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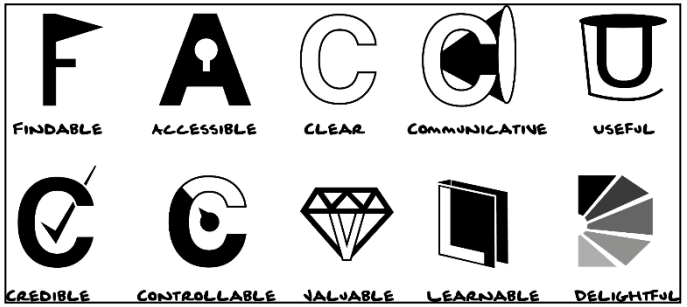
Lecture 6 - How to interpret data and use it to direct the design process
16.03.2017

Expert and user driven usability testing.



- Heuristics testing is a test done **by experts.**
- Find and identify problems with usability.
- Done Through out the proces.
- Flexible in terms of time, ressources and focus.
- Abby Covert (Define goals to evaluate against).
- **Cannot** substitute a user driven usability test.

- Combine with user driven usability testing.
- Employ the user to understand the user.
- Gain “real” insight to support choices.
- Always a constructed setting, but still wroth it.
- They are difficult to do – keep focus on users.

What happened last time?

Observation and Participation.

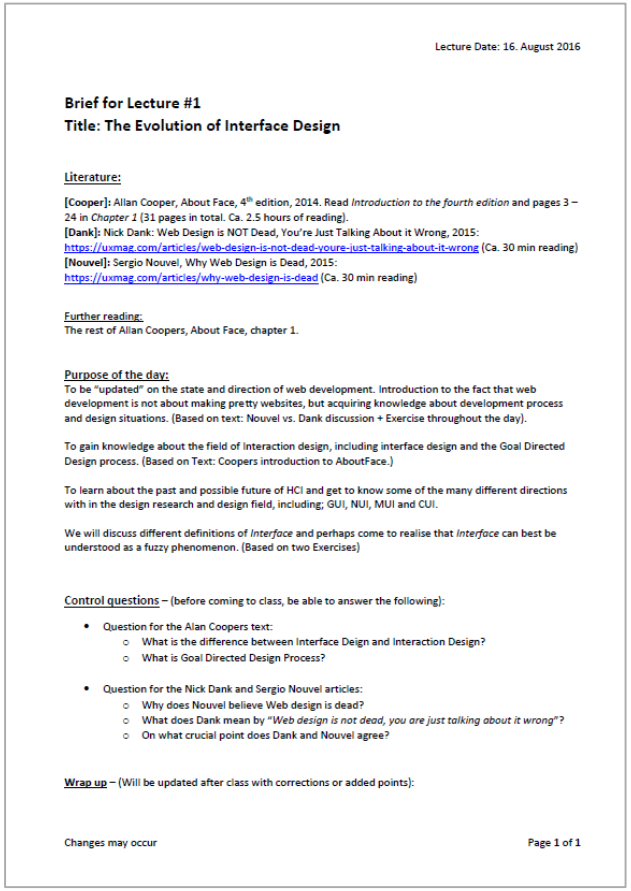
- Qualitative research methods.
- Gain “real” insight to support choices.
- Feel the challenges the users encounter.
- Uncover hidden knowledge and understand the difference between saying and doing.

- Defeat goalkeepers.
- Easy to conduct hard to analyze and use after.
- Not cheap but worth the time and money.

What happened last time?

This time:

Topic: How to interpret data and use it to direct the design process.



Lecture Date: 16. August 2016

Brief for Lecture #1
Title: The Evolution of Interface Design

Literature:

[Cooper]: Allan Cooper, About Face, 4th edition, 2014. Read *Introduction to the fourth edition* and pages 3 – 24 in *Chapter 1* (31 pages in total. Ca. 2.5 hours of reading).
[Dank]: Nick Dank: Web Design is NOT Dead, You're Just Talking About it Wrong, 2015: https://uxmag.com/articles/web-design-is-not-dead-youre-just-talking-about-it-wrong (Ca. 30 min reading)
[Nouvel]: Sergio Nouvel, Why Web Design is Dead, 2015: https://uxmag.com/articles/why-web-design-is-dead (Ca. 30 min reading)

Further reading:
The rest of Allan Coopers, About Face, chapter 1.

Purpose of the day:
To be "updated" on the state and direction of web development. Introduction to the fact that web development is not about making pretty websites, but acquiring knowledge about development process and design situations. (Based on text: Nouvel vs. Dank discussion + Exercise throughout the day).

To gain knowledge about the field of Interaction design, including interface design and the Goal Directed Design process. (Based on Text: Coopers introduction to AboutFace.)

To learn about the past and possible future of HCI and get to know some of the many different directions with in the design research and design field, including; GUI, NUI, MUI and CUI.

We will discuss different definitions of *Interface* and perhaps come to realise that *Interface* can best be understood as a fuzzy phenomenon. (Based on two Exercises)

Control questions – (before coming to class, be able to answer the following):

- Question for the Alan Coopers text:
  - What is the difference between Interface Deign and Interaction Design?
  - What is Goal Directed Design Process?
- Question for the Nick Dank and Sergio Nouvel articles:
  - Why does Nouvel believe Web design is dead?
  - What does Dank mean by *"Web design is not dead, you are just talking about it wrong"*?
  - On what crucial point does Dank and Nouvel agree?

Wrap up – (Will be updated after class with corrections or added points):

Changes may occur

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Homework and preparation

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Time	Subject
8.30	Agenda and recap from last week
9.00	Wicked Problems
9.40	Development methods and Design processes
10.00	**Break**
10.30	Personas
11.10	Scenarios
11.55	Recap + Homework
12.00	**Dismissed**

Today's agenda

Design thinking

Design thinking and Wicked problems

Design Thinking

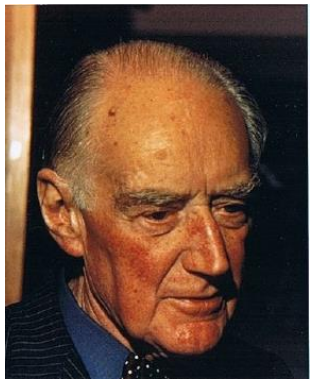
Why a Science of Design –
"A concern to connect and integrate useful knowledge from the arts and sciences alike, but in ways that are suited to the problems and purposes of the present" (6) (Design problems/wicked problems).

Design is to be understood **very broad**:

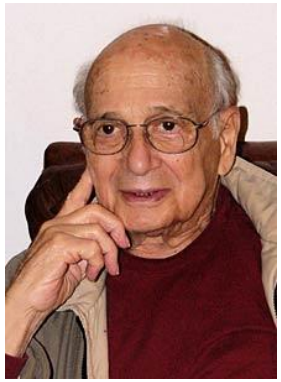
- Symbolic and visual communication (Graphic, Books, PCs)
- Material objects (clothing, objects, tools, vehicles)
- Activities and organized services (logistics, strategic planning)
- Complex systems or environments for living, working, playing, and learning. (urban, sustainability, culture)

Design Thinking

Many sciences with a shared understanding: “The conception and planning of the artificial.”(14)



Rittel



Webber

Horst W. J. Rittel
Professor focused on design thinking and planning.

