

MMI 2

Tutorials

Winter Term 2017/18

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Project 1: Phases & Dates

Phase

Presentation

Phase 1: 7.11 - 28.11

05.12.2017

- Identify common problem
- Find a solution
- Sketch idea & test with persona

Phase 2: 05.12 - 12.12

12.12.2017

- Advance and specify idea
- Low-fidelity prototyp (only SW) & mini user study

Phase 3: 12.12 - 9.1

09.01.2018

- Refine concept
- Clickable prototyp (only SW) & mini user study

Phase 4: 9.1 - 16.1

16.01.2018

- Refine concept
- Adjust prototype
- Report lessons learned

Phase 2: Tasks & Presentation

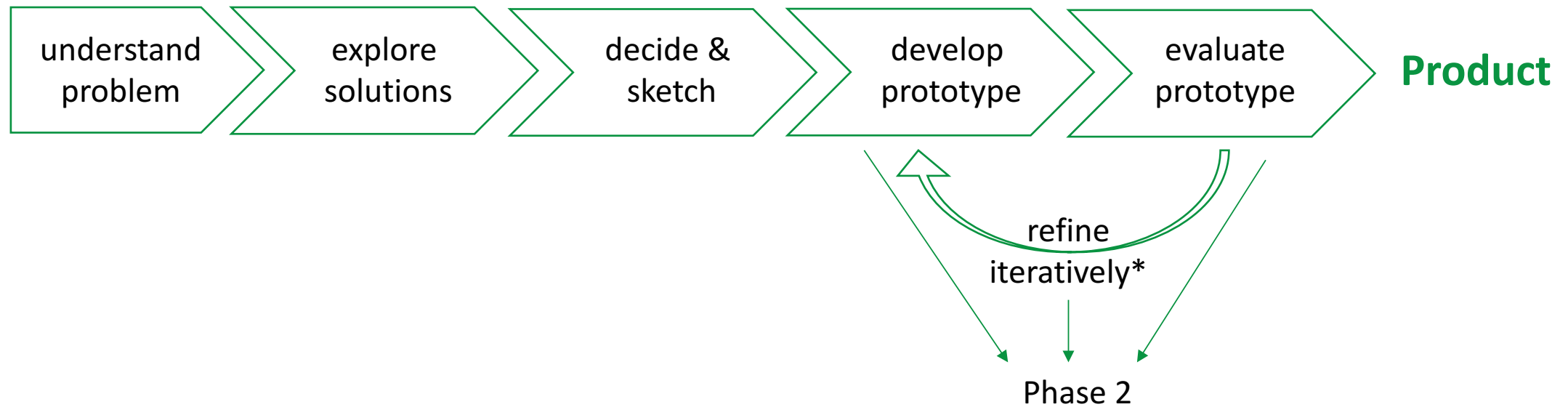
Tasks & Output:

- Develop a low-fidelity prototype
- Perform a qualitative usability test
- Analyze and report data
- Update and advance design

Presentation:

- Functionality of your prototype + pictures
- Procedure of the user study + pictures
- Present quotes, observed situations
- Present your major findings and the updated design
- Present the lessons learned
- Ask the audience for specific feedback
- **Needs to be submitted as PDF until Dezember 12th at 10 am , 2017 (Uniworx)**

Design Process



*If you identify bigger problems you need to go back more steps!

Prototyping

You should now have a good understanding of the problem space and an idea to solve the problem. This part of the exercise aims at developing an interactive version of your idea.

*“A user interface prototype is a hypothesis
— a candidate design solution that you consider for a specific design problem.
The most straightforward way to test this hypothesis is to watch users work with it.”*
([Kara Pernice](#), Nielsen Norman Group, 2016)

Prototyping helps you to ...

- ... find and fix problems early (high-level concepts or particular execution).
- ... improve fast with low costs.
- ... iterate and thereby improve your solution and its design.
- ... obtain a high-quality solution.

Prototyping – Characteristics

When you choose the type consider the goals, the design state, available tools and resources, etc.

low-fidelity

Early in the process to explore the basic concept

vs.

high-fidelity

Prototype is close to the final product

throwaway

Build a new prototype, e.g., because of different type

vs.

evolutionary

Incremental adjustments and growth of the prototype

static

Interaction not possible or faked (wizard of oz)

vs.

interactive

Prototype is clickable and reacts itself

horizontal

Focus on the concept rather than the functions

vs.

vertical

Focus on the execution of single tasks/functions

Prototyping – Characteristics

Phase 2

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Focus on the execution of single tasks/functions

User Study

This part of the exercise aims at identifying the most important concept and usability issues by conducting a first cheap user study. Therefore, your prototype should be tested with five real humans. Things to consider:

*“Elaborate usability tests are a waste of resources.
The best results come from testing no more than 5 users
and running as many small tests as you can afford“*

([Jakob Nielsen](#), 2000)

The user study helps you to ...

... understand how users interact with the system and react to it.

... understand the users expectations and mental model of how the system (should) work.

