IMPLEMENTATION: OVERVIEW

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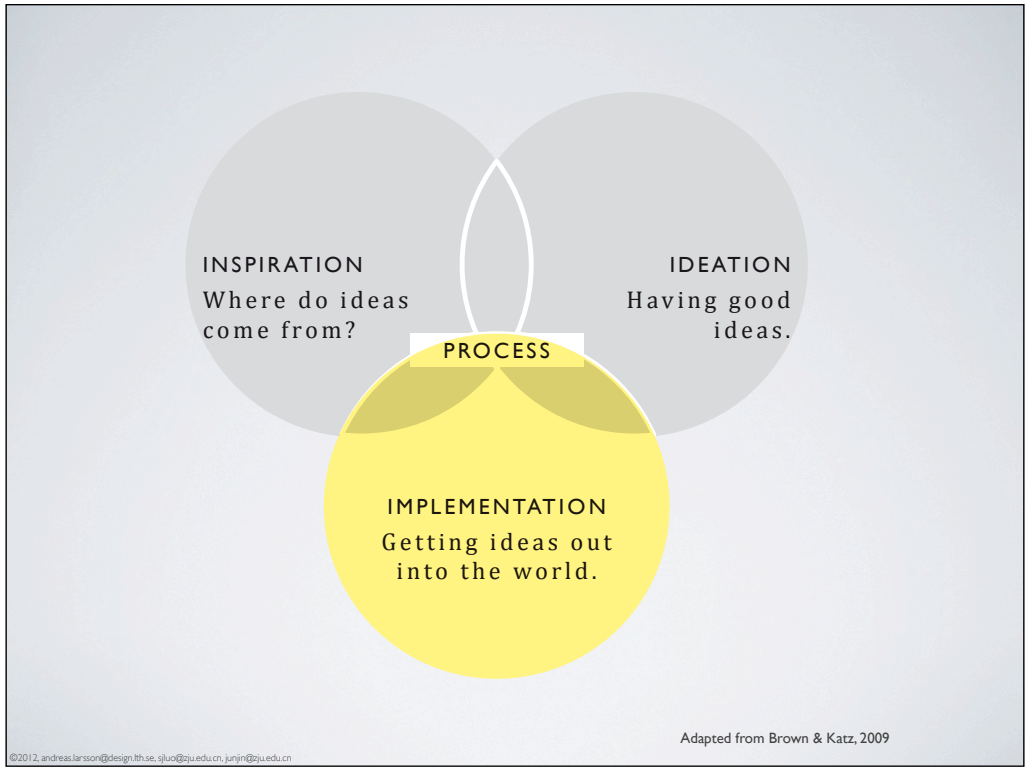


The Implementation dimension is about getting ideas out into the world. It is about developing ideas into a concrete, fully conceived plan of action.

This is about communicating an idea with sufficient clarity to gain acceptance across the organization, proving it, and showing that it will work in its intended market.

Prototyping plays an essential role. As the project nears completion, prototypes will likely be more complete.

McDonalds example of how prototyping is useful in all spaces of innovation:

