Conceptual Design

Mattias Arvola

LINKÖPING UNIVERSITY

The Exciter

- https://www.youtube.com/watch?v=ocycEGSkSoo

A design concept is

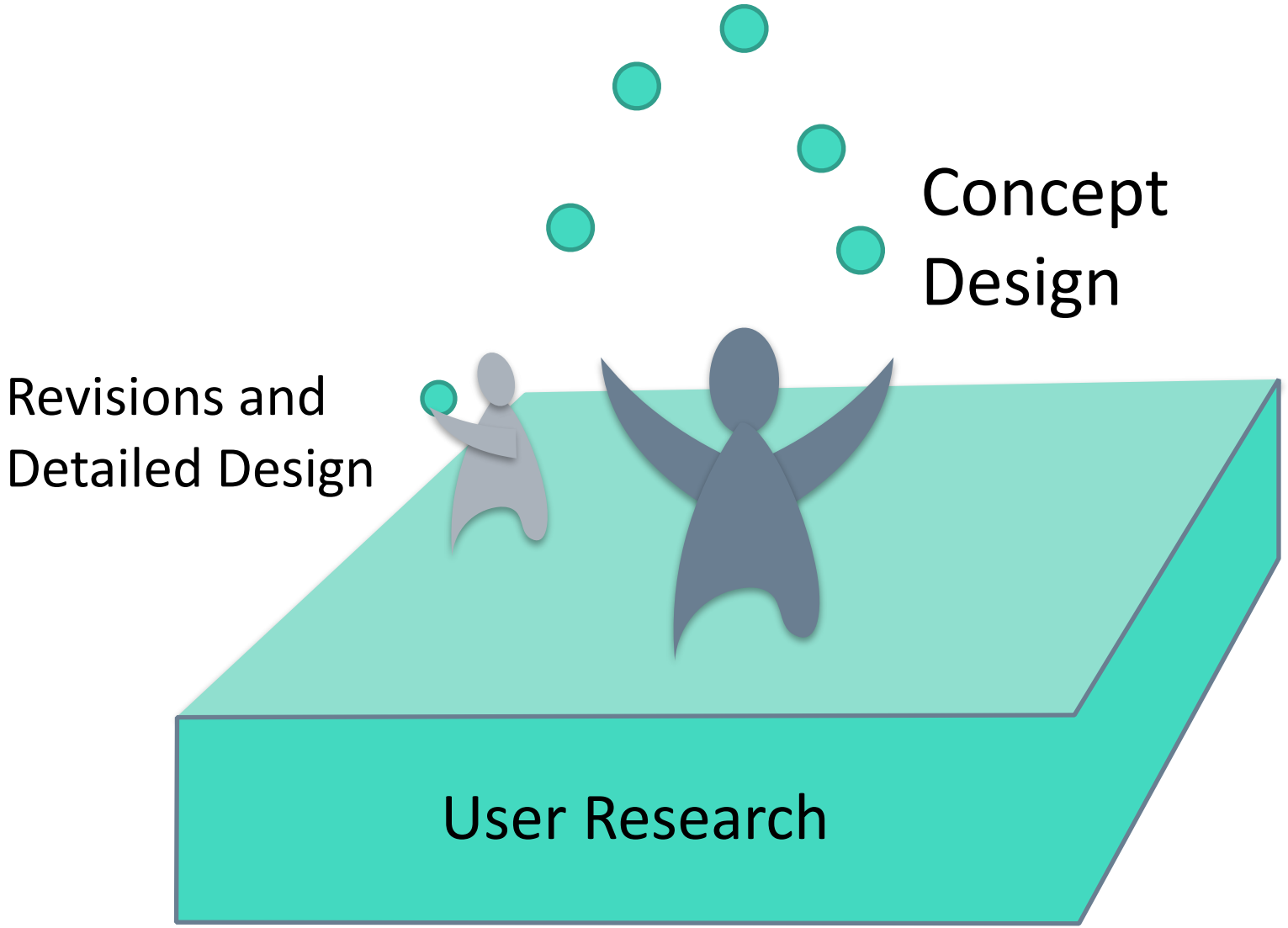
- An of expression of a goal
- A solution to a problem that has not yet been solved, or today is solved in a unsatisfactory way
- Useful if it serves attaining of the goal, and useless if not
- A basis and identity for the work
- A story

