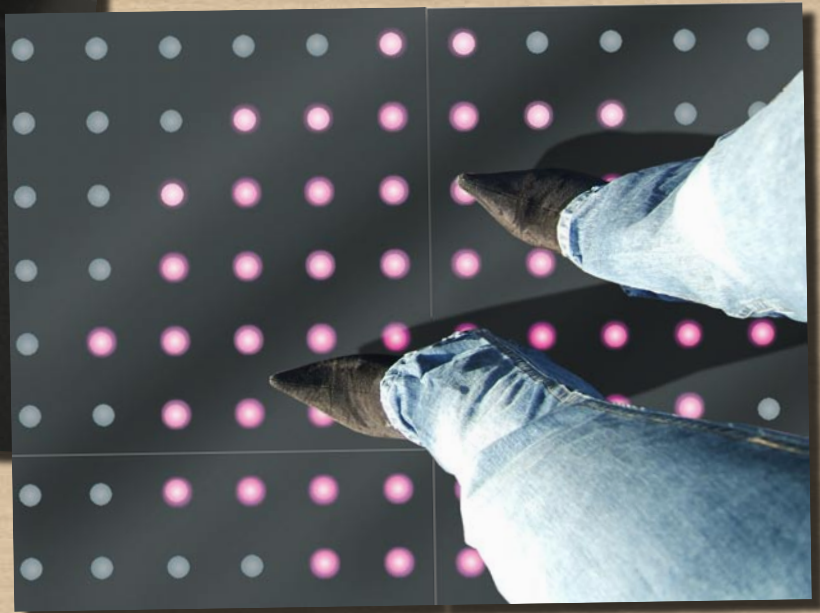
Interactive Tiles



Randomly Connecting People



Touch sensitive tiles with LED lights in them



Interactive Tiles

Random Connection

by Annet Hennink

DECREASING THE FEELING OF ANONIMITY IN
A PUBLIC URBAN STREET BY STIMULATING
PEOPLE TO EXCHANGE A KNOWING GLANCE

Especially Made For You!

Tangible Music Players for Different Personality Types

MYERS-BRIGGS TYPE INDICATOR

Extraversion - **I**ntraversion:
flow of energy

intuition - **S**ensing:
taking in information

Feeling - **T**hinking:
making decisions

Judging - **P**erceiving:
dealing with the daily world

ENFP

The image displays a grid of 48 small photographs, each showcasing a unique, tangible music player designed for a specific personality type. The grid is organized into a 6x8 layout. The letters N, S, I, E, P, J, T, F, T, P, J, P are printed along the top, left, right, and bottom edges of the grid. The central image, 'Mood Status', is circled in red. Each image includes a title and a brief description of the device. Other titles include 'Around the Corner', 'Lay 'n Listen', 'Turn on my music', 'Grab It', 'I Found a Shell', 'Dancing the Boal', 'A-peeling Music', 'Sea Bird', 'Boost my Surf!', 'Punch the Pillow', 'Screening Music', 'Push It Up', 'Bounce Me', and 'Music Facet'. The designs are diverse, ranging from handheld devices to floor-standing speakers and interactive wall-mounted units.

Especially Made For You!

From theory to ideas

Spencer

Excited
Passionate
Enthusiastic
Full Of Potential
Idealistic
Great People Skills
Open-minded

ENERP

Spencer is an active, passionate 45 year old man, who inspires many people. He is admired in his personal life by his enthusiasm and interest in others and in his career by his focus and idealism. He has a high potential in his career and he is recently chosen as the chairman of D66.

He has many friends so also his social life is dynamic. Although he can't always find the time to spend as much time with his friends as he would like to, he is always there when someone needs him ready to give a helping hand. He is always into new things, like setting up an education program for undeveloped schoolchildren or preparing an ocean sailing trip with two of his friends.

He is married and he has two children of 10 and 13 years old. He saves every Sunday to spend time with his family to go sailing, visiting a city or he cooks an elaborate dinner for them.

Spencer

'I choose my music according to my mood. I have different moods, so imagine the size of my music collection.'

ENERP

<p>CONTEXT</p> <p>Varying Location Active Intellectual Quality Time</p>	<p>INTERACTION</p> <p>Mentally Challenging Enthusiastic Intense Moving</p>	<p>PRODUCT</p> <p>Stimulating Adjustable High Quality</p>
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Mood Statue

turn the ring around the speaker to play the next or previous song.

choose the music that fits your mood by putting a sculpture on the soccle

the soccle is made out of natural stone

in the box the different sculptures can be taken anywhere

volume button

Open box and place on that represents music style on holder

Enjoy!

A soccle stands in all the rooms where you want to play your music. All you have to do is take your pretty wooden box with mood sculptures and place the appropriate one on the statue in the room you're in, in order to play a particular playlist. Every sculpture represents a different mood. You can choose yourself, which statue represents a particular mood best.



Especially Made For You!

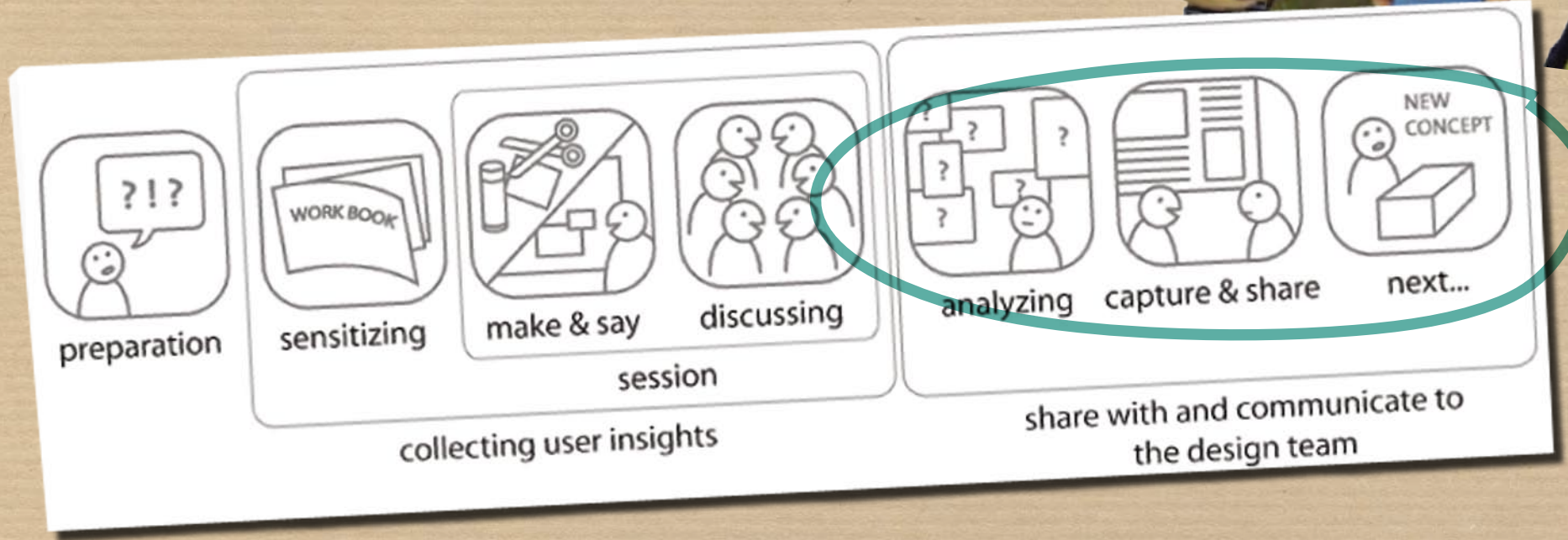
First test
4 out of 19 participants preferred the music player that was designed for them. (significance $p=0.022$) The remaining fifteen subjects selected an 'almost right' player.