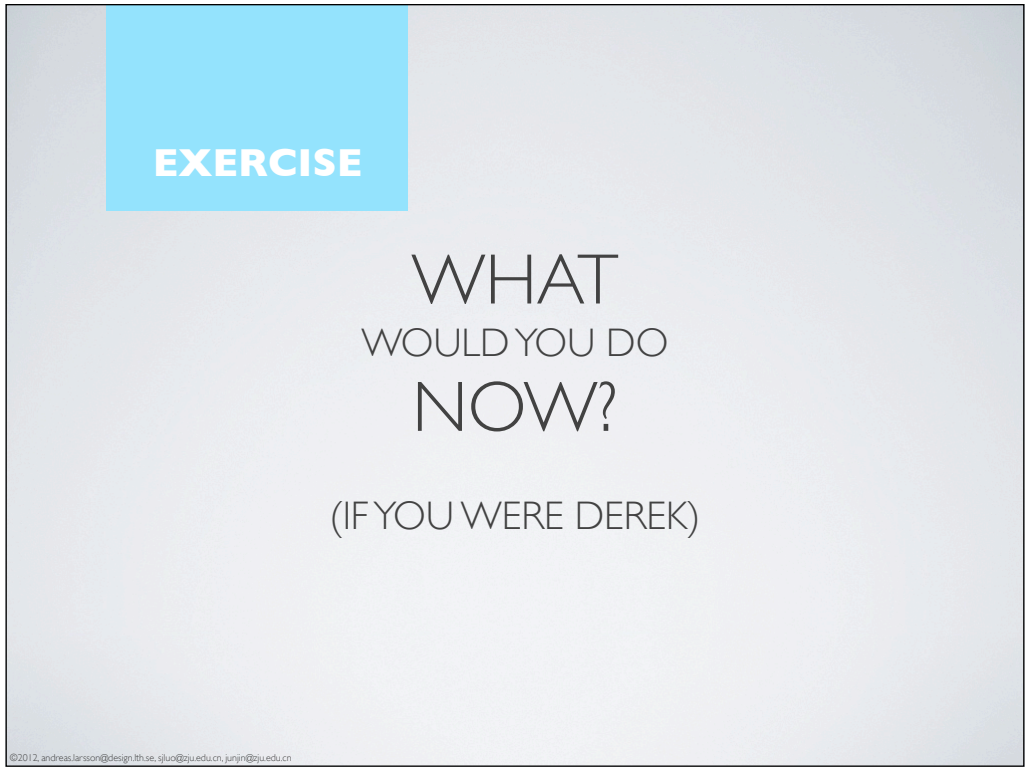
(INSPIRATION: sketches, quick mock-ups, scenarios to explore new services, product offerings and customer experiences)
(IDEATION: sophisticated prototyping facility at its headquarters where they can configure new cooking equipment, point-of-sale technology, etc.)
(IMPLEMENTATION: pilots deployed at selected restaurants)

In this course, we'll probably just scratch the surface of the implementation space, but that also depends on what you come up with. Some products and services can be prototyped, tested and launched in less than a day, others will take years to implement.

Derek Cousins at Dragon's Den

What do you think about Derek's pitch? Was he able to communicate his concept's desirability, viability and feasibility?

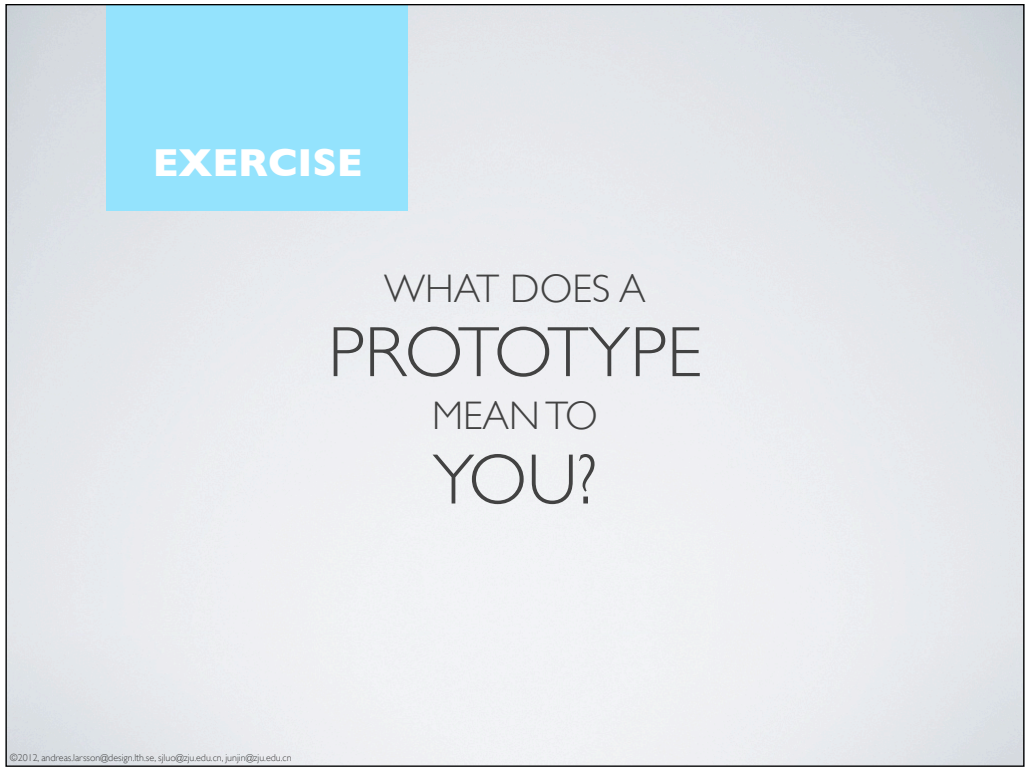
I think the Dragons could probably have let him down a bit more "lightly", but it is a TV show, so it is expected.