- It can have many origins

A design concept

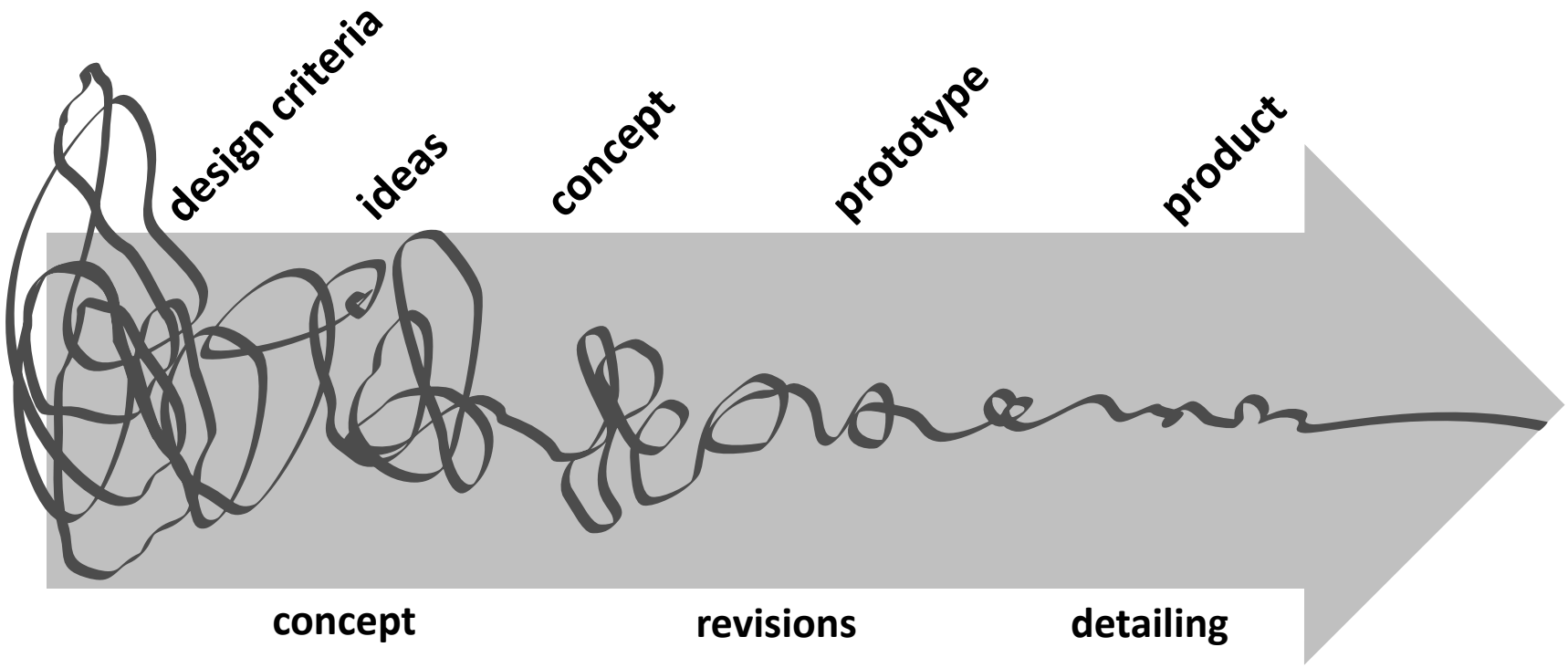
(Keinonen, 2006; Henderson, 2011; Ylirisku, 2013; Arvola 2014; Arvola & Walfridsson, 2015)

- Is a description of a product/service that is:
  - Anticipatory/ actionable
  - Well-founded
  - Focused
  - Communicable
- It consists of:
  - Name
  - Purpose
  - Users
  - Situation of use
  - Design principles
  - Consequences


Concept
Design
Revisions and
Detailed Design
User Research

fuzzy front end:

uncertainty >> patterns >> insights clarity >> focus



http://www.ida.liu.se/~matar/tools.en.shtml

Design Concept No.

WHAT the name of the concept is:

WHO the user is:

WHEN and WHERE it will be used:

WHAT the concept is:

WHAT it does (main function and content):

WHY the user whants to have it and use it:

HOW it is used (draw a storyboard):

The user's experience before

Interaction step 1

Interaction step 2

Interaction step 3

Interaction step 4

The user's experience afterwards

HOW it should be:
Principles and qualities

Consequences:
For people, environment, or society

Project:

Date:

Researcher:

Design Concept Sheet. Mattias Arvola 2014.

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Interaction step 4

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Design Concept Sheet. Mattias Arvola 2014.