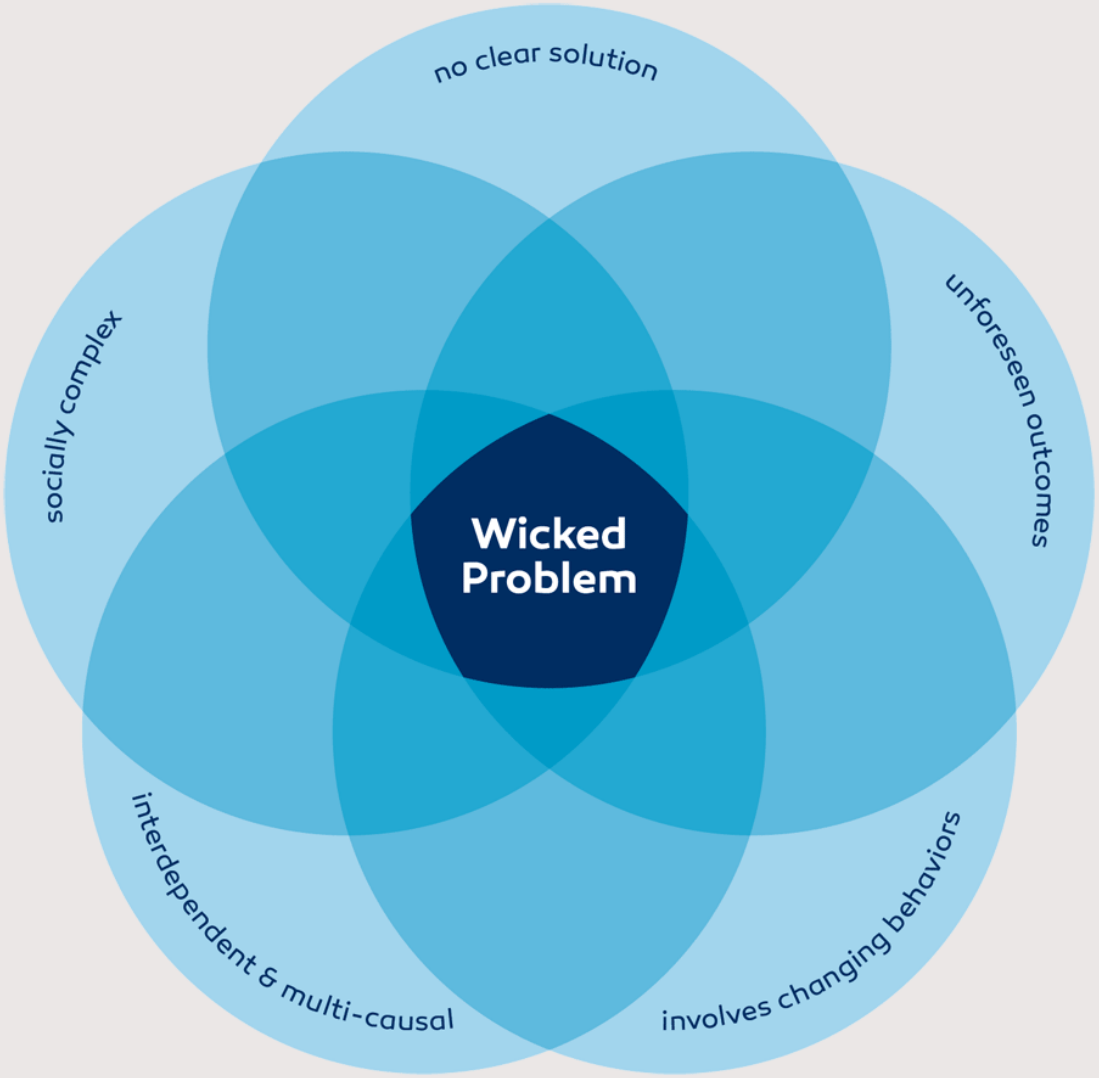
Wicked problems are everywhere and they are
extremely difficult to define!?

Think of them as the
opposite of tame problems.

A tame problem:
You know a button is missing!
You know where it is missing!
You know what code to implement and where!

A wicked problem:
The problem of defining a problem and locating it + identifying actions need to go from what-is to what-ought-to-be. (p. 159 in Rittel)

An understanding



Digital Dannelse

What is digital literacy according to:

Children?

Parents?

Teachers?

Simplifying the wickedness

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1. *There is no definitive formulation of a wicked problem.*
Here by the term formulation Rittel means the set of all the information need to understand and to solve the problem. By definitive he means exhaustive.

2. *Wicked problems have no stopping rule.*
There are no objective criteria for determining when a wicked problem has been solved. Designers can always go on trying to do a better job designing. Design projects end not because of the "logic of the problem" but because of limits of resources such as time, money, manpower. etc.

Wicked problems
http://jburge.faculty.wesleyan.edu/files/2015/10/DCC14_WP_final.pdf

3. *Solutions to wicked problems are not true-false, but good-bad.*
Determining whether a solution is good is a value judgment, not a factual judgment. There are no objective means for making value judgments; so such judgments are often disputed, even by reasonable and informed people.

4. *There is no immediate and no ultimate test of a solution to a wicked problem.*
A solution to a wicked problem generates chains of consequences extending far into the future. Since unknown future consequences might outweigh known near-term consequences, the designer never really knows how good a solution is.

Wicked problems
http://jburge.faculty.wesleyan.edu/files/2015/10/DCC14_WP_final.pdf

5. *Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly.*
A solution to a wicked problem has irreversible, real-world consequences; so trial-and-error is not ethically defensible.

6. *Wicked problems do not have an enumerable (or exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.*
For wicked problems, it is not possible to prove that any list of solutions is complete. Designers can always try to devise new solution ideas.




Wicked problems
http://jburge.faculty.wesleyan.edu/files/2015/10/DCC14_WP_final.pdf

7. *Every wicked problem is essentially unique.*
No matter how similar a new wicked problem looks to a previous wicked problem, there is no guarantee that the new one will not have unique factors that are of overriding importance.

8. *Every wicked problem can be considered a symptom of another wicked problem.*
There are two ways of solving a given wicked problem. One is by solving it directly. The other is by considering it to be a symptom of (caused by) another wicked problem and then solving that other problem.

SKAT

KMD

9. *The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's solution.* Different people may have different ideas about what causes a given wicked problem and, thus, how to solve it. There are no objective methods for settling such differences of opinion.

10. *The designer has no right to be wrong.* Designers are legally and morally responsible for the consequences of their design decisions, because those consequences take the form of irreversible effects on people.

Wicked problems
http://jburge.faculty.wesleyan.edu/files/2015/10/DCC14_WP_final.pdf

Determinism
Everything can be understood, explain and solved by applying relevant theories. Things are set.

Indeterminism
Everything is unique and requires us to formulate new theories in order to explain it. Things are free.

Wicked problems hold elements of indeterminacy. But we can fix that.