Students discuss in groups of two or three.

What would you do now if you were Derek?

Follow up with a moderated all-class discussion.



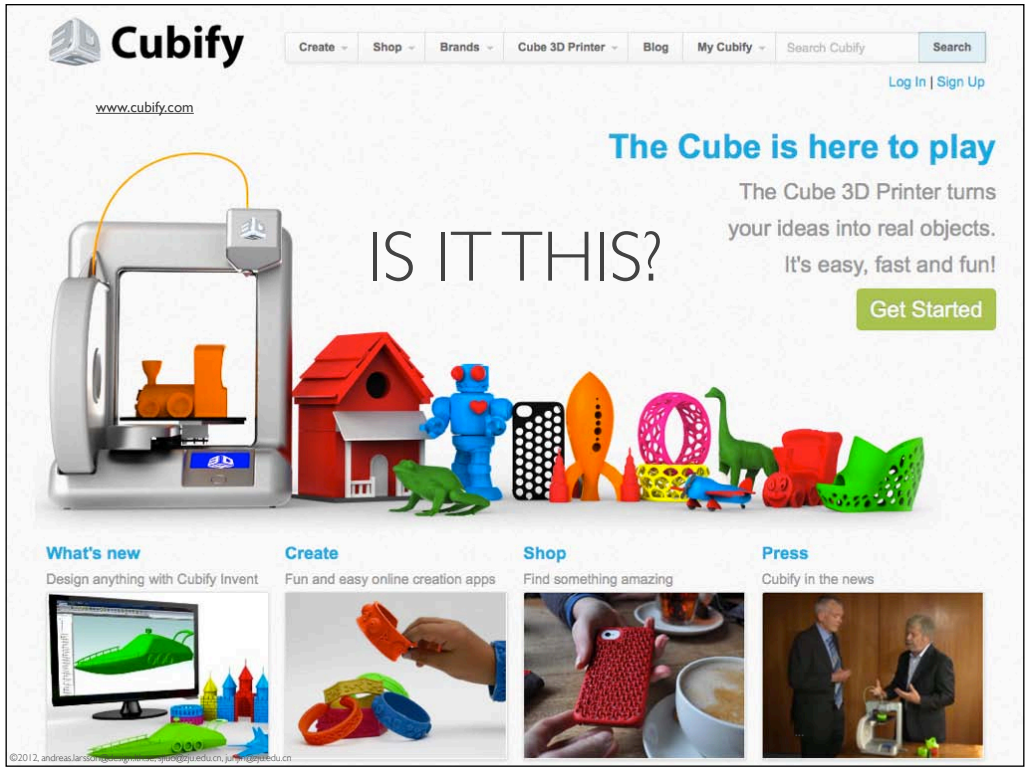
Students discuss in groups of two or three.

What does a prototype mean to you? Don't think so much about the "academic definition" of a prototype, I'm interested in your perspectives.

Follow up with a moderated all-class discussion.