Concept Ideation

- Play with and vary who does what, when, where, how and why in a systematic manner.
- What kind of product or service would it become if…

Structure of a Brainstorming Session

- Preparations
  - Materials
  - Roles
  - Icebreaker
- Problem
  - Problem and criteria
  - Focus on large amounts of ideas
  - No criticism
  - Quiet time, writing down
  - Share ideas
- Discussion
  - Develop each others ideas
  - Invite everybody to participate
  - No criticism
  - Stay focused and don’t linger on one idea for too long
  - Provocations and random input
  - Take breaks
- Organizing ideas
  - Affinity diagramming
  - Mind mapping

- 200 ideas in brainstorming
- Develop 12 concepts
- Test 3 with customers
- Deploy 1
- Don’t say no too early
- Focus on value for customers and business case

Levels of Interaction Design

(Arvola & Artman, 2007)

- Design Concept
  - Who does what, when, where, how and why? Overarching gestalt, posture or genre
- Functions and content
  - Actions and objects
- Structure
  - Temporal, spatial and logical
- Interaction
  - How does the user navigate the structure to use the functions and manipulate content?
- Presentation
  - Look & feel. What meets the senses and how is it interpreted.

Function-based generation

- The user should be able to:
  - Setup system
  - Compute result
  - View result
  - Enter result
  - Authorise result
  - Publish result
  - Analyse result
  - Report result
  - Generate transcript
  - View transcript
  - Verify transcript

Experience-based generation

- The system should be:
  - Accurate
  - Efficient
  - Easy to use
  - Funny
  - Exciting
  - Exclusive

Metaphor-based generation

- The system should be like a…

EXIT 7
THE BLUE ORDER
STEP UP AND PLAY
TS LOYAL
OOTBALL

Vid St. Sjöfallet
141.

HAMMERMILL
CHASE

Design is making sense of things

Skewing an existing design (Lundgren & Gkouskos 2013)

Start with a framework of interaction qualities:

Interaction: Input modalities, Interaction flow, Directness, Freedom of Interaction, Precision and Tasking

Expression: Output modalities, Presentation, Clarity, Feedback and Information Order

Change and Time: Evolution, Movement, Response Time and Temporal aspects

Behaviour: Approach, Level of Dependency, Forgiveness, Robustness, Adaptability and Openness

Complexity: Posture, Versatility, Predictability, Connectivity and Difficulty

Users: Company, Locality of Users, Privacy and Behaviour analysis

Skewing an existing design (Lundgren & Gkouskos 2013)

1. Analyze the given object with the given framework
2. Ideation: redesign the object using the framework
3. Describing and discussing design ideas
4. Refinement of a chosen design idea
5. Analysis of refined design ideas using the given framework.
6. Deliver concept description, a scenario of use and a reflection on what properties (in the framework) had changed and how use, and situation of use, had been changed accordingly

Liedtkas & Ogilvies approach

- Gather your Legos: people, design criteria and brainstorming results.
  - Spread your Legos:
  - Use the room
  - Eliminate redundancies
  - Group similar ideas
  - Missing things and new ideas
  - Recurring themes
  - Set priorities using the criteria
  - Identify must have ideas and themes
- Choose 5-12 themes that serves as anchors for distinct concepts
- Form initial concepts:
  - Combine elements for customer value and viable business model
  - Set up a Chili Table for each concept