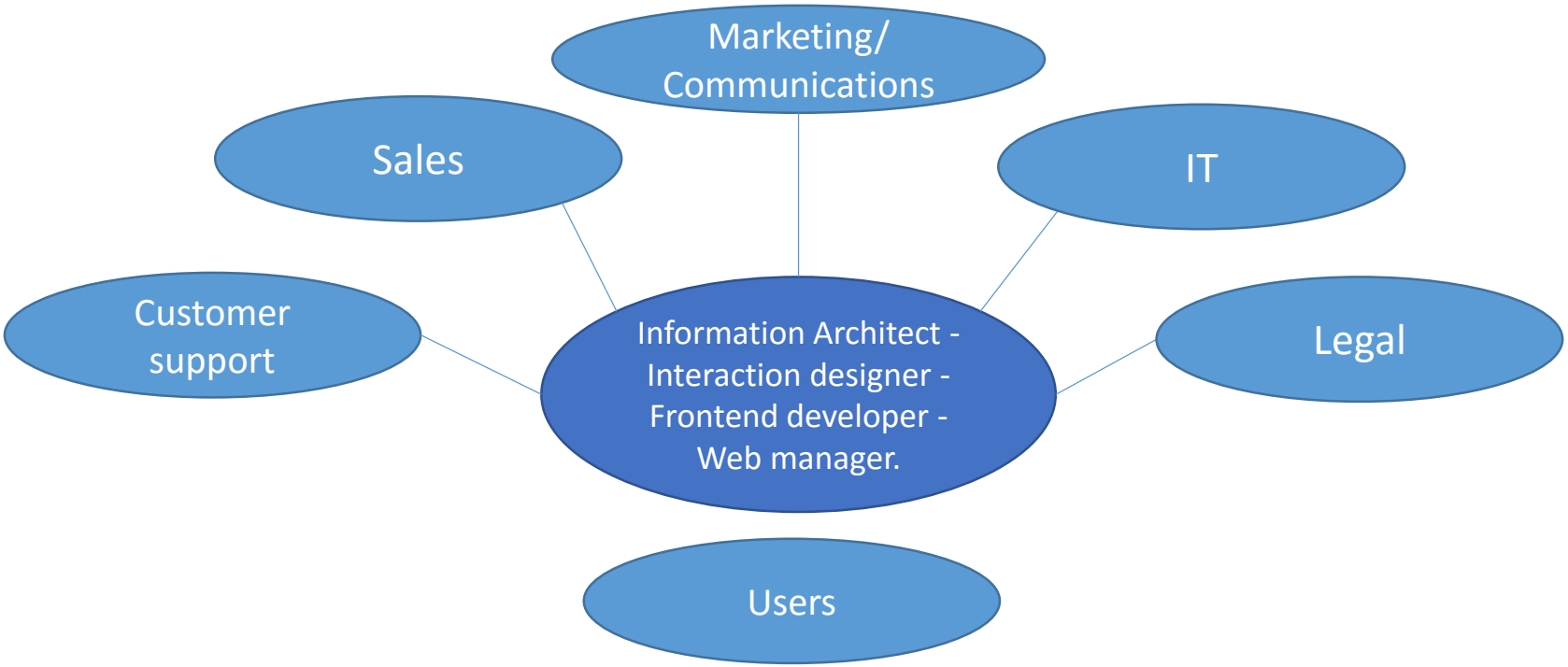
Wicked problems can be difficult to understand.
Help each other out - **20 minutes.**

- Can implementing “Rejsekortet” across Denmark in all types of public transportation be considered a wicked problem? Why/not?

- Can designing a website for Terapi-Hobby be considered a wicked problem? Use the ten properties of Wicked problems and your own experience as a frame for the analysis

- When have you, worked with a wicked problem? (What was the problem and why was it wicked?) Did you find a solution?

Wicked problems on both sides of the ”design situation”.

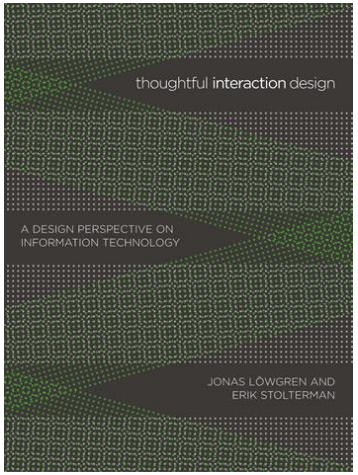


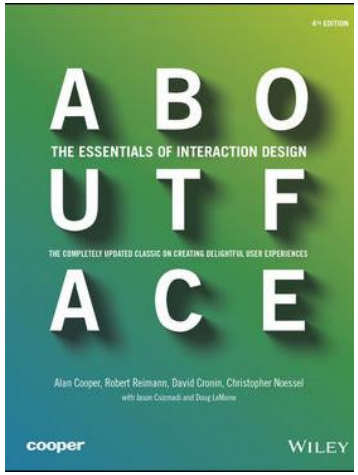
It is going to be a mess

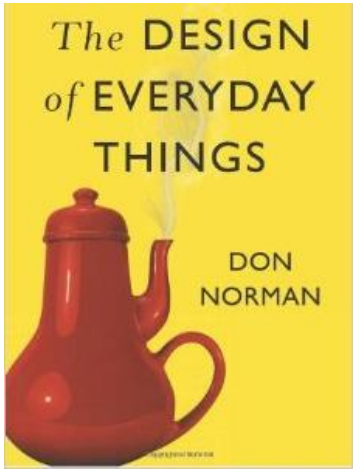
The solution might be to simple solve wicked problems as tame ones and deal with the resulting problems…

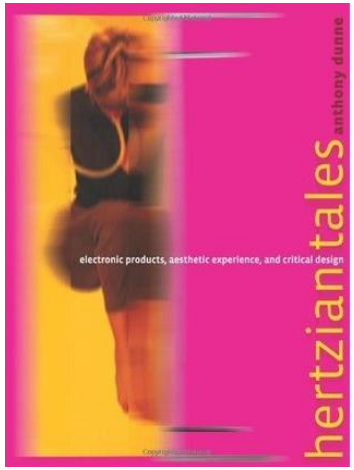
… or …

… you could do you best at collecting user research, be experienced at interpretation and continue to evolve test methods that ensure enlightened and well informed design choices.









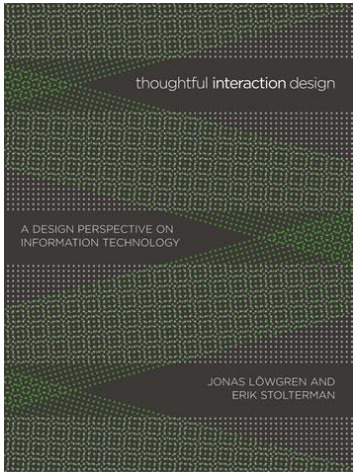
Solving wicked problems

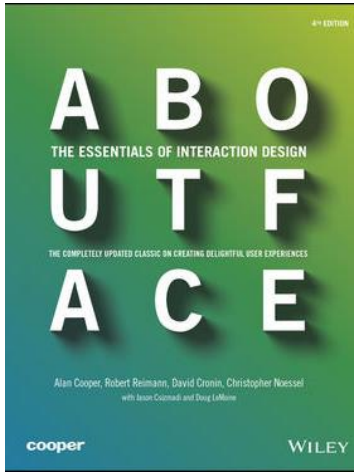
This will allow you to move from **Undetermined** problems to **Determined** problems.

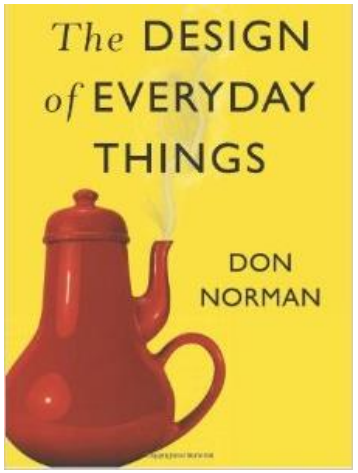
Being in a field of the *particular*, theory will always be a guide, never a recipe.

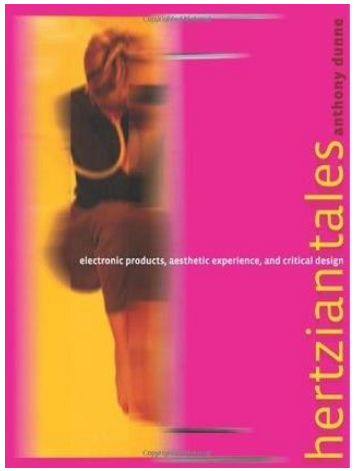
Part of the challenge is "placement" (or framing) leading to a *principle of relevance* for knowledge and data collected.