IT IS POSSIBLE TO DESIGN FOR DIFFERENT PERSONALITY TYPES!



Rich Visualizations

Making user data inspirational for designers



Rich Visualizations



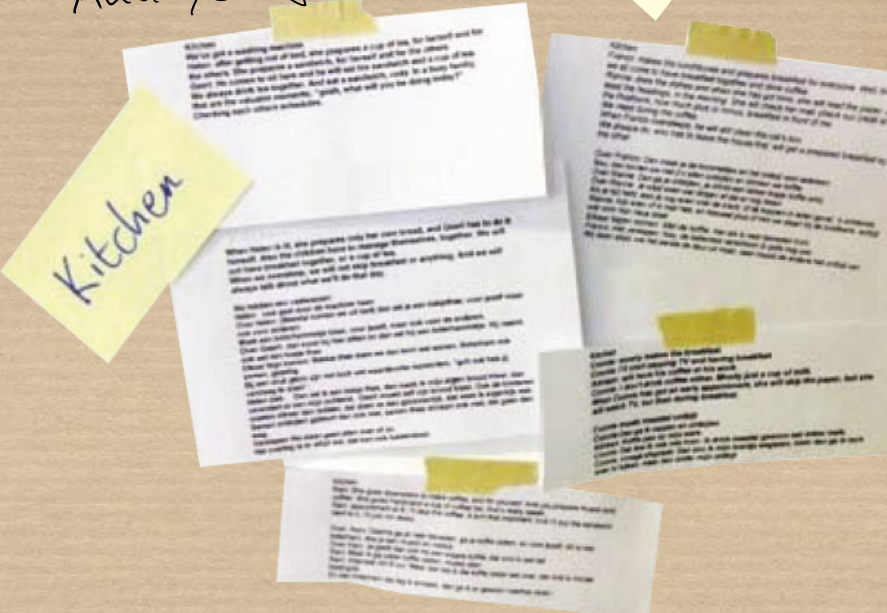
Workshop photoboarding



Discussing theory



Analysing data



Rich Visualizations



Personas based on user data



Rich Visualizations

Iterative steps in developing a storyboard



Storyboard with personas as main characters

Rich Visualizations



Mugs to sensitize Philips designers before the creative session



Using materials to develop ideas



Philips designers exploring the inspirational materials



GRADUATION PROJECT

HOME ALTARS



I SHOULD THROW IT AWAY, REALLY...

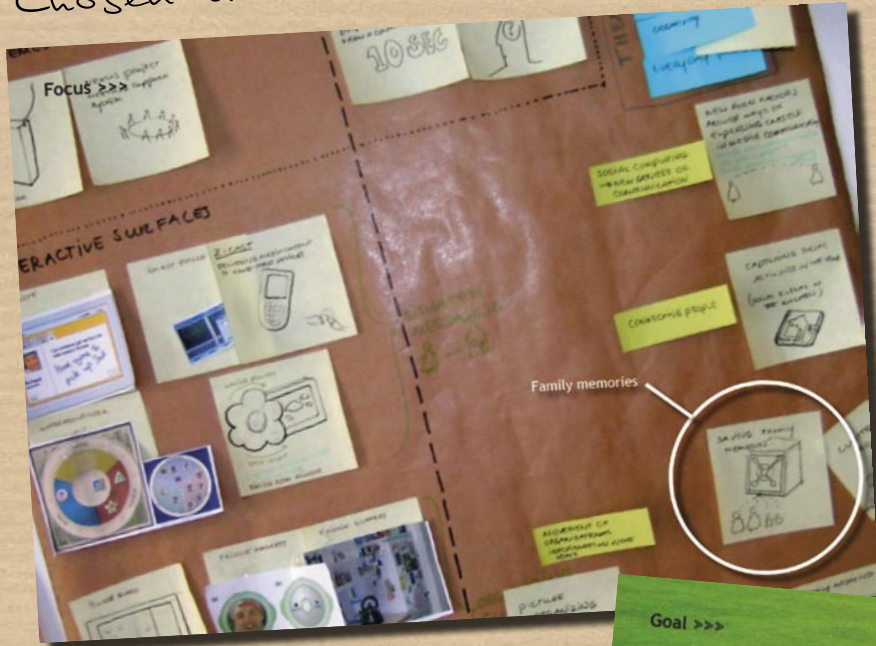
What are home altars?