Jeremy Alexis' Chili Table

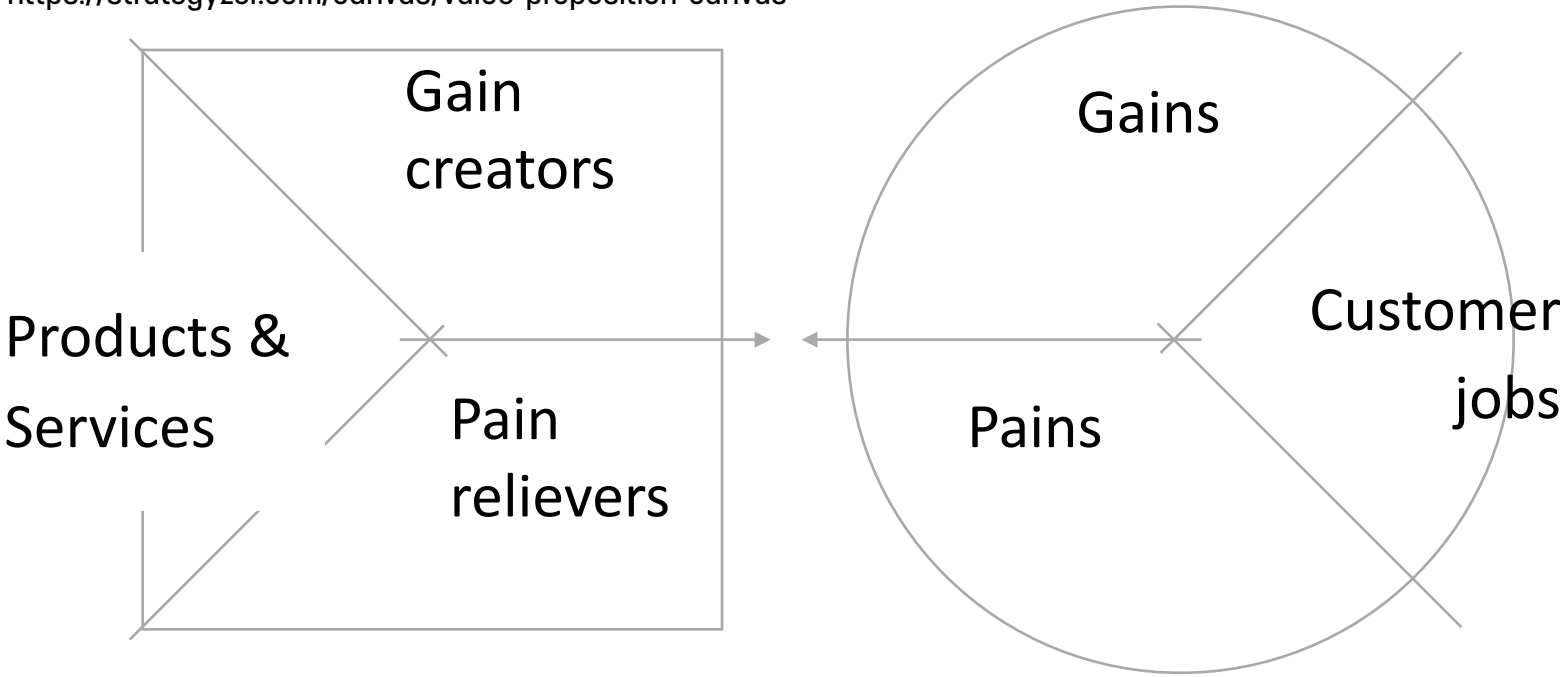
- Variables: Think of all the things you can put into chili
  - meat, beans, veggies, spices…
- Values: Think of all possible items in each category of things
  - different kinds of meat or spices
- Combinations: Create different combinations of variables and values to make different kinds of
  - vegetarian chili, meat lover's chili, Hawaiian chili…

NABC

- CONCEPT NAME
  - Need
    - Why customer wants it?
    - What unmet needs does it serve?
  - Approach
    - What asset or capability does it leverage?
    - How does it create value?
    - How do we create a sustainable advantage?
  - Benefit
    - How will the customer benefit?
    - How will our company benefit?
    - What other parties will benefit?
  - Competition
    - Who else serves this need?
    - How will they respond to our entry?

Value Proposition Canvas

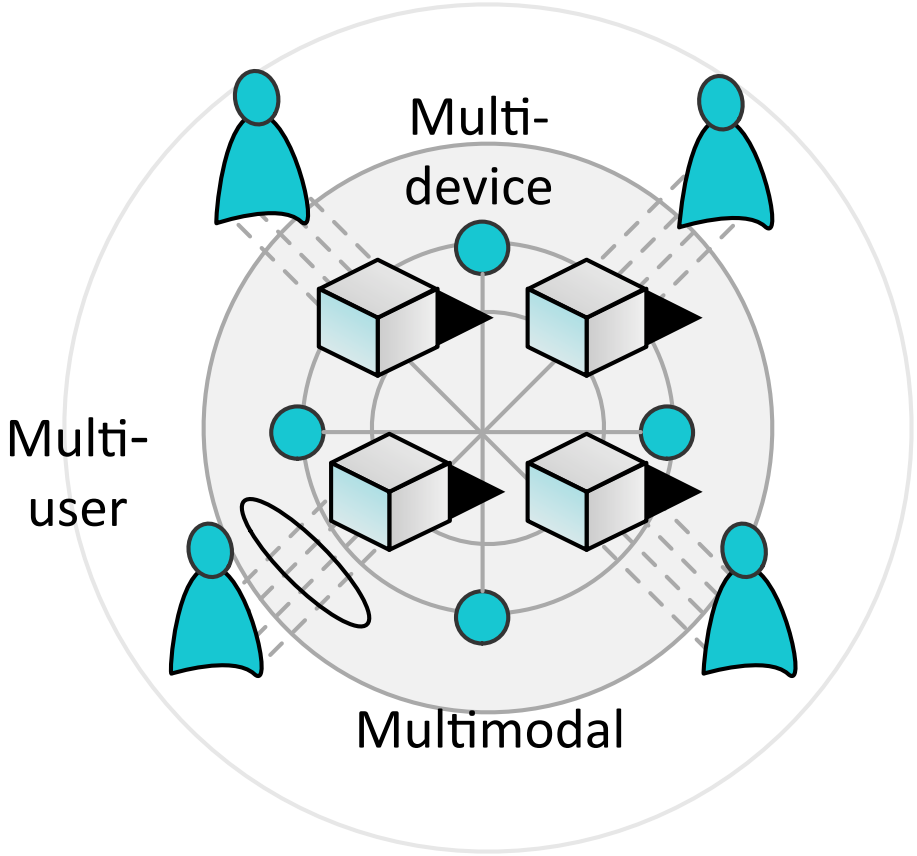
https://strategyzer.com/canvas/value-proposition-canvas