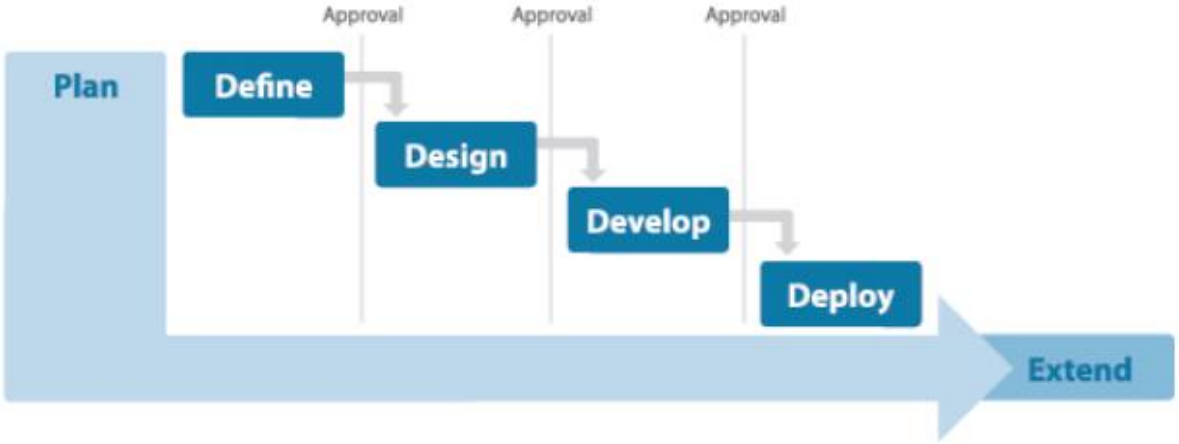
We must be agile so we can learn.



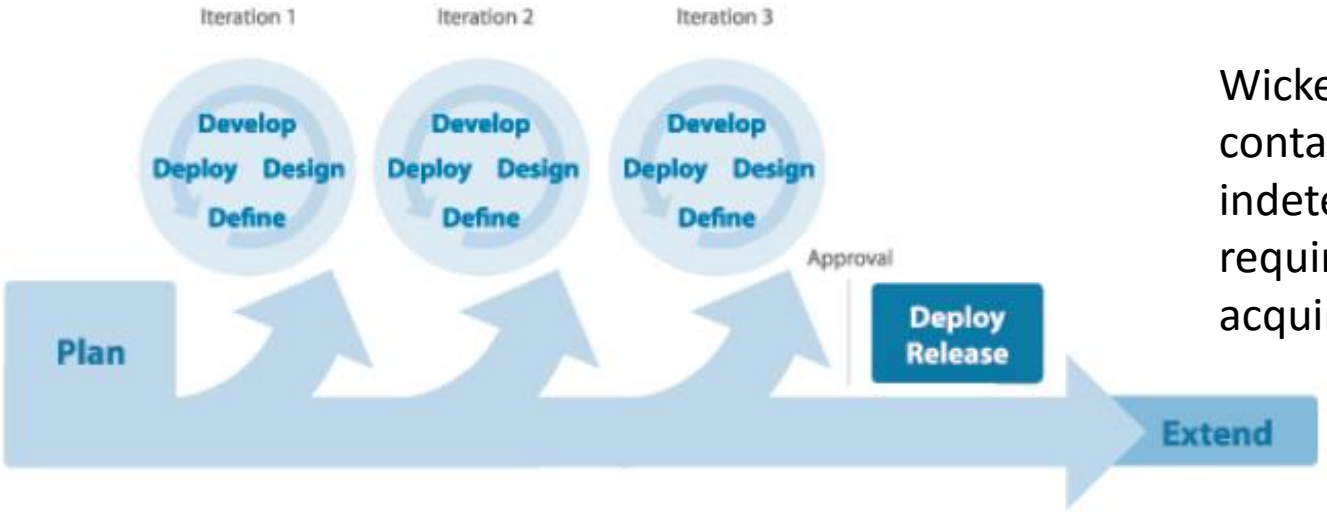






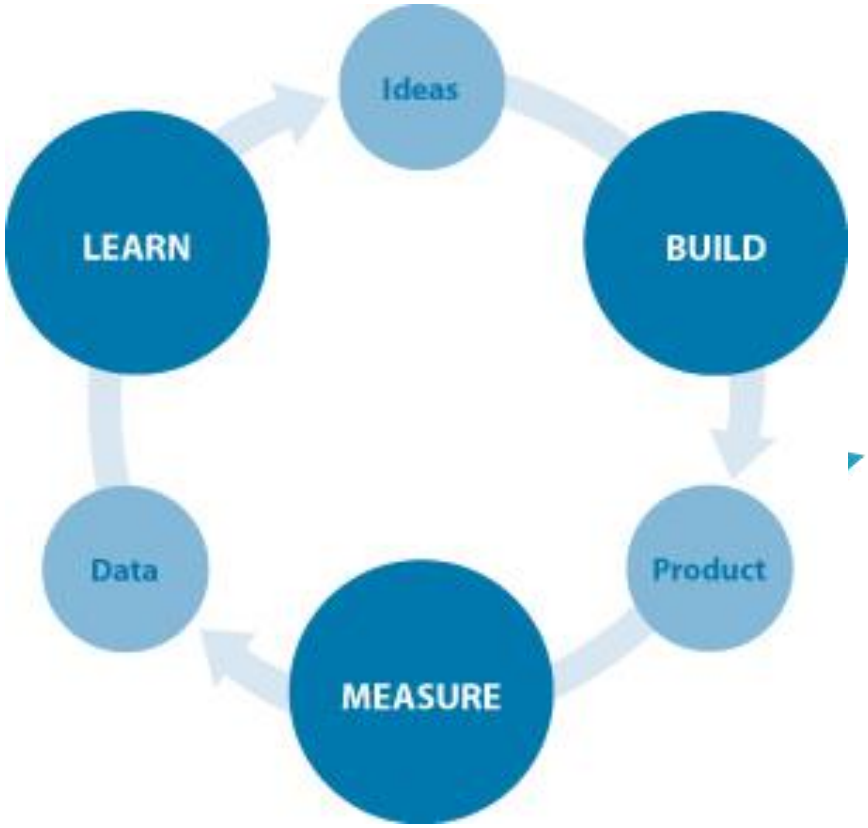


Part 1. Analytic problem definition where elements are found
+
Part 2. Synthetic problem solution where elements are balanced.



Wicked problems contain an indeterminacy and requires iterations of acquiring knowledge.