ODD LITTLE NICK-NACKS ON
DISPLAY IN THE HOME

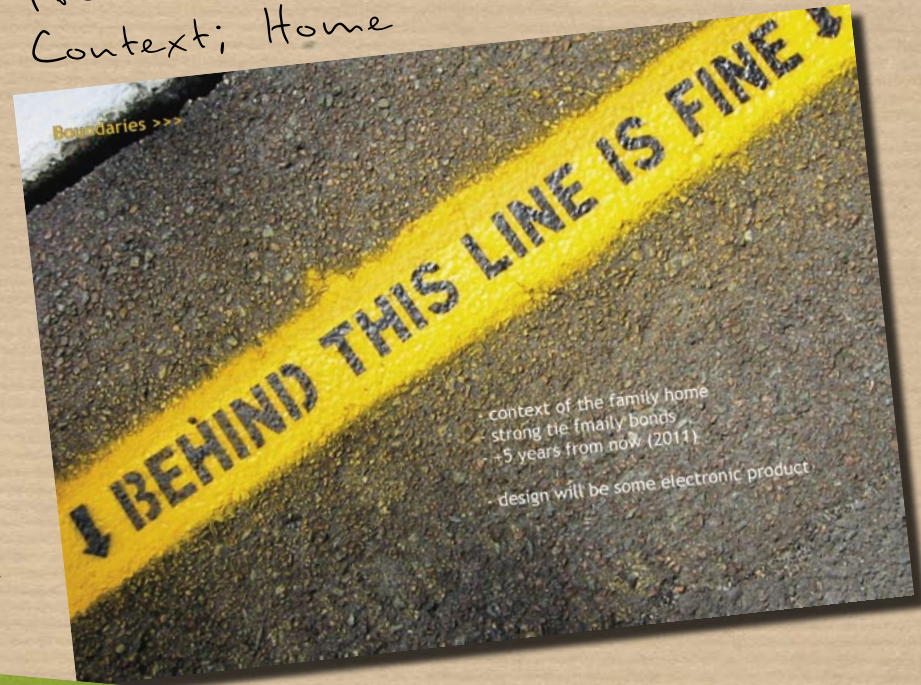


Starting Points

Chosen domain; 'family memories'



Product for 2012
Context; Home

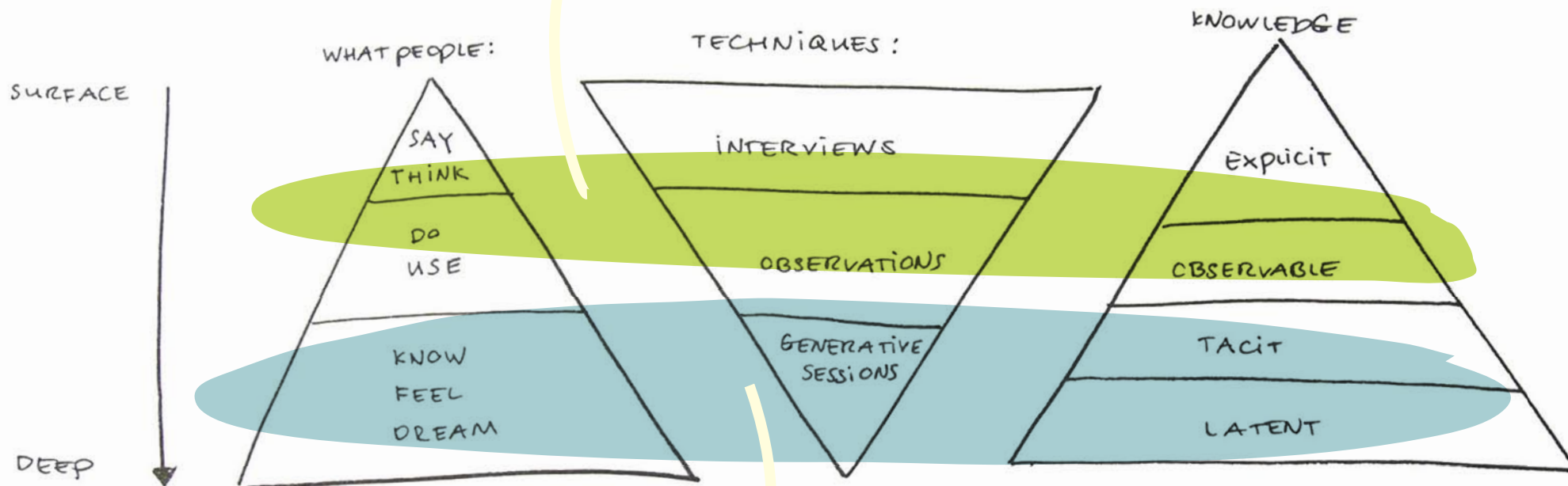


Preliminary design goal



Contextual Inquiry

How social relationships are represented in Home Altars



Social relationships between family members

Participants

Pat



Chandu & Tracy



James & Clare & parents



Megan & Kate



Research Set Up

SENSITIZING PROBE



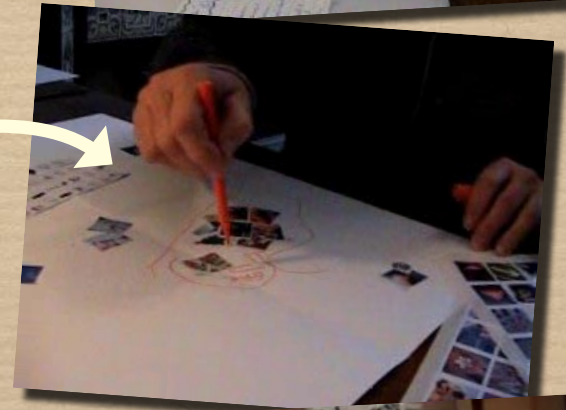
one week before house visit

HOUSE VISIT

TALK about probe



MAKE collage
TALK about collage



HOME ALTARS
& meaning of the
cherished objects



Sensitizing Probe



4 assignments in each sensitizing probe



Sensitizing Probe - Assignments

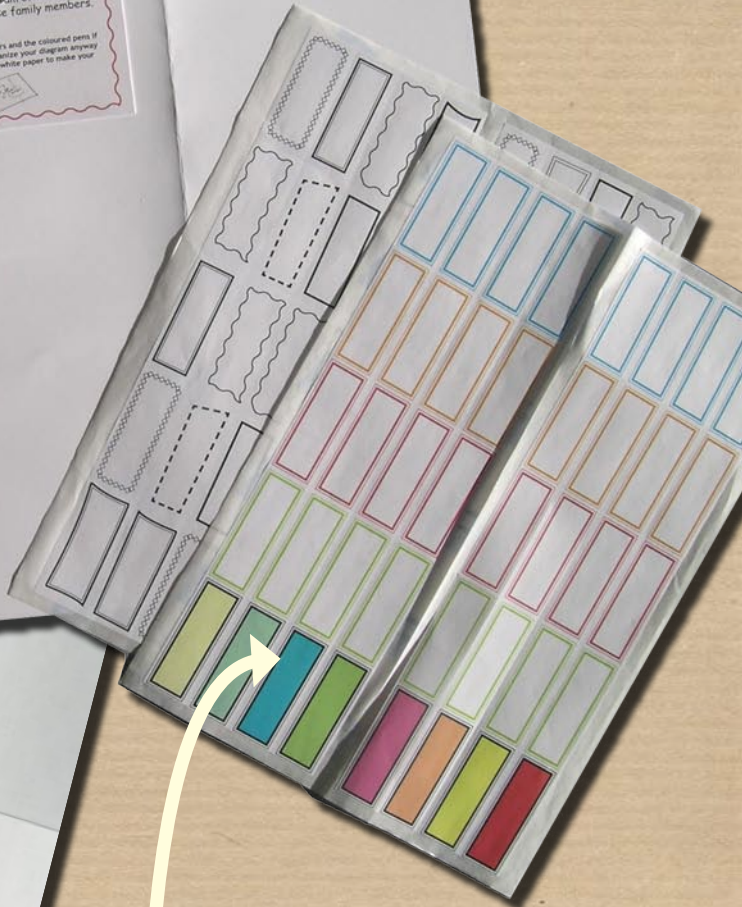
1 Make a diagram of who you see as your close family members.
You can use the stickers and the coloured pens if you like to and you can organize your diagram anyway you want. You can use this white paper to make your diagram in. Example:

2 Please indicate which family members live far away and which live close by.
You can use this transparent sheet to put on top of

3 Please indicate how you keep in touch with your family members.

4
A. Please indicate which family members you are closest to.
B. Why do you feel close to these family members?
C. What do you share with these family members?
You can use this transparent sheet to put on top of the first assignment.

1 Make a diagram of who you see as your close family members.
You can use the stickers and the coloured pens if you like to and you can organize your diagram anyway you want. You can use this white paper to make your diagram in. Example:



Stickers to help participants make diagram of who they see as their close family

Collage Making Assignment

Make a collage of;

BEING REMINDED OF PAST
EXPERIENCES; THE GOOD
ONES AND THE BAD ONES

Stickersheets with words
and pictures to help the
participant associate



Examples MAKE Assignments



"Indian Family"

"English Family"

Family Diagram

Collage 'Being reminded of past experiences + the good ones and the bad ones.'

A collage titled 'GOOD vs BAD' featuring various photos and handwritten notes. The word 'GOOD' is written in large letters with a smiley face, and 'BAD' is written in large letters with a sad face. The collage includes:

- Photos of a car with the note: "Are you stealing my car?"
- Photos of a Christmas tree with the note: "costs lots of money."
- Photos of a lightbulb with the note: "Bingo! I've had an ideaa...."
- Photos of a person with the note: "Traditional, religious"
- Photos of a person with the note: "Safety (care!!)"
- Photos of a person with the note: "Science NOW"
- Photos of a person with the note: "Life must stop. STILL!"
- Photos of a person with the note: "MOTION!"
- Photos of a person with the note: "Gamble a little. somethings are worth a little"
- Photos of a person with the note: "Instruction"
- Photos of a person with the note: "ebooks. I don't read books very often but read lots on a PC."
- Photos of a person with the note: "stop. maybe go."
- Photos of a person with the note: "JGG Jan Call"
- Photos of a person with the note: "FRIENDSHIPS They good and bad, bring love & hate."
- Photos of a person with the note: "overas."
- Photos of a person with the note: "THE GOOD CAN ALSO BE BAD!!"
- Photos of a person with the note: "THE BAD CAN ALSO BE GOOD!!"
- Photos of a person with the note: "Scary movie"
- Photos of a person with the note: "Good + BAD ÷ x x Y = ???"
- Photos of a person with the note: "Cool"
- Photos of a person with the note: "Work"
- Photos of a person with the note: "Forgotten"
- Photos of a person with the note: "Big Brother. nation. (security)"
- Photos of a person with the note: "Home"
- Photos of a person with the note: "This way, but I want to go that way"

Analysis of Data

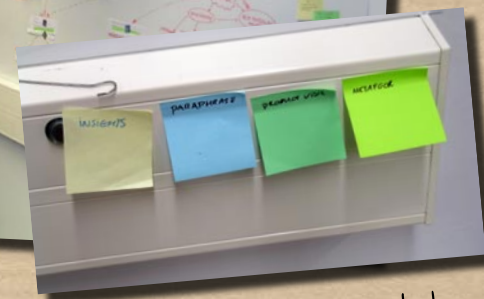
based on Grounded Theory



clustering quotes around 'Keeping in Touch' & 'Home Altars'



finding structures



marking insights & ideas



Why one should not force memory prompts upon people...

It can be painful to be remembered about the not so happy past, but sometimes even **HAPPY MEMORIES CAN BE VERY PAINFUL** to think about!

It is because the past is so pleasant, Sheila and Luca don't want to be remembered about it; not having it is painful

IT IS NOT THE PAINFUL PART. IT IS THE GOOD PART THAT SUDDENLY ONE IS OUTSIDE OF IT

Some examples of Home Altars

Having something to put things on makes people save/ collect things

Here, I've just got Estelle and my, and my sister and her husband Michael and all my Indian bangles. I love them, I just love them, so, every time I go, they are made of glass, so they actually break after a while, so you have to go and get new ones, but some of them I have had a long time. And they are really cheap, so...



Clustered objects often have a relation to each other

[...] That's old ornaments from my mum's mothers house, my gran, I didn't know, but when she died, we were all allowed to take something from the bungalow, so I took these ornaments that you see. So I did the same thing when my grand dad died, my dad's dad, I took the military vehicles. It is just something I kept that reminds me of the family I didn't know. It should be cool. I haven't broken them even. I got them when I was about four or five and I kept them since and not even chipped them because they have always been out of the way. Up