→ ... obtain a high-quality solution **that satisfies the users' needs.**

User Study – Characteristics

When you choose the type consider the state of your prototype, your particular questions and goals, etc.

qualitative research

more useful to explore the user's perception, experience and motivation

natural

observe users in their natural environment (e.g. field studies)

open task

based on scenarios and do not define a specific interaction, better suited to collect qualitative insights

qualitative data

mostly manual data collection, e.g., videos, notes

vs.

quantitative research

quantify problem and compare it to an available baseline, e.g., time needed for a specific task using a smartphone vs. a smartwatch

vs.

scripted

well suited to understand a specific set of interactions (e.g. lab user study)

vs.

closed task

very specific, utilized to generate comparable quantitative data

vs.

quantitative data

automated logging , e.g., click counter, reaction time

User Study – Characteristics

Phase 2

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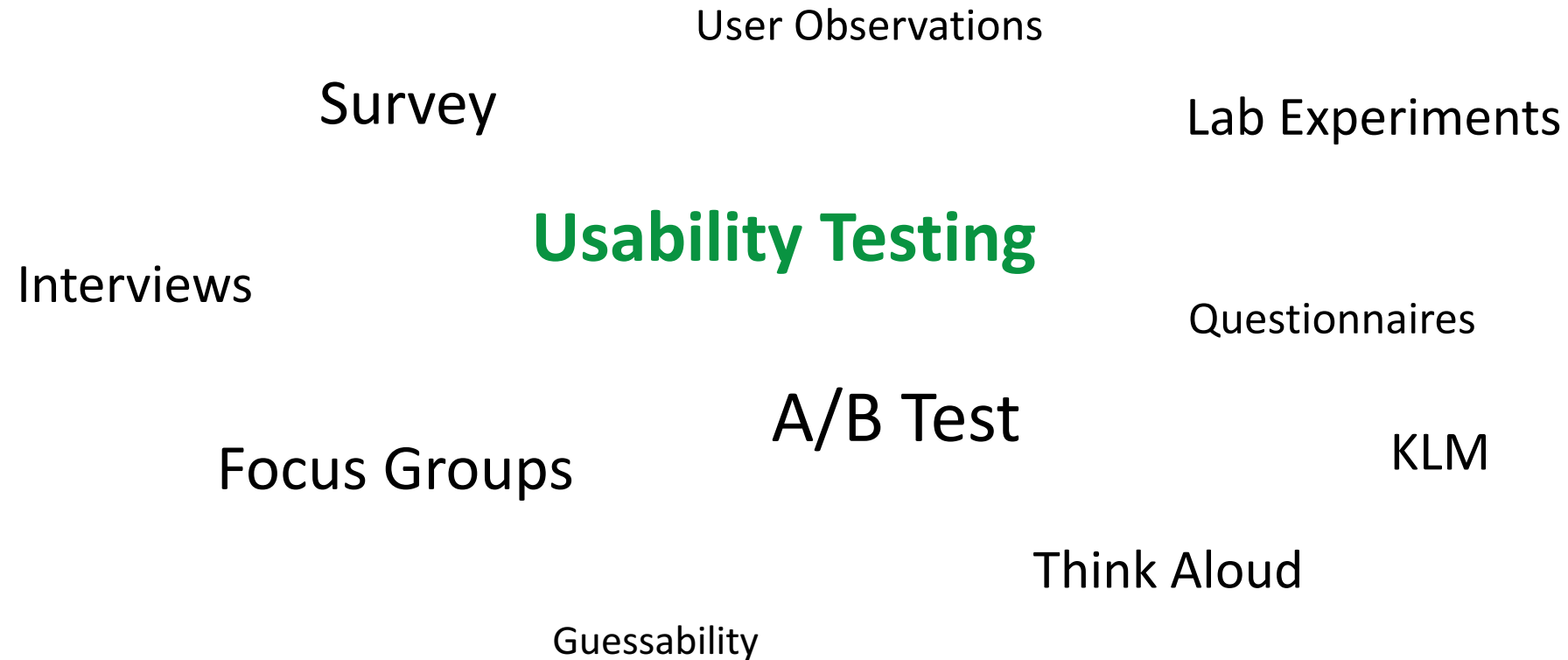
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User Study – Methods



Prototype & Usability Test

Paper Prototype:

- Basic wireframe-like ‘interface’ on paper
- User ‘interacts’ with the paper prototype and touches the buttons etc.
- Experimenter changes the paper sheets to show the systems reactions
- More information:
 - [Paper Prototyping – Getting User Data before you Code](#)
 - [Paper Prototyping – Mozilla Case Study](#)

Wizard-of-Oz Prototype:

- Similar but more advanced than paper prototype
- More realistic interface (on the computer) but still static
- the wizard (experimenter) controls the system remotely (user thinks the system works)
- The user “interacts” with the system but the wizard executes the actions and decides what to show
- Might not be thrown away and serve as a basis for a high-fidelity prototype

Should you test a **clickable** or **static** prototype?



Make a deliberate choice between testing a clickable or static prototype. Guide your choice with these questions.

- | | | | |
|---|---|-------------------------------------|--------------------------|
| 1 | Time and skills with tools to implement a response for all possible user actions? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2 | Time for multiple dry runs of the task with the prototype? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3 | Time to pilot test the tasks with the prototype and fix all the issues found? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4 | Design settled enough so no changes between test sessions? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5 | Impossible for designer to play the “computer” in all tests? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6 | Flow from screen to screen an important part of the study? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7 | User noticing dynamic changes an important part of the study? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

If more yesses
try using a
clickable prototype

If more nos
try using a
static prototype

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More information:

[High- vs. Low-fidelity Prototypes](#)

[Low-fidelity Prototypes](#)

Usability Testing – How to

Goal:

- Get insights into the users' understanding, expectations, mental model etc.
- Identify features which are easy or hard to use
- Identify mismatches between design and user expectations

How to:

- Let the participants explore the system
- Ask participants to think aloud when 'interacting'
- Observe the user and record or take notes
- Ask participants if you observe problems
- Discuss particular functions, layouts, expectations, problems and so on
- Use post-study interviews or questionnaires
- Analyze data, structure and prioritize findings
- Report your findings and update the design



More information about
[usability testing](#)