Design and Evaluation of Interactive Systems

Idea generation (Phase II)

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lectures adapted from Wendy E. Mackay

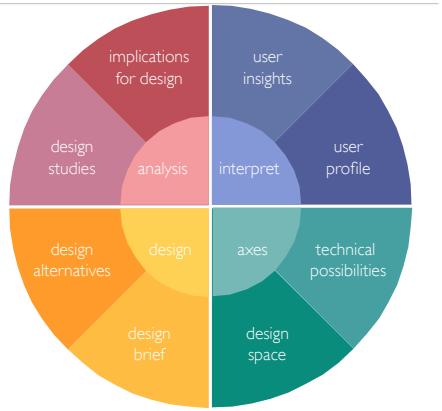
Generative Design

Discovery
Who is the user?

Invention
What is possible?

Design
What should it be?

Evaluation :
Does it work?



Homework due today
18 December 2013

1. Group: Finish exercises not done in class:
   Interview Analysis
   User Profile
   2 personas
   left over … Use Scenario

2. Individual: 10 web searches

Exercises in Class
18 December 2013

1. Use scenario

2. Generate new ideas
3. Idea Analysis, Design Axis
4. Design Concept

Poll: students with mobile phones and cameras (bring next time)

Now ..

We can start thinking of the system we want to design:

What are the possible techniques ?

Homework:

10 interaction techniques
(that you do not already know) and can be useful for your project

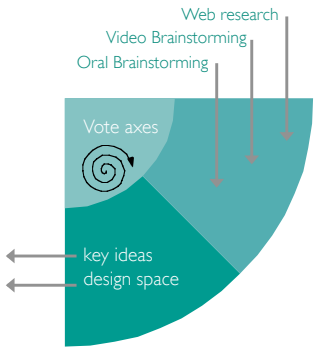
What can we do to help the users?

Today's exercise:

oral brainstorming
technological axes (dimensions)
design brief and concept

Generating Ideas

1. Collect ideas
   - Web research
   - Standard oral brainstorming
   - Video brainstorming
2. Analyze the ideas
   - Vote on preferred ideas
   - Design axes
3. Design Resources
   - Key ideas
   - Design space



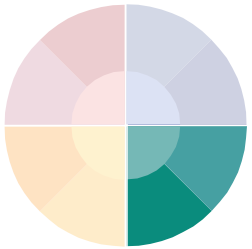
How to find the design concept of a system?

Based on your studies of users
chose a problem to solve
specific to your audience.

Generate a variety of ideas
that offer potential solutions

Create a design space to
embody the set of alternatives

Chose a concept to explore
not just functionality, but also *interaction*



'Problem finding' …

… is really more like 'opportunity seeking'.

Your goal is to observe users in natural settings
and discover opportunities for design

You will be influenced by what *you* are capable of designing
as well as what users are likely to want or need

REPETITION ALERT:
Look for surprises
and note them down *AS SOON AS YOU FIND THEM!*

Avoid toy problems and stereotypes: seek new insights

Generate new ideas

Brainstorming:
Imaging multiple situations in which users might interact with technology in a new way that meets a need or helps them do something new

Focus on the interaction in context
not only the functionality

Brainstorming: What NOT to do

Do NOT	Instead …
Discuss ideas	Just state each idea
Criticize ideas	Just ask a question to clarify
Argue why an idea is good/bad	Move to the next idea
Ignore each other's ideas	Use them to create new ones
Shift topics	Stick to the key topic
Jump to abstractions	Keep it specific
Get stuck	Think orthogonally

Express the interaction

Several possible levels to represent the interaction:

Text :	explain the idea with words (Standard oral brainstorming)
Sketch :	design/sketch to illustrate the idea (Standard oral brainstorming)
Mockups :	create prototypes using paper (Rapid prototyping)
"Theatre" :	act out the idea (Rehearse video brainstorming)
Video :	capture the details of the interaction (Video brainstorming)

Brainstorming

Goal:
generate the maximum number of ideas possible

Characteristics:
small groups, ideally with different expertise and roles
limited time, usually 30-60 min
specific, well-targeted design problem

Rules for oral brainstorming

Phase I :
- Generate the maximum quantity of ideas
- Everyone participates
- Record every idea
  - … and everyone contributes at least one stupid idea
- Do not critique the ideas

Phase II :
- Reread all ideas
- Everyone has three votes : mark your favorite ideas
- Rank the ideas by number of votes
- Discuss these ideas with respect to your design concept
  - Do not forget the strange/unique ideas

Class exercise: Oral brainstorming

Each group should choose:
- moderator: ensures that everyone participates
  - stops discussions and critiques
  - keeps the time
- scribe: writes every idea
  - reads the ideas at the end

Remember:
- Generate the maximum number of ideas
  - *without evaluating them*
- Quantity is more important than quality
- Everyone must participate
- Everyone must give at least one stupid idea

Opposites Technique

If you get stuck, widen the space of possibilities

Think of the opposites

simple	complex
short	long
good	bad
direct	indirect
text	graphic
funny	serious
process	object
start	end
single	sequence

haptic

Or think of an idea involving a hamster...

In-class Exercise
Brainstorming
40 min

Analyze the ideas

Vote
- Review and re-read all the ideas (by the scribe)
- Each person puts an "x" next to the best 3 ideas for them
- Are there groups of ideas?
- Result: identify the key ideas

Idea categorization
- Cut the ideas (or write them on post-it notes)
- Add ideas from Web search
- Organize the ideas that go together
- Search for "holes" and add new ideas
- Result: Technology axes / design dimensions

Design space

Design space

Gather ideas relevant to your design problem:
- some are your own brainstormed ideas
- some are from others, e.g., your web search

Extract different design dimensions that characterize the ideas

Place the ideas along the design dimensions
- at least three ideas per dimension
- generate new ideas if you find gaps
- explore the intersections of different dimensions

Select a subset of dimensions and ideas to create a design space

In-class Exercise
Design Space
30 min

Homework
20 December 2013

1. Finish exercises from class
   User scenario
   Design Space/Axis