Some things remain in the same place for a very long time



Some examples of Home Altars

It shouldn't really be there

It is important that the things on display have memories attached to them

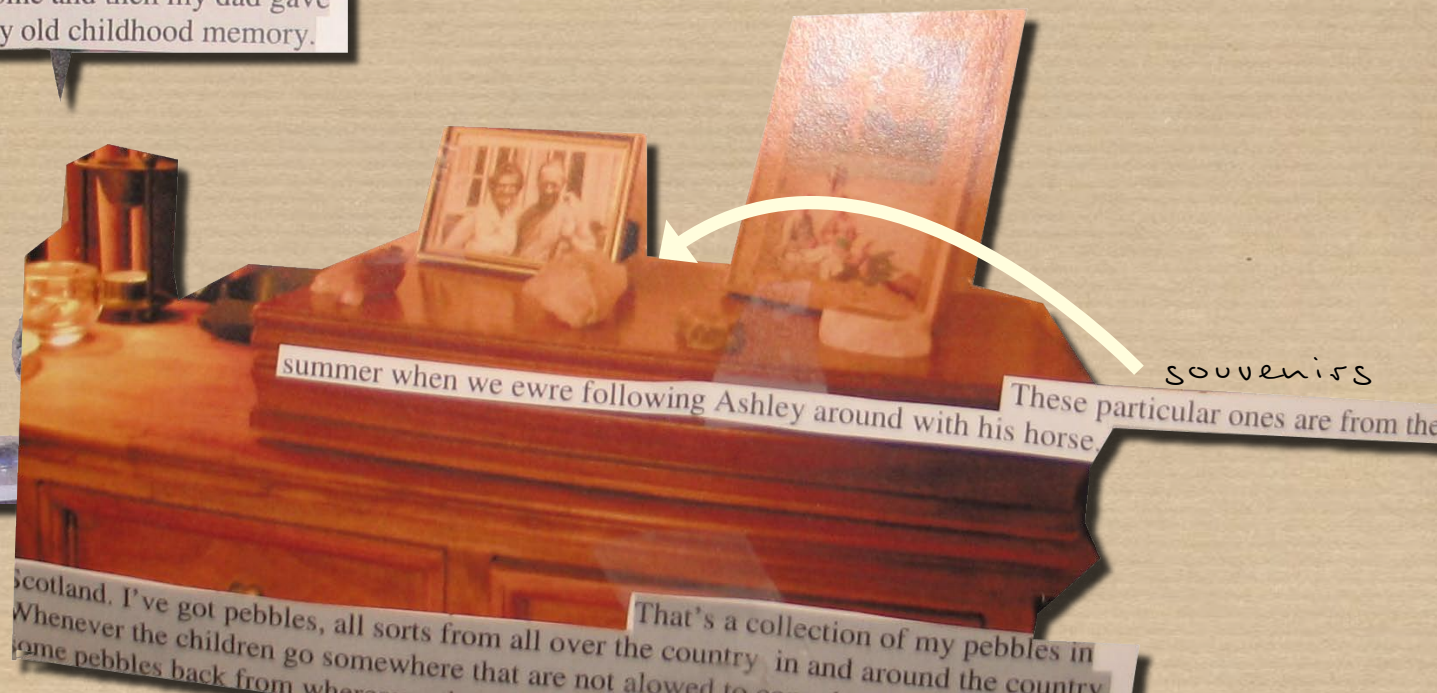


Megan
Oh, be careful with the bee, I made him at grandma's house. This is just clutter really, it shouldn't really be there. Stuff that hasn't found a place yet.

I should throw it away really

Annet
Is it important to you that the things you have on display have memories attached to them?

Kate
Yes, very much so. This is, well, we had it on the mantelpiece at home and then my dad gave it to Will and Wil very kindly let me have it in here. So that's a very old childhood memory.



summer when we ewre following Ashley around with his horse
souvenirs
These particular ones are from the

Scotland. I've got pebbles, all sorts from all over the country in and around the country. Whenever the children go somewhere that are not allowed to come home with some pebbles back from wherever they go.

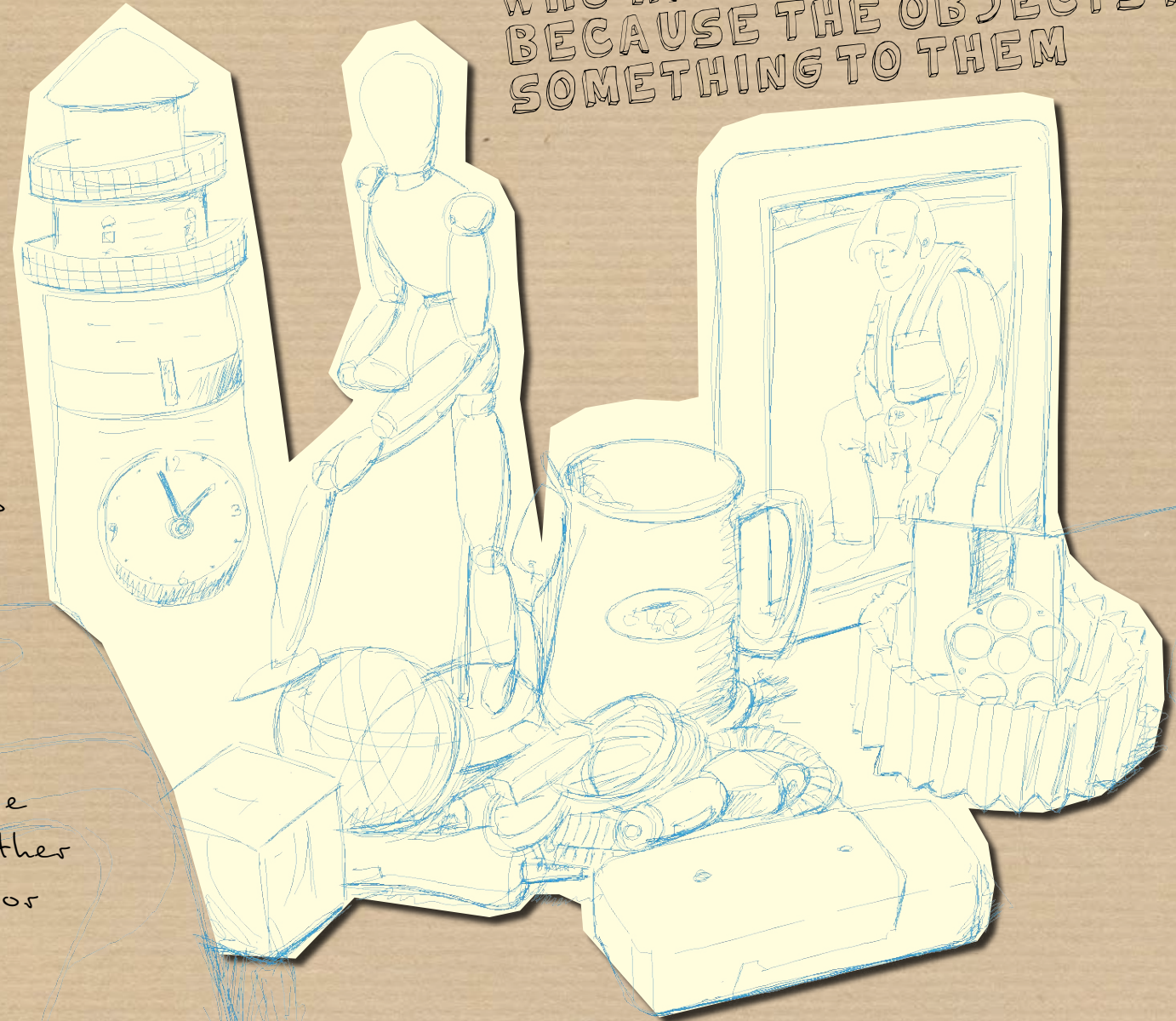
Definition Home Altars?