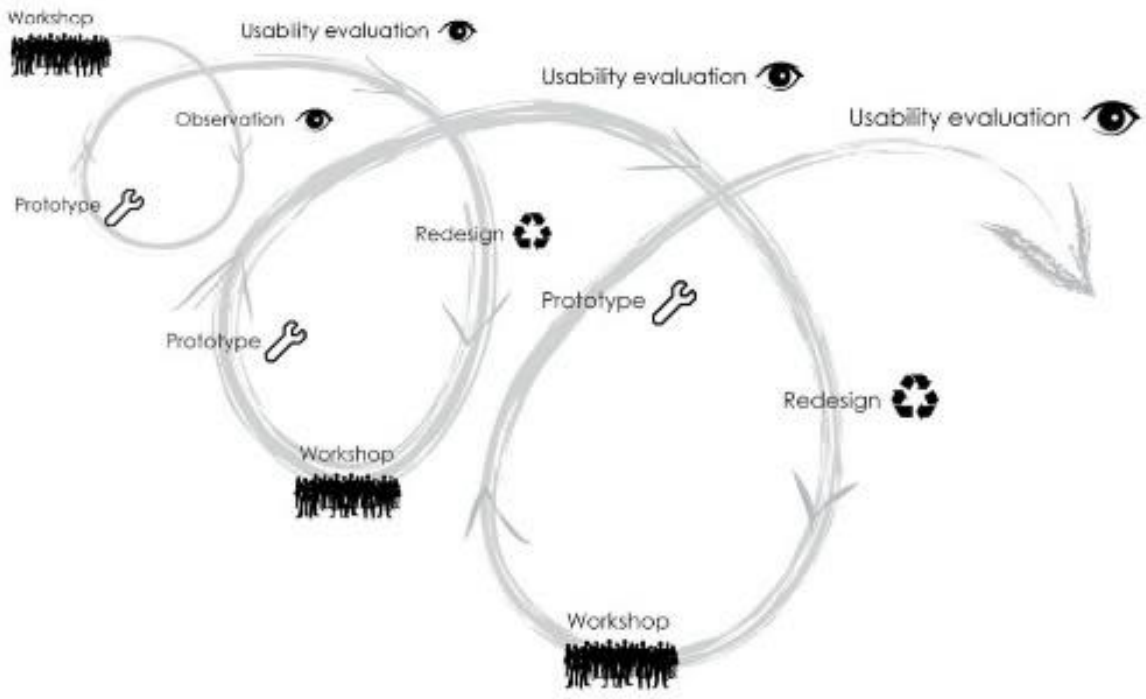
Waterfall or Agile



The soul of agile is not just iterations – it is moving from **under-determined** problems to **determined** problems by continuously looking back to learn and then look forward to plan ahead.

This allows us to change pace and direction to deal with wicked problems.

Be aware – the problem of documentation, and **agile** does not mean you can do what you want when you want!!



Making room for a wicked problem

https://www.theguardian.com/us-news/ng-interactive/2015/jun/01/the-counted-police-killings-us-database#

1. Wicked Problem:

- What type of website is this?
- What is this sites primary mission?
  - Is there another mission than the primary one?
  - are the missions achieved? How or why not?
  - What data is required and how is the site maintained?

- Is there more than one user group?
  - How different are they, and do they have the same goal?

2. Design elements:

- How is discoverability and Understanding supported?
- What would you re-design or A/B test to improve?

https://www.theguardian.com/us-news/ng-interactive/2015/jun/01/the-counted-police-killings-us-database#

Break 30 min

Time	Subject
10.30	Personas
11.10	Scenarios
11.55	Recap of the day + Homework and preparation
12.00	**Dismissed**

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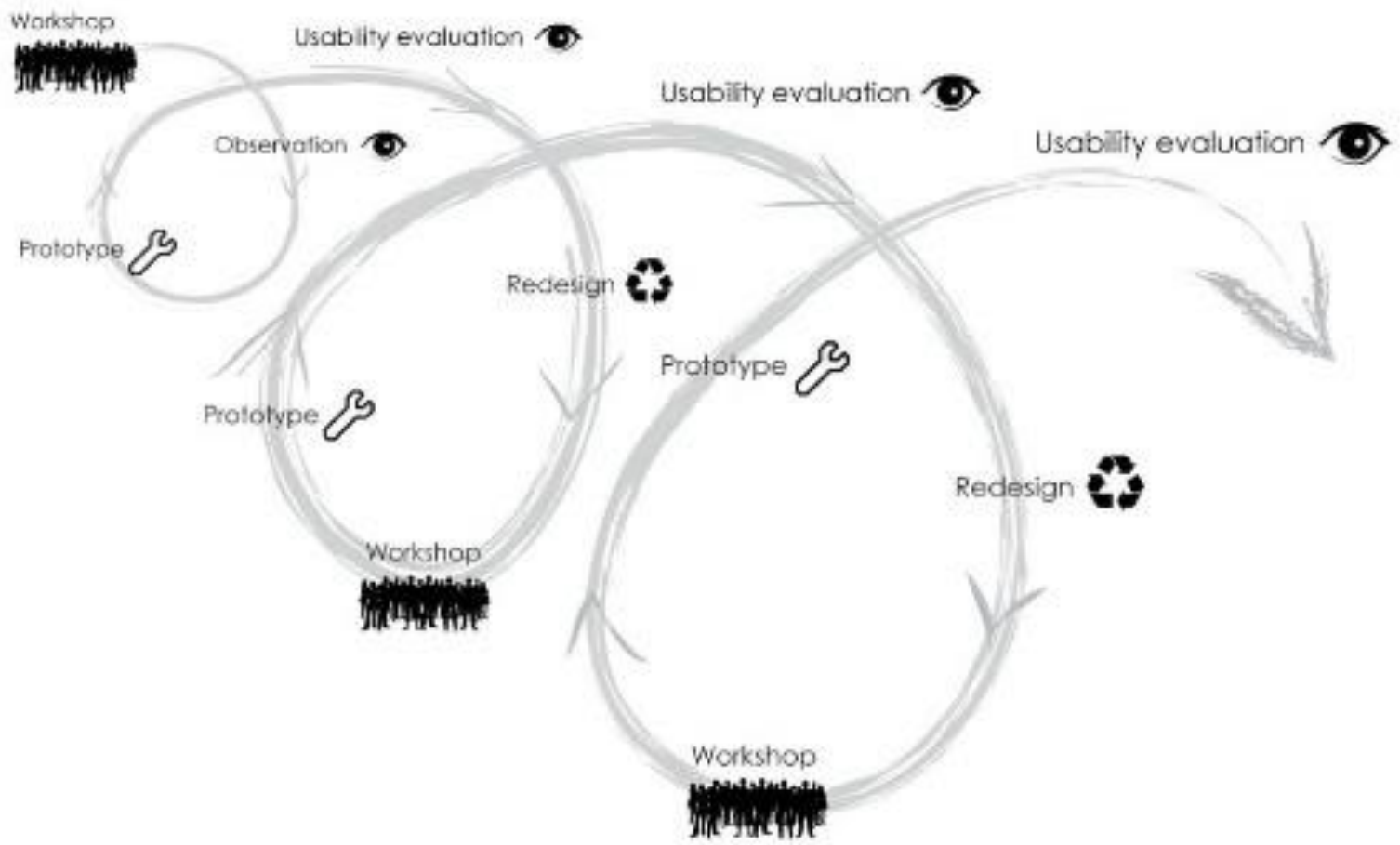

Making room for a wicked problem

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The right method is governed by the problem:

What you want to know, controls the method – not the other way around.

Qualitative researches seek "saturation"

- "How many" is not the issue. Do you understand the phenomenon? Have you learned enough?
- Mere numbers are irrelevant. You want deep understanding.

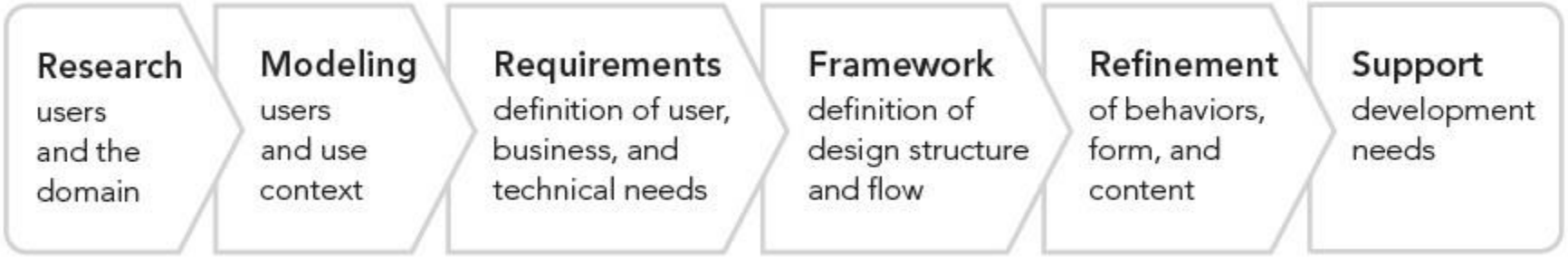
Quantitative researchers seek statistical validity

- Can you safely generalize to the population? Have you systematically excluded anyone?