Concept Sketches

Show and Tell

The guide can broadcast film to the visitors mobile phones. Pre-recorded or live. Even the people in the back can see, and details not visible to the naked eye can be pointed out.



NAME	Harpo
PURPOSE	To let users switch between devices, modalities and each other
DESIGN DRIVERS	Multi-device, multi-user, multimodal, swiftness, serendipity

FREJA PÅ VÄG HEM 17.15

Evaluate Against Your Design Criteria

- Choose multiple compelling concepts and for each of them consider:
- What type of product/service are you considering?
- How would it work?
- What key needs does it meet?
- What are the costs and risks?
- How would it enrich the relation between the company and the customer?

Concept Selection with Pugh Charts

PUGH CHART

	BENCHMARK CAMERA W/ FACIAL RECOG.	DIGITAL SCRAPBOOK	PHOTO SCAVENGER APP	LIVE FEED PARTY PROJECTOR	POV CAMERA W/ STRAPS
AM I PERSONALLY INTERESTED?	S	+	+	S	+
DOES THE IDEA HAVE COMPETITIVE ADV.?	S	+	S	+	S
IS THERE A CLEAR NEED?	S	+	+	+	S
ARE THERE GOOD MARKET OPPORTUNITIES?	S	+	S	S	+
HOW BIG IS THE IMPACT OF IDEA?	S	+	S	S	S
CAN I COMM. IT CLEARLY?	S	+	+	S	S

Criteria for Concept Selection

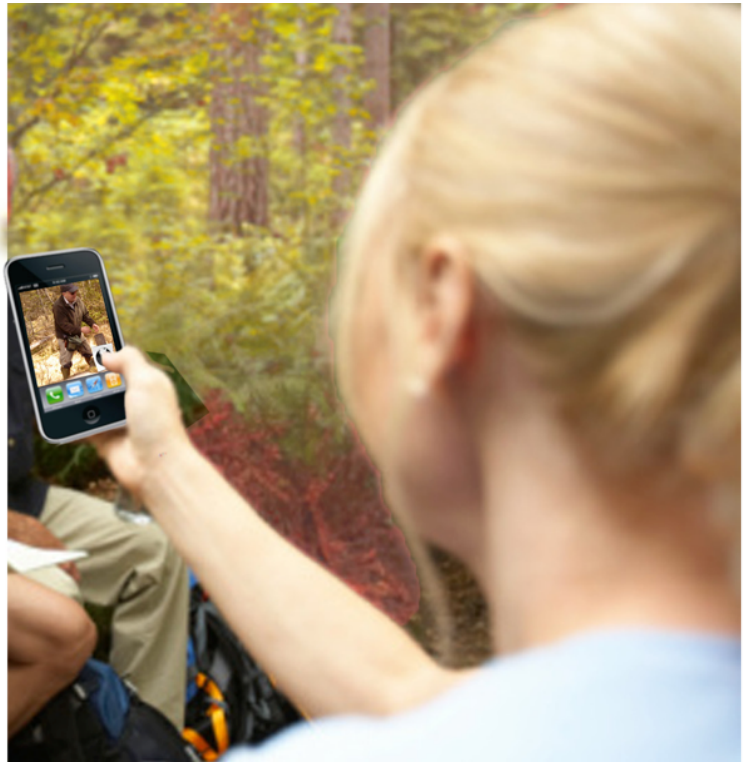
- Maximising the contribution to effect goals
- Main product goals
- Critical project goals

	The Time Machine	The Walking Quiz	Show and Tell	The Interactive Map	The Sidekick	Mythical Creatures	Spatial Talking Book	Leaving Traces
Curiosity	o	o	-	+	+	+	-	-
Focus on the Landscape	o	o	o	o	o	o	o	-
Communicate Astrid Lindgren	o	-	o	o	o	-	+	-
Support Outdoors Education	o	o	+	o	o	-	+	+
Cost	o	o	o	o	-	o	+	+
Feasibility	o	o	+	o	-	o	+	+
Viability	o	o	+	+	o	+	+	o
Longterm Experience	o	+	+	+	-	o	o	o
Total +	o	1	4	3	1	2	5	3
Total -	o	1	1	o	3	2	1	3
Total	o	o	**3**	**3**	-2	o	**4**	o

Concept Selection Using Pugh Charts

1. Consensus about criteria
2. Consensus about alternatives
3. Assessment of alternatives
4. Adding it up
5. Revisit negative assessments
6. Design decisions and syntheses.