No unambiguous definition! There are a lot of variables

UNIQUE CLUSTERS OF SMALL OBJECTS ON DISPLAY WHICH ARE CHERISHED BY PEOPLE WHO HAVE PUT THEM THERE BECAUSE THE OBJECTS MEAN SOMETHING TO THEM

Tangible signs that communicate the continuity of ones experiences, relationships & values

The objects often have some relationship, either by form, aesthetics or meaning



Relation Home altars and Keeping in Touch

ONE OF THE IMPORTANT FUNCTIONS
OF CHERISHED HOUSEHOLD OBJECTS
IS PRECISELY THEIR ABILITY **TO PROVIDE**
TANGIBLE, ENDURING, AND VITALIZED SIGNS THAT
CAN COMMUNICATE THE CONTINUITY OF ONE'S
EXPERIENCES, **RELATIONSHIPS** AND VALUES

- Csikszentmihalyi & Eugene Rochberg-halton, 1981

People who have ties to people represent them
in concrete objects
(Csikszentmihalyi & Eugene Rochberg-halton, 1981)

Things embody goals, make skills manifest, and shape the
identity of their users.
(Csikszentmihalyi & Eugene Rochberg-halton, 1981)

Insights keeping in touch

NEW COMMUNICATION TECHNOLOGIES
(MOBILE PHONES, MAIL, ETC.) COULD BE
USED **TO MAKE HOME ALTARS MORE DYNAMIC**

What to design?

People sometimes have problems with 'finding someone' to get into touch with

People like to have an idea of what their close family members are doing.

Relations between family members are asymmetric, especially between different generations.

People present ties to people in concrete objects, often clustered together in Home Altars.

Having a dedicated place to put things in influences people's behaviour in saving/collecting objects

Objects in home altars often have some kind of relationship with each other

A lot of the current technologies focus on saving stuff, whereas in the real world not everything can be saved.

THROWING AWAY STUFF

Throwing away stuff can be seen as an important act of creativity

FAMILY RELATIONS

CONTEXT FACTORS

MEMORY PROMPTS

Only people themselves can decide if a certain memory is pleasant or not and this even varies within time and space

Vision

STATEMENT

I want to let people artfully
create **NEW TANGIBLE & VISIBLE SIGNS**
OF THEIR SOCIAL RELATIONSHIPS by giving them
the opportunity to create new meaningful clusters of cherished
objects and **MERGING THEIR PHYSICAL WORLD WITH**
THE DIGITAL WORLD OF communication in a
meaningful way.

open & casual

Intuitive

Allow for both
thought and
unintentionality

surprisingly simple

INTERACTION

neutral appearance

carrier for
meaningful objects

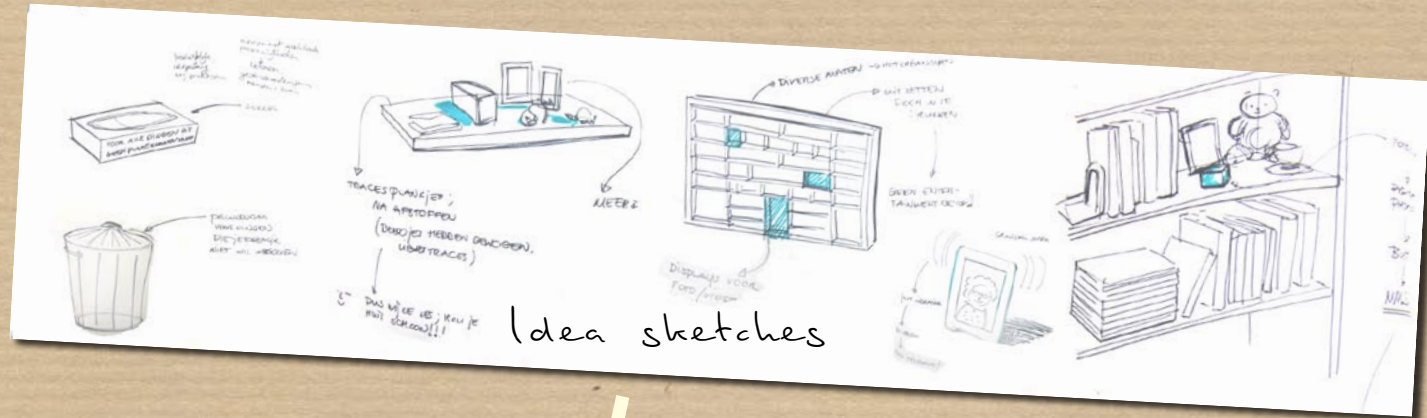
Not a gadget!

Digital becomes physical

In the periphery of
the home; not an
entertainment system!