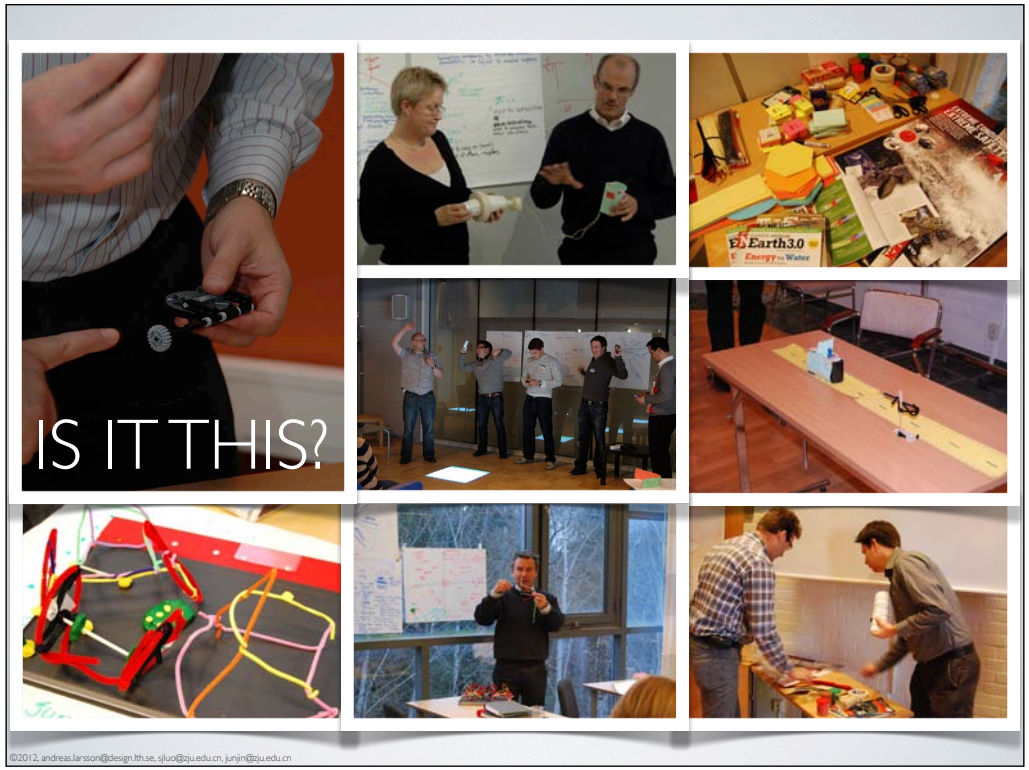
Do you normally think of prototypes like this? High-fidelity scale prototypes made of clay and plastics?

Do you think about prototypes with high finish, looking like the real thing? Do they also work like the real thing?



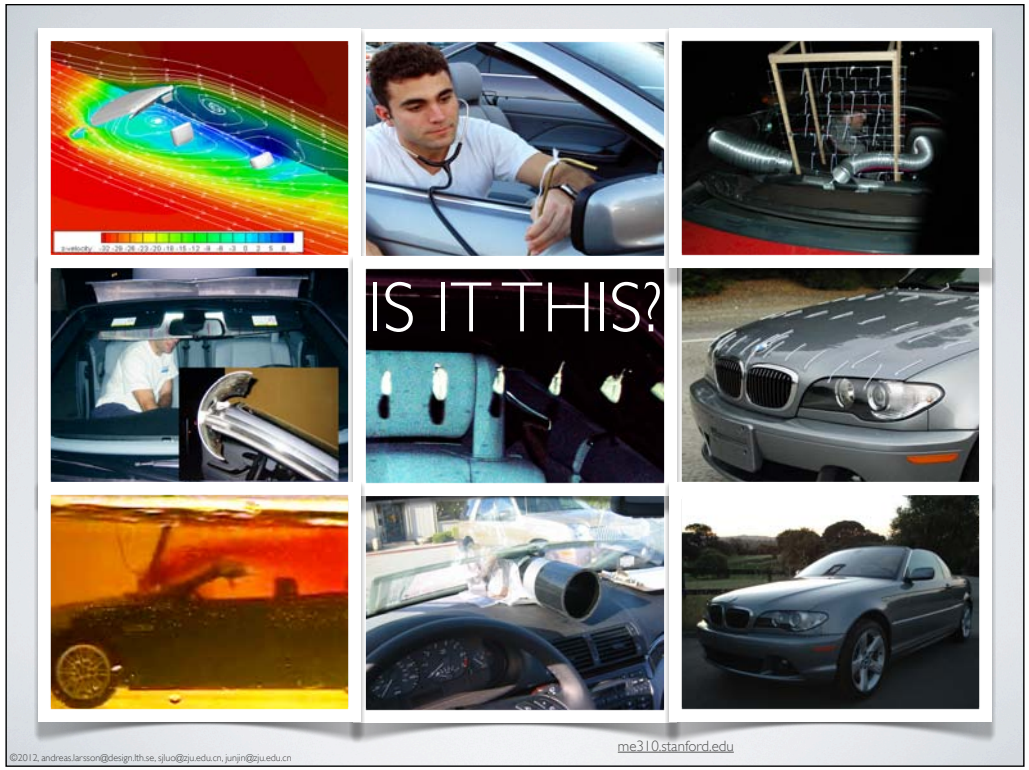
...or do you think of a prototype in terms of rapid prototyping where you add successive layers of material through.