Concept Proposals in Storyboards



SHOW & TELL

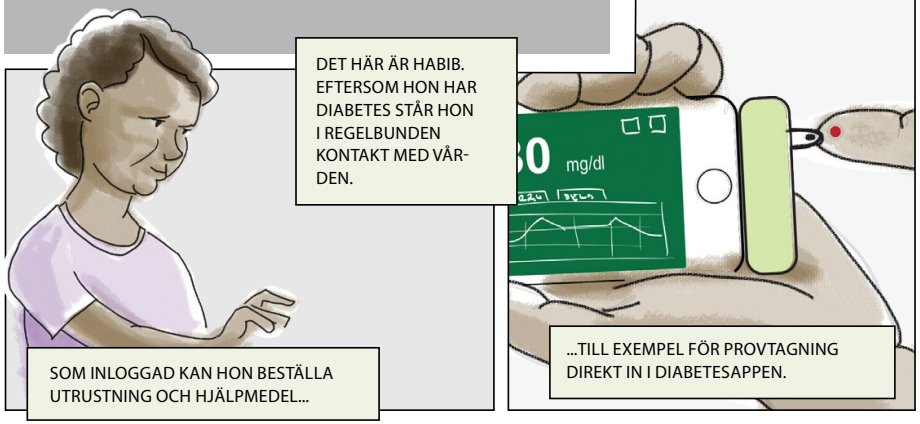
When the guide wants the group to see something on their phone he/she takes up visual marker.

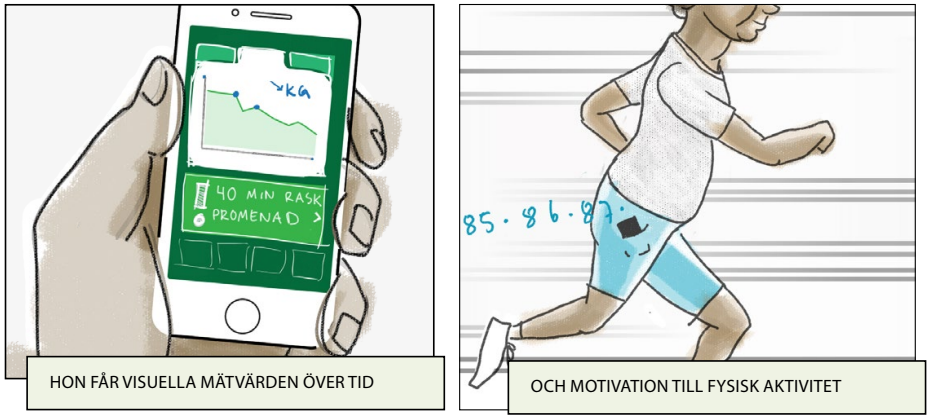
The visitors point the camera of the phone towards the marker to activate whatever the guide wants to show.

On the display of the phone the visitors can see both the camera view and the object or animation the guide wants to show.

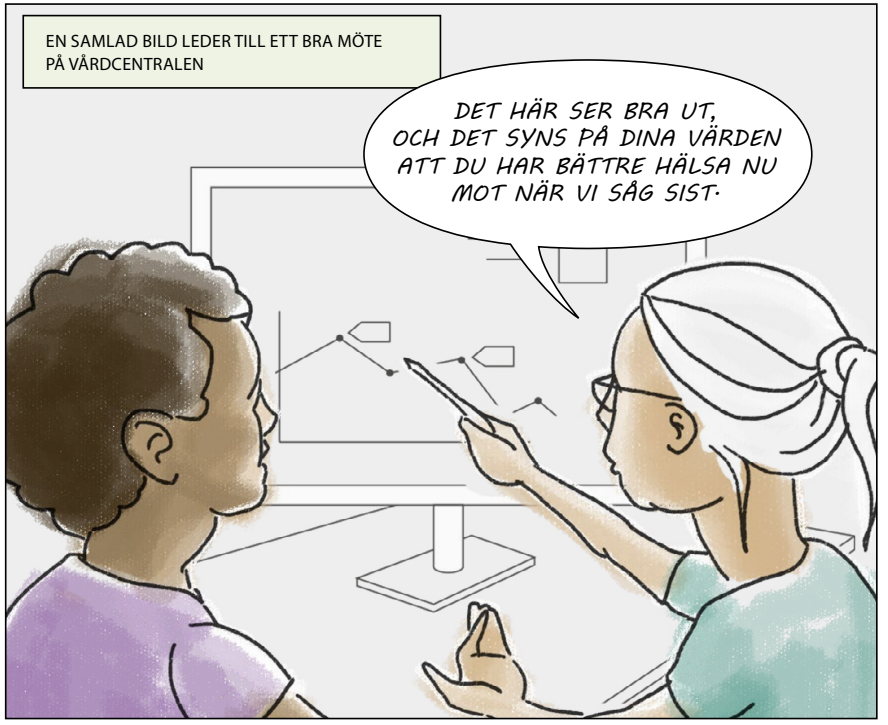
To change the image or the animation the guide just changes or adds a new marker.