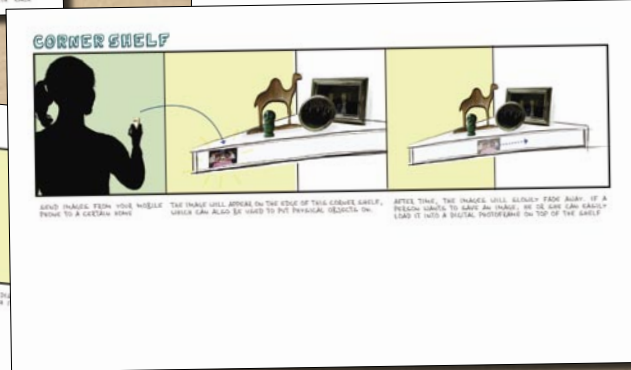
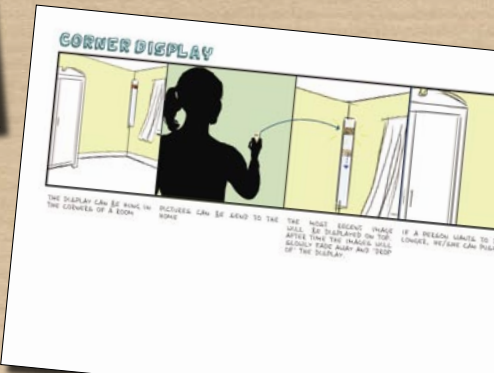
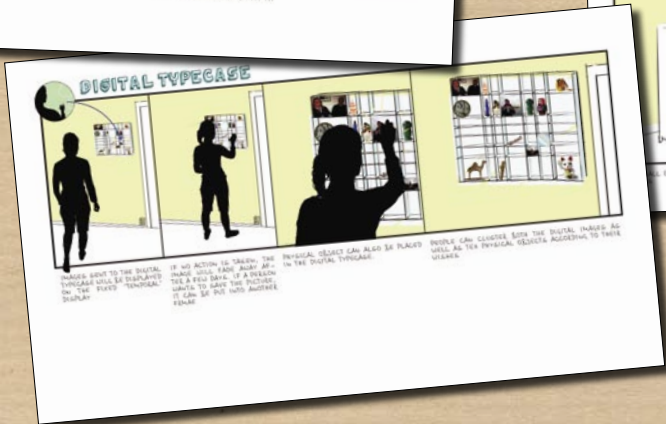
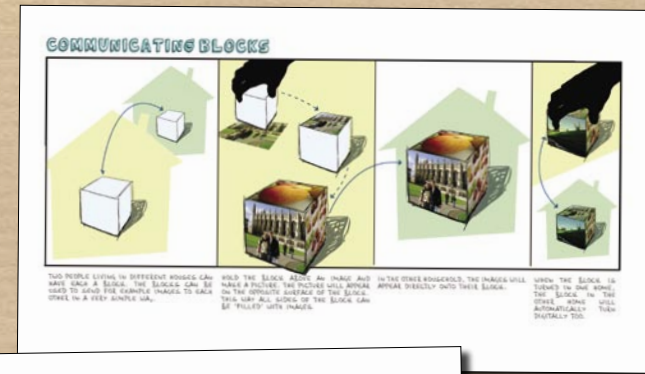
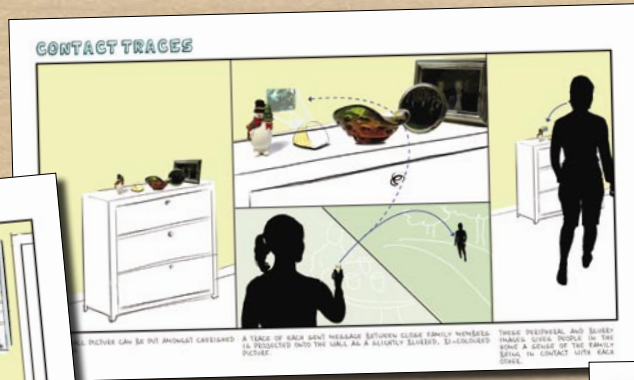
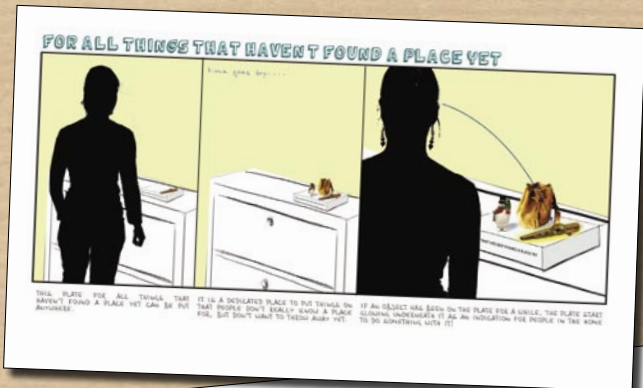
subtle
PRODUCT

Storyboards



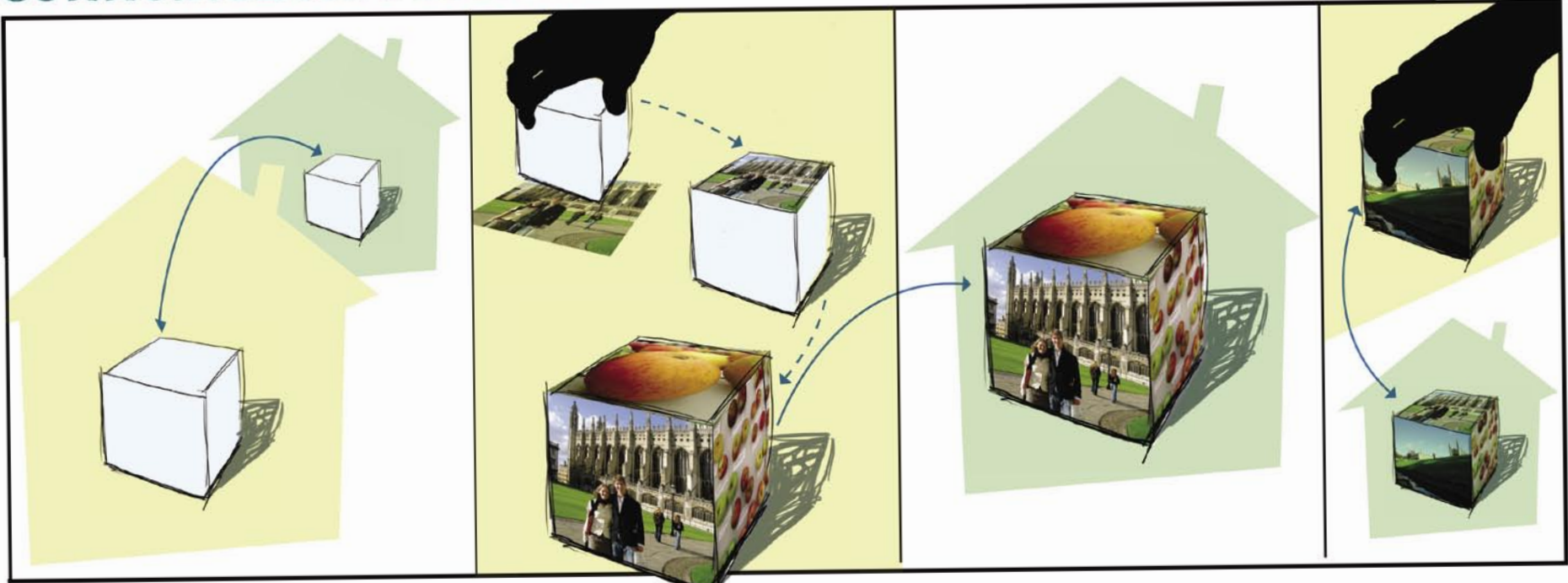
Idea sketches

Storyboards



Storyboard A

COMMUNICATING BLOCKS



TWO PEOPLE LIVING IN DIFFERENT HOUSES CAN HAVE EACH A BLOCK. THE BLOCKS CAN BE USED TO SEND FOR EXAMPLE IMAGES TO EACH OTHER IN A VERY SIMPLE WAY.