The example, Cubify, is a solution primarily for home use, but there are lots of industrial machines for 3D printing, rapid prototyping or “additive manufacturing”. This is basically where you add material to gradually build up a model, as opposed to “subtractive manufacturing” where you are removing material through e.g. stamping, cutting and grinding.



Here we have representatives from companies such as Sandvik Coromant, LKAB, Hägglunds Drives, Volvo Aero and SKF making prototypes using both their bodies and various office supplies.

Yes, this is really happening out in industry. At first, some people are a bit hesitant to do this, but when they see what this kind of prototyping can do for them, there is no turning back.

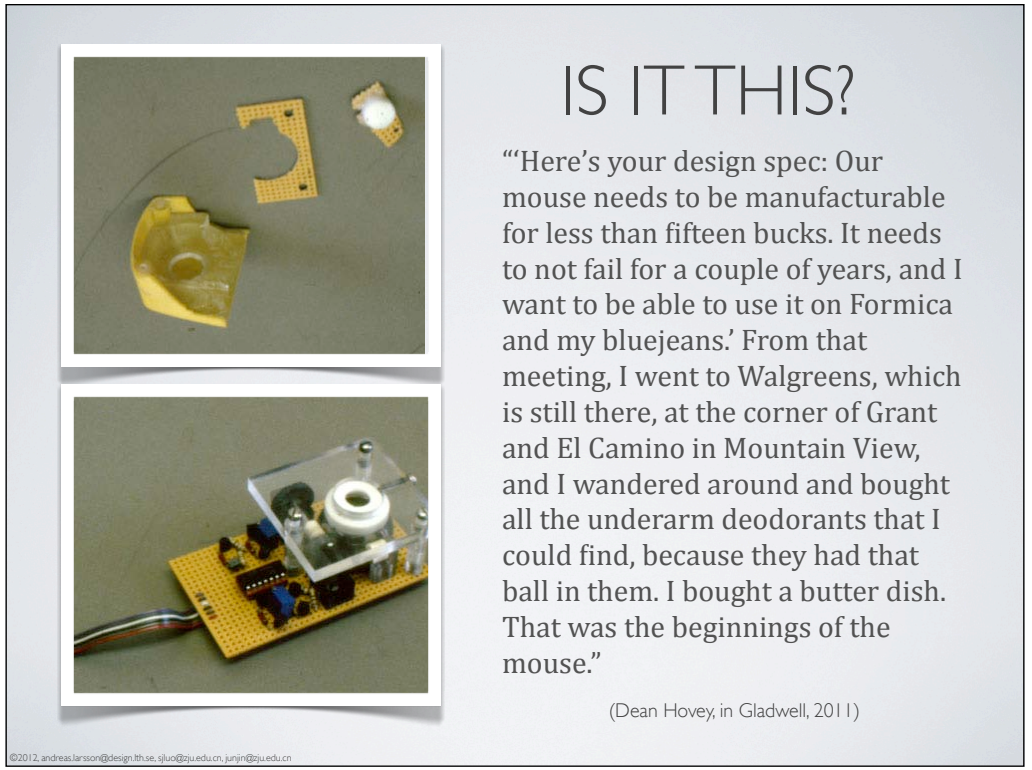


[Photos courtesy of Prof. Larry Leifer, Stanford University. ME310 project, BMW OpenRoad, 2005]