Being goal oriented

The method, or structure, of your research depends on the project(wicked):

- Brand, Marketing or Content site/app.
- Task-based site/app for single user or multiple users.
- Communicate brand values, Demonstrating values?
- Generate an interest and buzz?
- Enable users to actively doing something?
- Mobile version, web site, social media platform, print material?



Before you start any process

What is what in the life of a user researcher?

Make a diagram and plot each method.

- Observation
- Interview
- Questionnaires in Surveys
- Competitor analysis
- Heuristic
- User driven usability test
- Focus groups
- Participation
- A/B split test
- Heat Map(Eye or mouse track)
- Analytics Report

We talked about generating data…

… today we have talk about problems and understanding them.

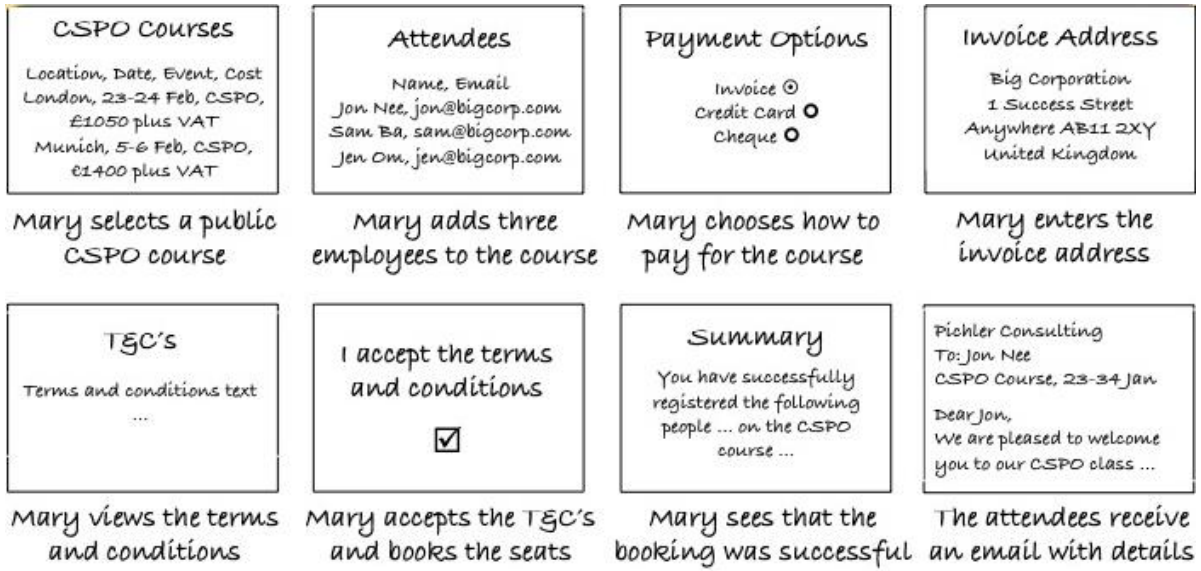
Now lets talk about using data to solve problems!

What is the difference between:

- Profile?
- Persona?
- Scenario?
- Use case?
- Journey Map?

Any experience working with either one? Examples?

Scenario vs use case vs personas



Use cases focus on the technical system and less on the user himself:

Use cases can be used to focuson problematic interaction with a system that you want to improve. They tend to see all users as equal and make no distinction for context or use situation.

Personas are models that collect and qualify your research data. They are made up of the data you collected when you researched different users.

Personas are great for answering wicked problems… why?

Personas allows you to think and work with users and their attitudes and behaviours in specific contexts. They personify the design situation and evoking empathy.

Figure 3-1: If you try to design an automobile that pleases every possible driver, you end up with a car with every possible feature that pleases nobody. Software today is too often designed to please too many users, resulting in low user satisfaction. Figure 3-2 provides an alternative approach.

Personas provide information about whom the user is. Including specific information about why the user wants to engage with a certain product, but not how this is done.

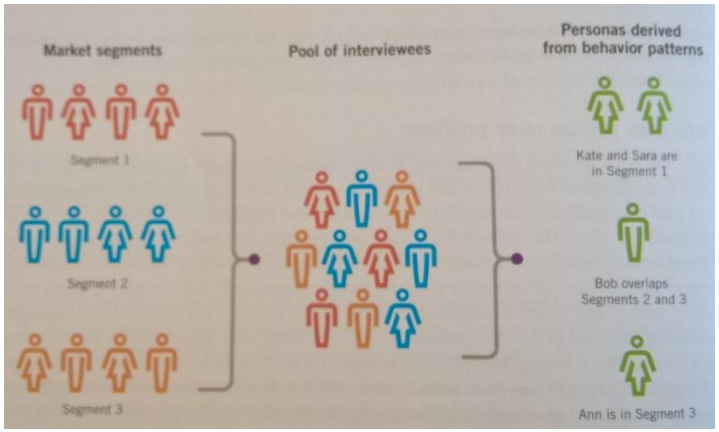
“Personas model goals”.

Personas are used to build trustworthy scenarios focusing on actual people and not just what the designer thinks or what the client wants.

Personas gather user groups together and represent them as archetypes (not stereotypes) which lets you test you design against a large part of the user group.

“If the designer does not respect his persona, no one else will either”

Use segmentation tools, user profiles and demographics to inform you persona, but don’t rely on them.



Personas…

… are based on research.

… represents types of users of a specific product.

… explore ranges of behaviour.

… have motivations.

… represents relevant nonusers.

Understanding goals – Goals motivate usage patters and arise from different cognitive processes. More on this later.

1. Group interview subjects by role. (What type of user did you interview)

2. Identify behavioural variables. (What behaviour is associated with that user type)

3. Map interview subjects to behavioural variables. (How type specific were interviewees)

4. Identify significant behaviour patters. (Pick the most common behaviours as basis persona)

5. Synthesize characteristics and define goals. (Reality check and thicken common behaviours)

6. Check for completeness and redundancy. (What he says – evaluate personas)

7. Designate persona types. (Primary, Secondary and Supplemental)

8. Expand the description of attributes and behaviours. (Write a narrative from what you have)

How to build (believable) personas

- See more in Coopers text

Nikki

CREATOR

PRIMARY

foviance

'I need to know the businesses can be trusted.'

Occupation: Housing Coordinator

Age: 32

Home life: Lives with partner and her dog

Hobbies: Cycling, dancing and socialising

About Nikki

Nikki works in a team, finding housing for vulnerable people. She has fairly structured days, that consist of meeting with people and using her computer. She like to be in control of her work life, but her personal life is far more spontaneous. She plays a key role in her company's social activities.

She has just taken a call from her partner and has been told her washing machine has flooded her kitchen.

Key differentiators

- Priority listings are trusted
- Description of businesses aid decision making
- Reads reviews to help with decisions
- Writes reviews frequently

Use of the web:

Low — High

Reads reviews:

Weekly — Monthly — Never

Writes reviews:

Weekly — Monthly — Never

Planner vs spontaneous:

Planner — Spontaneous

Likely route to BT Exchanges:

Referred — Direct

Goals & Behaviours

Goals

- To contact businesses in priority listings as a first step, as assumes that they are tried and tested businesses
- To read reviews to help with decision making
- To contact companies via free call options to see if they are able to help her

Behaviours

- Uses Google as her starting point
- Has a couple of directories saved in her bookmarks
- Uses directories for research
- Uses specific sites to help with planning events, such as Event Elephant
- Reads reviews to aid decision making, but is likely to ask friends before she makes a significant purchase
- Writes reviews on sites she frequents

Internet Behaviour

- Always online, and loves to interact with her friends on a variety of social networking sites, such as Facebook
- Doesn't spend all her time in front of a computer at work
- An advanced computer user
- Owns an Apple Macintosh, and hates when sites do not work on her computer
- Like to use WiFi when travelling

Wish List

- Wants to be able to see the opening times of businesses to know if they are worth contacting
- Is interested to read what the size of company is, so she can make a decision on if they are worth contacting
- Social networking groups on BT to be able to see what trusted people have rated and recommended

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Discuss what meaning is implied by the word:

User?	Contact?
Human?	Gamer?
Profile?	Player?
Customer?	Subscriber?
Visitor?	Contributor?
Buyer?	Fan?
Client?	Person?