HOLD THE BLOCK ABOVE AN IMAGE AND MAKE A PICTURE. THE PICTURE WILL APPEAR ON THE OPPOSITE SURFACE OF THE BLOCK. THIS WAY ALL SIDES OF THE BLOCK CAN BE 'FILLED' WITH IMAGES

IN THE OTHER HOUSEHOLD, THE IMAGES WILL APPEAR DIRECTLY ONTO THEIR BLOCK.

WHEN THE BLOCK IS TURNED IN ONE HOME, THE BLOCK IN THE OTHER HOME WILL AUTOMATICALLY TURN DIGITALLY TOO.

I also send her cards, to make her feel better. I appreciate her, because she takes care of mother.

Mattias, the little six year old, tricky, I just try to keep contact with him. He doesn't like communicating on the phone anyway, He is busy. And again, Kaleila, I am just trying to keep the contact alive.

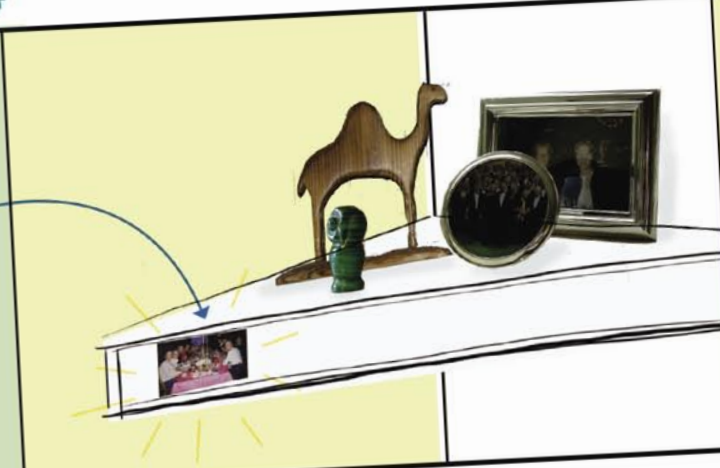
My mum doesn't do computers

Storyboard B

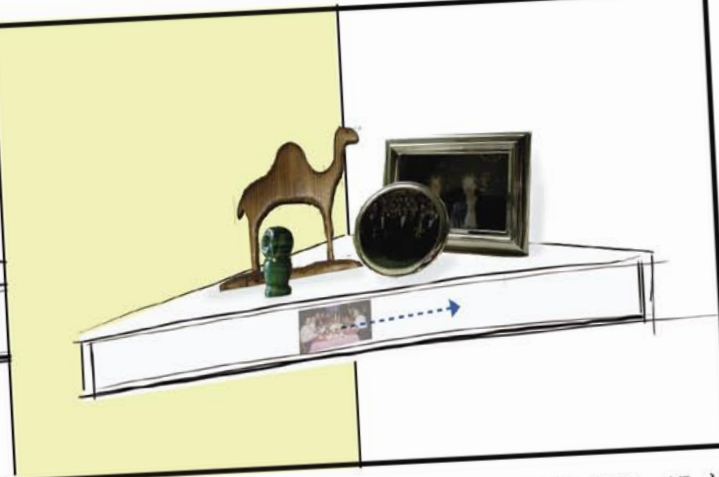
CORNER SHELF



SEND IMAGES FROM YOUR MOBILE PHONE TO A CERTAIN HOME



THE IMAGE WILL APPEAR ON THE EDGE OF THIS CORNER SHELF, WHICH CAN ALSO BE USED TO PUT PHYSICAL OBJECTS ON.



AFTER TIME, THE IMAGES WILL SLOWLY FADE AWAY. IF A PERSON WANTS TO SAVE AN IMAGE, HE OR SHE CAN EASILY LOAD IT INTO A DIGITAL PHOTOFRAME ON TOP OF THE SHELF

I've got odd little nick nacks, my grandpa gave me that. So I always have it here

They take up so much space but I don't want to chuck them because they mean something to me

So we probably have sometimes two or three email a day, it will just be a sentence you know.

What is important we have a lot of contact, I know where they are and what they are like.

Storyboard C

FOR ALL THINGS THAT HAVEN'T FOUND A PLACE YET



THIS PLATE FOR ALL THINGS THAT HAVEN'T FOUND A PLACE YET CAN BE PUT ANYWHERE.

IT IS A DEDICATED PLACE TO PUT THINGS ON THAT PEOPLE DON'T REALLY KNOW A PLACE FOR, BUT DON'T WANT TO THROW AWAY YET.

IF AN OBJECT HAS BEEN ON THE PLATE FOR A WHILE, THE PLATE START GLOWING UNDERNEATH IT AS AN INDICATION FOR PEOPLE IN THE HOME TO DO SOMETHING WITH IT!

Yeah, I had to keep that as well,

I should chuck it out really. It's always there, but I don't have place for it. So I put it on the junk

Oh, be careful with the bee, I made him at grandma's house. This is just clutter really, it shouldn't really be there. Stuff that hasn't found a place yet.

Storyboard D

DIGITAL TYPECASE



IMAGES SENT TO THE DIGITAL TYPECASE WILL BE DISPLAYED ON THE FIXED 'TEMPORAL' DISPLAY

IF NO ACTION IS TAKEN, THE IMAGE WILL FADE AWAY AFTER A FEW DAYS. IF A PERSON WANTS TO SAVE THE PICTURE, IT CAN BE PUT INTO ANOTHER FRAME

PHYSICAL OBJECT CAN ALSO BE PLACED IN THE DIGITAL TYPECASE.

PEOPLE CAN CLUSTER BOTH THE DIGITAL IMAGES AS WELL AS THE PHYSICAL OBJECTS ACCORDING TO THEIR WISHES

What is important we have a lot of contact, I know where they are and what they are like.

I suppose I have got photos everywhere I suppose. [...] Why this ended up on the shelf I am not quite sure. It's Will's, there are things that are sitting around the house.

Actually, this one was supposed to be about travel, but what happened was that I had a couple of pictures that somehow fell behind, so I filled them with pictures that really weren't about travel, so the theme was lost a little bit.



QUESTIONS?