More detailed guidelines from the Living Lab Methodology Book

Prototype and Innovation Design

Cycle 2 and 3, Phase 2

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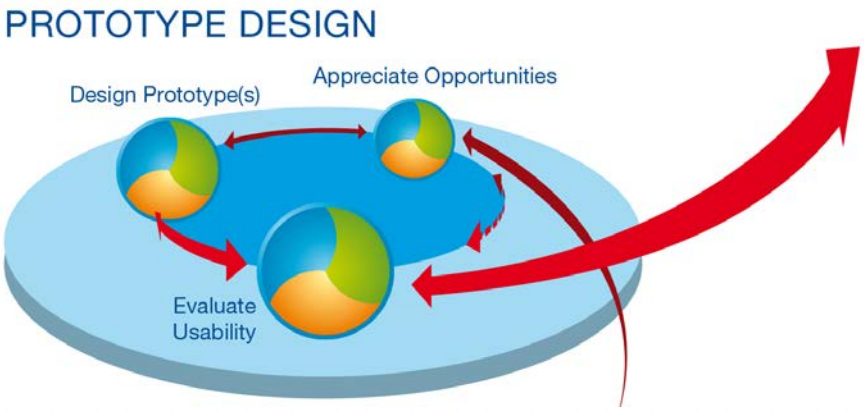
Checklist for Prototype Design

The aim of the IT design phase is to move from low-fidelity prototypes to high-fidelity prototypes with a focus on users identified needs throughout the whole process. Using prototypes has shown to be a useful aid in the discussions with stakeholders in the development process, as well as inside the development team as for you.



The main objective is to **look beyond** the immediate vision that comes to mind and to do that with the **users expressions** in focus. Aim to come up with different design solutions.

During this process it is important to keep the five key principles in mind and to consider how, for example, **value** can be created for the users, how the users can **influence** the process, how **sustainability** take form, how openness should take form, and how the process should be designed to capture as **realistic** situation as possible in this phase.

Issues that need to be discussed among the development team in the design phase are:

- What is the overall purpose of the system?

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- Discuss the user requirements (needs, requirements, usability goal, user experience goals, values etc) that have been identified and presented in the former process. Clearly express the underlying values important to consider in the design.

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- Which user requirements are most relevant in relation to the purpose of the system?

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- Which relevant strengths (values) in their current situation have been expressed by the users? What do they not want to change?

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- Which desired future state has been expressed?

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- Which interaction type would best support the users' activities?
  - □ Instructing
  - □ Conversing
  - □ Manipulating
  - □ Exploring

- Do different interface types suggest alternative design insights or options?

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- Which interface style do you want to use?
  - □ Web based GUI
  - □ Shareable interface
  - □ Tangible interface, i.e. sensor based
  - □ Mobile interface
  - □ Wearable interface

- □ Robotic
- □ Pen, gesture or touch screen interface
- □ Other……..

- What functions will the system perform?

- How are these functions related to each other? Write down the functions and indicate their relations.

Function 1	
	Function 4

- What information needs to be available?

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- What should be tested and what should not to test at the moment, if everything is tested, than it is not a prototype

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Document and design the prototypes:

- Decide on what level the prototypes must be described to express the feeling you want to mediate
  - o Low Fidelity prototyping
  - o High-fidelity prototyping

- Horizontal prototype showing a lot of the functionality, but not in detail
- Vertical prototyping showing a lot of detail on a few functions

- Use methods such as Scenarios, Mock-Ups, Prototyping,

Constantly go through the design to make sure that the user requirements, needs and values has been considered in the design. To evaluate the system before doing it with users, Heuristic Evaluation can be used (Sharp, Rogers & Preece 2007). These are:

1 **Visibility of the system status**: Keep the user informed about what is going on
2 **Match between system and real world**; speak the users language with words, phrases and familiar concept
3 **User control and freedom**: users need clearly marked emergency exits, support undo and redo
4 **Consistency and standards**; Users should not have to wonder whether different words, situations, actions mean the came thing
5 **Error prevention**: Design to prevent problems, present confirmation options before they commit the action.
6 **Recognition rather than recall**: Minimize the users memory load by making object, actions and options visible.
7 **Flexibility and efficiency of use**: Design to support both inexperienced and experienced users. Allow users to tailor frequent actions
8 **Aesthetic and minimalist design**: No dialogues with irrelevant or rarely needed information.
9 **Help users recognize, diagnose and recover from errors**; error messages should be expressed in an understandable language, precisely indicate the problem.
10 **Help and documentation**: This information should be easy to search, focus on users tasks, list concrete steps and not be too large.
11 **Provide navigation support that is always present**: Having a higher fan-out in the navigation menu in the left margin would enhance usability
12 **Avoid narrow, deep, hierarchical menus that forces users to burrow deep into the menu structure**
13 **Internal consistency**
14 **Avoid long pages**
15 **Avoid non-standard link colors**
16 **Avoid pages that are not connected to the website**

Iterate in the process to make the design more and more focused and detailed in their shaping.