How we talk about something affects how we understand it! Be careful when choosing your words(understanding).

”Do you belive in the users?”

Scenarios - any experience?

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“Design problem solving by concretization”(104)

Don’t do endless iterations with guesses.
Don’t get caught in “I like” arguments.

Scenarios helps you to convey a narrative that captures **what a user does** to complete a task - and his **primary motivation** behind doing so.

Scenarios are based on your persona and knowledge of the design situation…
… your persona and knowledge of the design situation is based on you research of users and their goals.

Bad example of Scenario(or persona) creation:

Client:

1. I want to make page – I believe my users need this.
2. Tada! my page is done.
3. It is not doing to well?!
4. I do not know why (wicked problem).
5. Hire designer.

Designer:

1. Sure I will help – I will make a scenario.
2. I believe your user are like this and need this.
3. Propose a new page and launch it.
4. Still not doing to well
5. Same problem (wicked problem)

You may be an experience designer - and the site will properly be better.

But its not a valid solution. All you did was change the owners assumptions into your own assumptions!

Dont be this kind of developer

There are two basic kinds of scenarios:

1. Present scenarios (Use scenario or context scenario):
   - Show what is now.
   - Uncovers current use experience and potential problems.
   - Dos not focus on a particular problem but shows the entire user experience - including both good and bad.

2. Future Scenarios (Solution scenario or key path scenario):
   - Show what ought to be when the solution is implemented.
   - Predicts user experience after implementation of changes.
   - Re-evaluates goal of design continuously.
   - Restate the goal of the design process and focus of team.

A good scenario answers the following questions:

- Who is the user? (the persona)
- What are the users goals and motivations?
- What is necessary for the user to accomplish her goal?
- Why would the user engage with this particular product or company. What would lure the user to this moment?
- What does the user need to do – to interact with? How is the goal accomplished? And how does the user feel?

Coopers “easy” six step guide:

1. Create problem and vision statements. (Agree upon the “what” and “how”)
2. **Explore and brainstorm.** (Designing. Get rid of preconceptions and move from analysing data to solution thinking)
3. Identify persona expectations. (Copy-past from persona and fill out)
4. Construct context scenarios. (Make it believable and real – not systematic)
5. Identify design requirements. (Data, functions and context needs)
6. Moving on to the actual design part – the fun part ☺

Vivien's context scenario:

1. While getting ready in the morning, Vivien uses her phone to check e-mail. It has a large enough screen and quick connection time so that it's more convenient than booting up a computer as she rushes to make her daughter, Alice, a sandwich for school.

2. Vivien sees an e-mail from her newest client, Frank, who wants to see a house this afternoon. Vivien entered his contact info a few days ago, so now she can call him with a simple action right from the e-mail screen.

3. While on the phone with Frank, Vivien switches to speakerphone so she can look at the screen while talking. She looks at her appointments to see when she's free. When she creates a new appointment, the phone automatically makes it an appointment with Frank, because it knows with whom she is talking. She quickly keys the address of the property into the appointment as she finishes her conversation.

4. After sending Alice off to school, Vivien heads into the real-estate office to gather the papers she needs for the plumber working on another property. Her phone has already updated her Outlook appointments, so the rest of the office knows where she'll be in the afternoon.

5. The day goes by quickly, and she's running a bit late. As she heads towards the

Om morgenen cykler Oliver af sted mod stationen

Bliver undervejs i tvivl om han når toget. Skynder sig

Ankommer til stationen forpustet og varm

Vil parkere sin cykel, men der er fyldt i cykelstativet

Scenario example

BUSINESS ACADEMY AARHUS

Scenario example

Make it usefull

BUSINESS ACADEMY
AARHUS

Build a persona and a scenario!

Opsamling

Step 1. - Stand up and go get a card.

Step 2. - Find a partner to form a couple.

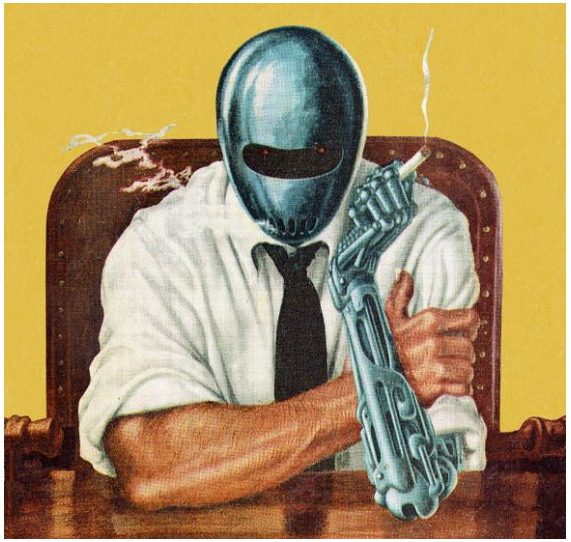
Step 3. - Ask your partner the question on your card. Listen to the answer and correct it, if it is wrong.

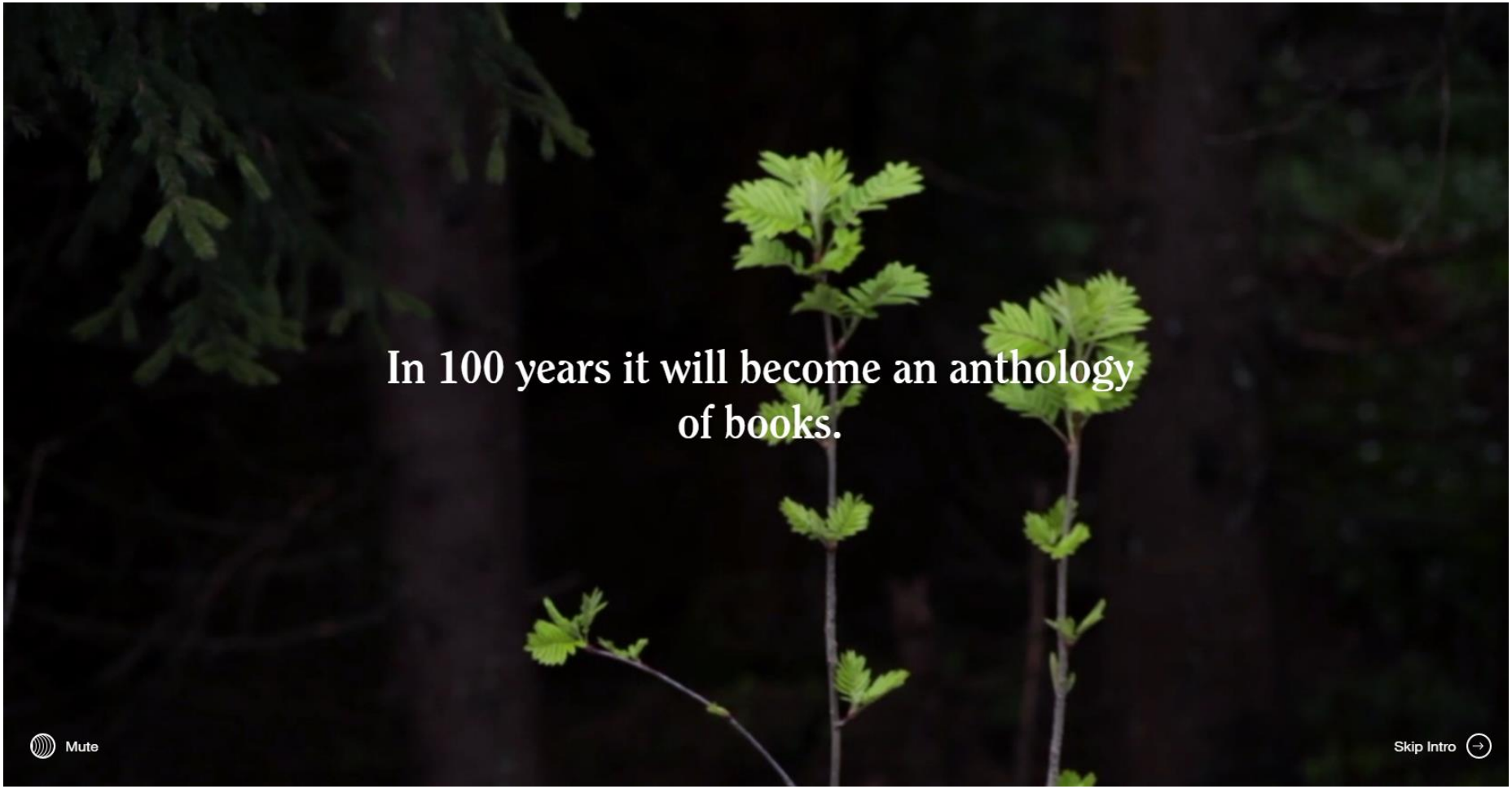
Step 4. - Answer the question your partner asks you.