KRONISK SJUKDOM



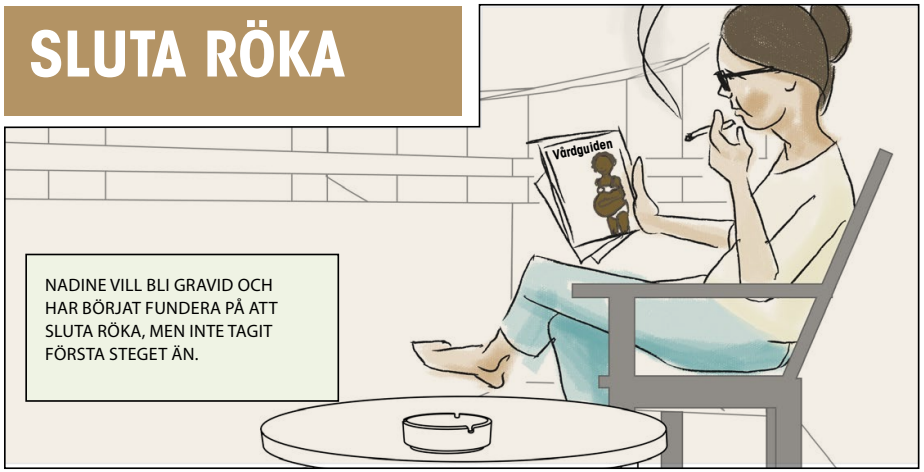


SAMORDNING, VALFRIHET OCH KONTROLL ÖVER SINA UPPGIFTER ÄR EXEMPEL PÅ SÅDANT SOM INVÅNARTJÄNSTERNA HJÄLPER TILL MED OCH SOM ÄR VIKTIGT FÖR ATT SJUKDOMEN INTE SKA TA FÖR STOR PLATS I HABIBS VARDAG.

