

Experiences from Prototyping

What, Why, When and How

Jani Kalasniemi

Prototyping Viking @ Ideasquare, CERN



Idea^s



Quiz: which of these defines the word prototype?

- A) Japanese software company
- B) Metal band from the US
- C) Video game released on year 2009
- D) Original first version of a product
- E) Bodies Without Organs album
- F) Property of all JavaScript objects

All of the answers
are right



Idea^s

WHAT is a prototype?

*”A **prototype** is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or **learned** from.”*

-Wikipedia



WHY to prototype?

- To the test the assumptions and viability of the approach
 - Innovation is 1% about ideas, 99% execution & iteration
- Bias towards action
 - Investigate each assumption through active testing, instead of theoretically thinking it through
- Learning by doing
 - Boost learning by experimenting and exploring the proposed solutions
- Creative serendipity
 - Create unplanned, fortuitous discoveries with tangible prototypes



WHEN to prototype?

- As soon as possible and as many times as possible!
- If you create a product without prototyping, the product itself is your first prototype

*“**Quantity** has a quality all its own”*

-Joseph Stalin



Idea^s

HOW to prototype?

High-fidelity

- Closer to the final product in terms of look, feel, and means of interaction
- More expensive
- Time consuming to build

Low-fidelity

- Simple design
- What ever materials are available
- Can be tested immediately
- Cheap & Fast



HOW to prototype?

- Anything that is **interactive, collaborative** and helps in **communicating, testing** and **validation** of ideas and sorting out potential **problems**
- Prototypes can take many forms, and just about the only thing in common the various forms have is that they are all **tangible forms of your idea**



There are as many ways to prototype
as you can imagine



Idea^s

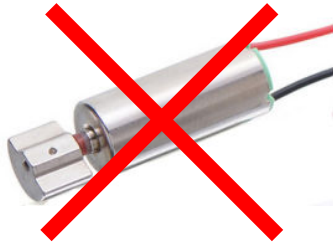
HOW to prototype?

Examples



HOW to prototype?

Prototype with haptic feedback to a blind user. When there is an obstacle on the way, prototype vibrates.



HOW to prototype?

Squirrels are eating all the bird food from the bird feeder.
How to stop the squirrels?



Guidelines for prototyping

1. Just start building

Design Thinking has a bias towards action: that means if you have any uncertainties about you are trying to achieve, your best bet is to make something. Creating a prototype will help you to think about your idea in a concrete manner, and potentially allow you to gain insights into ways you can improve your idea.



Guidelines for prototyping

2. Don't spend too much time

Prototyping is all about speed; the longer you spend building your prototype, the more emotionally attached you can get with your idea, thus hampering your ability to judge its merits objectively.



Guidelines for prototyping

3. Remember what you're testing for

All prototypes should have a central testing issue. Do not lose sight of that issue, but at the same time, do not get so bound to it that you lose sight of other lessons you could learn.



Guidelines for prototyping

4. Build with the user in mind

Test the prototype against your expected user behaviors and user needs. Then, learn from the gaps in expectations and realities, and improve your ideas.



Guidelines for prototyping

5. Break the boundaries of assumptions

Your imagination merely limits the use of different materials and tools in prototyping. Learn how to see things through their potential instead of their limitations and definitions.



Guidelines for prototyping

1. Just start building
2. Don't spend too much time
3. Remember what you're testing for
4. Build with the user in mind
5. Break the boundaries of assumptions