Step 5. - Switch cards with your partner.

Step 6. - Raise your hand and find a new partner.

Step 7. - Repeat from Step 3.





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BUSINESS ACADEMY AARHUS

1. Wicked Problem:

- What type of website is this?
- What is this sites primary mission?
  - Is there another mission than the primary one?
  - are the missions achieved? How or why not?
  - What data is required and how is the site maintained?

- Is there more than one user group?
  - How different are they, and do they have the same goal?

2. Design elements:

- How is discoverability and Understanding supported?

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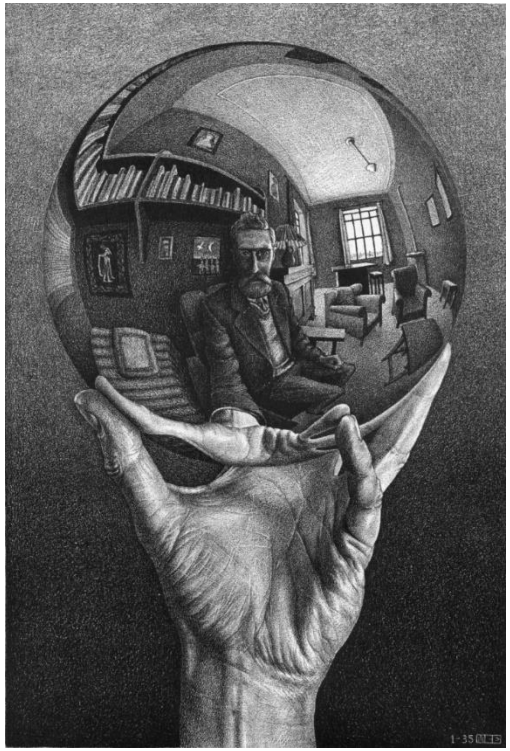
Wicked problems.

- Hard to define with no final solution.
- No room for trial and error but high responsibility.
- Involves people and social relations with different goals.
- Great way of analysing / understanding you situation.



The design process.

- Agile processes fit wicked problems.
- Waterfall process fit tame problems.
- Think in iterations of continued learning.

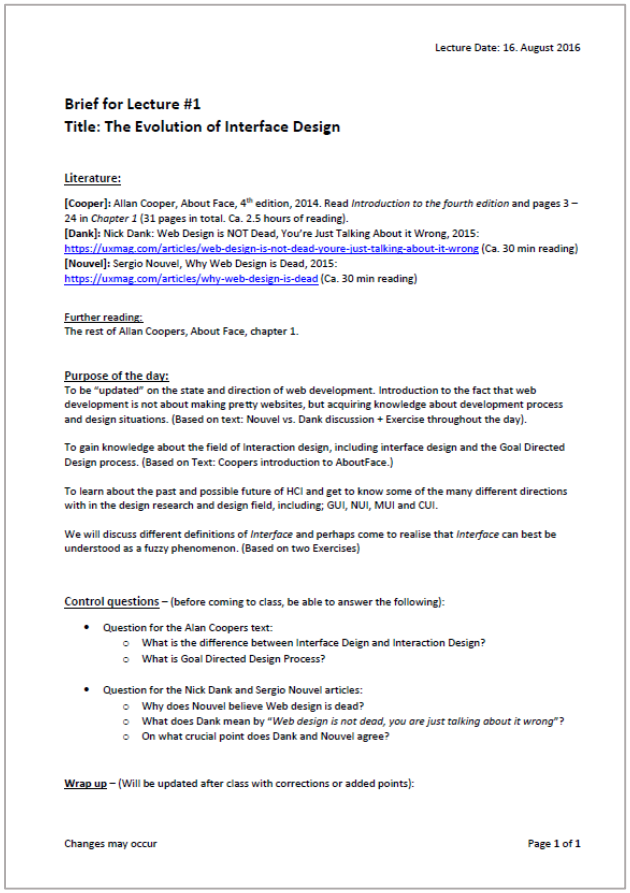
Personas and scenarios.

- Build on research to provide knowledge for decisions.
- Active tools for the design process ensuring user focus.
- Uncovers hidden truths and makes them operational.

What happened today?

Next time:

Topic: Journey map Workshop.



Lecture Date: 16. August 2016

Brief for Lecture #1
Title: The Evolution of Interface Design

Literature:

[Cooper]: Allan Cooper, About Face, 4th edition, 2014. Read *Introduction to the fourth edition* and pages 3 – 24 in *Chapter 1* (31 pages in total. Ca. 2.5 hours of reading).
[Dank]: Nick Dank: Web Design is NOT Dead, You're Just Talking About it Wrong, 2015: https://uxmag.com/articles/web-design-is-not-dead-youre-just-talking-about-it-wrong (Ca. 30 min reading)
[Nouvel]: Sergio Nouvel, Why Web Design is Dead, 2015: https://uxmag.com/articles/why-web-design-is-dead (Ca. 30 min reading)

Further reading:
The rest of Allan Coopers, About Face, chapter 1.

Purpose of the day:
To be "updated" on the state and direction of web development. Introduction to the fact that web development is not about making pretty websites, but acquiring knowledge about development process and design situations. (Based on text: Nouvel vs. Dank discussion + Exercise throughout the day).

To gain knowledge about the field of Interaction design, including interface design and the Goal Directed Design process. (Based on Text: Coopers introduction to AboutFace.)

To learn about the past and possible future of HCI and get to know some of the many different directions with in the design research and design field, including; GUI, NUI, MUI and CUI.

We will discuss different definitions of *Interface* and perhaps come to realise that *Interface* can best be understood as a fuzzy phenomenon. (Based on two Exercises)

Control questions – (before coming to class, be able to answer the following):

- Question for the Alan Coopers text:
  - What is the difference between Interface Deign and Interaction Design?
  - What is Goal Directed Design Process?
- Question for the Nick Dank and Sergio Nouvel articles:
  - Why does Nouvel believe Web design is dead?
  - What does Dank mean by "*Web design is not dead, you are just talking about it wrong*"?
  - On what crucial point does Dank and Nouvel agree?

Wrap up – (Will be updated after class with corrections or added points):

Changes may occur

Page 1 of 1

Homework and preparation