Here's an interesting chain of photos from Stanford University, a class where I have participated as a coach during several years.

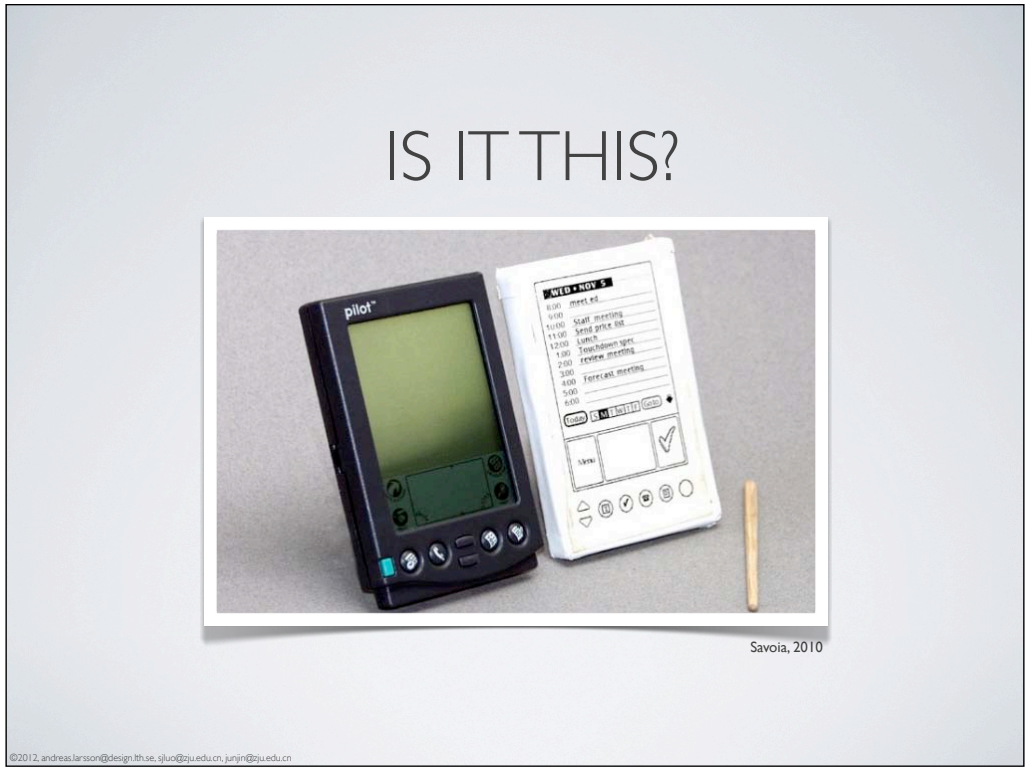
Open air enthusiasts know that in a convertible at highway speeds, the wind blows from behind you and throws your hair into your face. One can either endure the inconsistent hard-to-ignore backflow or install the clunky unsightly wind screen that takes the fun out of open air motoring. Students in ME310 reinvented the open air experience by drilling a hole in the windshield and optimized duct that focuses the air between the front two passengers. The proof-of-concept prototype proved that a small change in airflow can change can significantly alter the passengers' comfort. The idea is now patented and being investigated by engineers with the underlying question: can we accomplish this without a hole in the windshield?