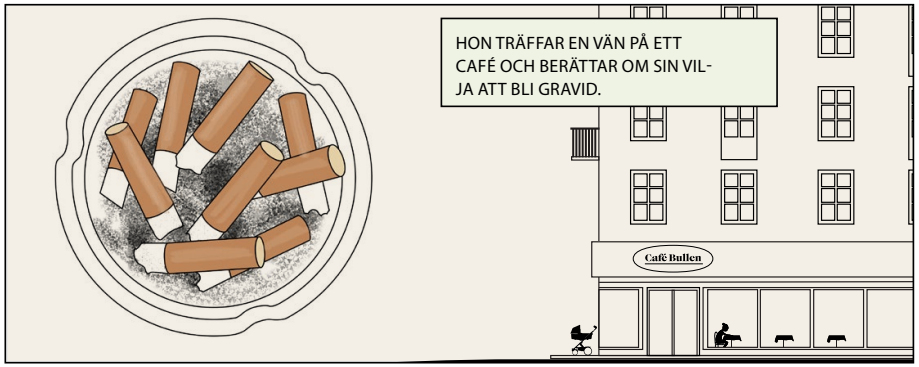


1177 VÅRDGUIDEN | Stockholms läns landsting | Transformator design

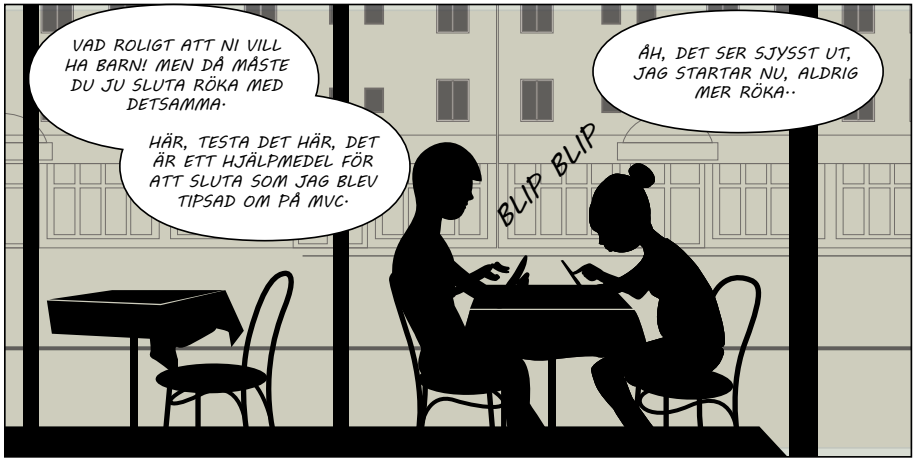
SLUTA RÖKA



NADINE VILL BLI GRAVID OCH HAR BÖRJAT FUNDERA PÅ ATT SLUTA RÖKA, MEN INTE TAGIT FÖRSTA STEGET ÄN.



HON TRÄFFAR EN VÄN PÅ ETT CAFÉ OCH BERÄTTAR OM SIN VILJA ATT BLI GRAVID.

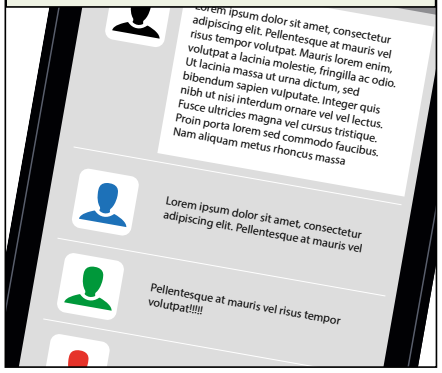


FÖRSTA DAGARNA GÅR BRA

NADINE FÅR OCKSÅ UPPMUNTRANDE MEDDELANDEN OM ATT HON GÖR RÄTT SOM INTE RÖKER.

MEN VISSA STUNDER ÄR DET SVÅRT OCH NÄR HON ÄR NÄRA ATT FÅ ÅTERFALL SÖKER HON STÖD OCH MOTIVATION GENOM TJÄNSTEN

ETT VERKTYG SOM FUNGERAR BRA FÖR NADINE ÄR ATT ANVÄNDA FORUM. HÄR FÅR HON KONTAKT MED ANDRA OCH KAN DELA TIPS.



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Initial Requirements

User Stories

https://www.mountaingoatsoftware.com/agile/user-stories

As a <type of user>, I want <some goal> so that <some reason>.

As a power user, I can specify files or folders to backup based on file size, date created and date modified.

As a user, I can indicate folders not to backup so that my backup drive isn't filled up with things I don't need saved.

Epics are stories with a wider scope

As a graphic designer, I want to peripherally see related images to what I work on, so that I can look at them if I need inspiration.

Epics are broken down into stories

1. Som grafisk designer vill jag att datorn tolkar vad jag ritar medan jag ritar för att skapa underlag för sökning av relaterade bilder.
2. Som grafisk designer vill jag att datorn hittar bilder som är relaterade till det jag ritar och som kan fungera inspirerande för mitt arbete.
3. Som grafisk designer vill jag att datorn presenterar inspirerande bilder som hjälper mig komma vidare i mitt skissande.
4. Som grafisk designer vill jag att datorn presenterar inspirerande bilder på ett perifert sätt, så att jag inte blir distraherad om jag vill fokusera på mitt skissande men också så att jag kan få hjälp att komma vidare om jag önskar det.

Use cases

Publish a Short Story

Primary Actors: Writer
Proofreader
Editor
Agent
Publishing house
Distributor
Bookseller

Level: Summary

Main Success Scenario

1. Writer drafts a short story.
2. Proofreader reviews short story.
3. Editor suggest changes to the story.
4. Writer incorporates edits.
5. Agent contacts publishing houses and sells short story.
6. Distributor packages story.
7. Bookseller delivers story to consumers.

Extensions

1a. Writer does not meet deadline.
1a1. Editor extends the deadline, or cancels the project.
3a. Editor does not like the direction of the story.
3a1. Writer incorporates major revisions to story.
3a2. Writer starts from scratch.
5a. Agent not successful in selling story.
5a1. Agent or writer tries alternate publishing channel.
7a. Bookseller does not sell enough copies of the story.
7a1. Bookseller discounts inventory.
7a2. Bookseller sends copies back to publishing house.

Note on non-functional requirements

- Qualities and UX-goals
- Product properties
- Constraints

mattias.arvola@liu

@mattiasarvola

www.liu.se

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