It's quite fun to see how inventive they were with their prototypes. They are doing a computational fluid dynamics simulation, they are using a stethoscope to investigate the aerodynamic drag, they are using a quite advanced box with pieces of string, they are trying a metal wind deflector, they are dropping paint on the windscreen, they are attaching pieces of string to the hood, they are pouring ink into flowing water...and they are drilling a hole in the windshield.



The mouse was conceived by the computer scientist Douglas Engelbart, developed by Xerox PARC, and made marketable by Apple.

The day after Steve Jobs had seen a "mouse" and the Xerox Alto personal computer at Xerox PARC in Palo Alto, he met with Dean Hovey (one of the founders of the industrial design firm that would become known as IDEO.) This is the design specification that Hovey was given on the spot.



Have you heard about the Palm Pilot? I've actually had one of these in a slightly newer version.

It was introduced in 1996 and it was a palm-sized digital device with four basic functions: calendar, address book, to-do list and a note taker.

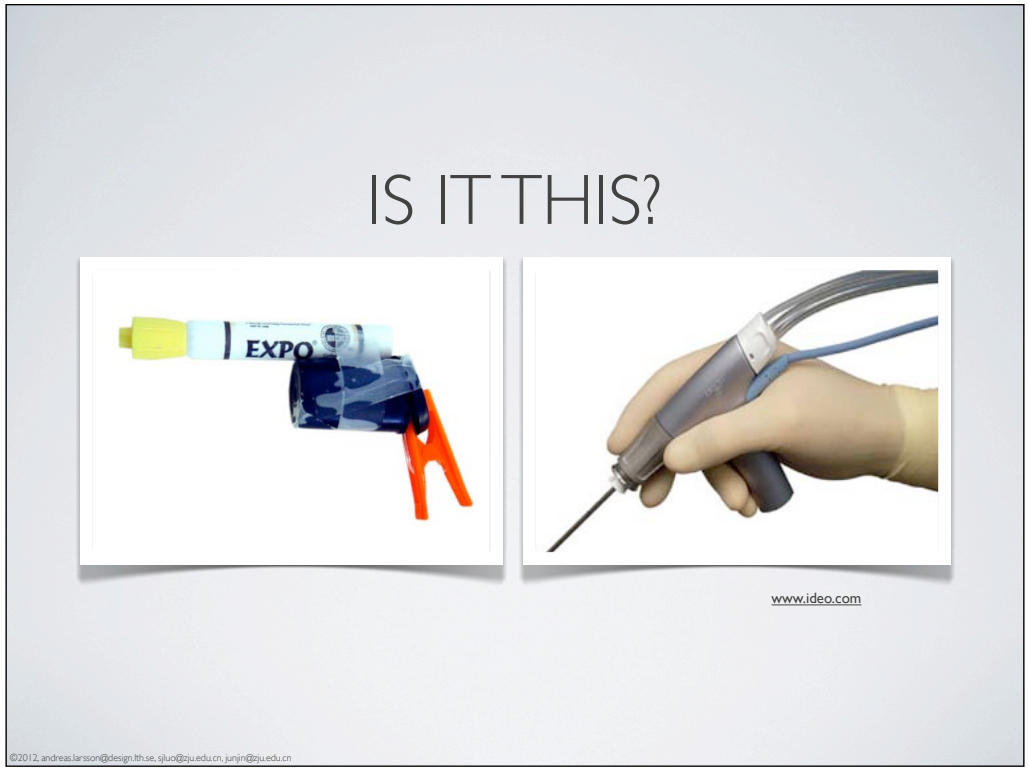
Jeff Hawkins, Palm's co-founder and one of the inventors of the Palm Pilot, had designed one of the first handheld computers (the GRiDPad) a decade earlier. It was a nice piece of engineering but a market failure. It was too big. When his colleagues asked him how small their new device should be, he said "Let's try the shirt pocket".

He cut a block of wood to fit his shirt pocket. He carried it around for months, pretending it was a computer. If someone asked him if he was free for lunch on Wednesday, he would haul out the block and tap on it as if he were checking his schedule. He tried different design faces with various button configurations using paper printouts glued to the block.

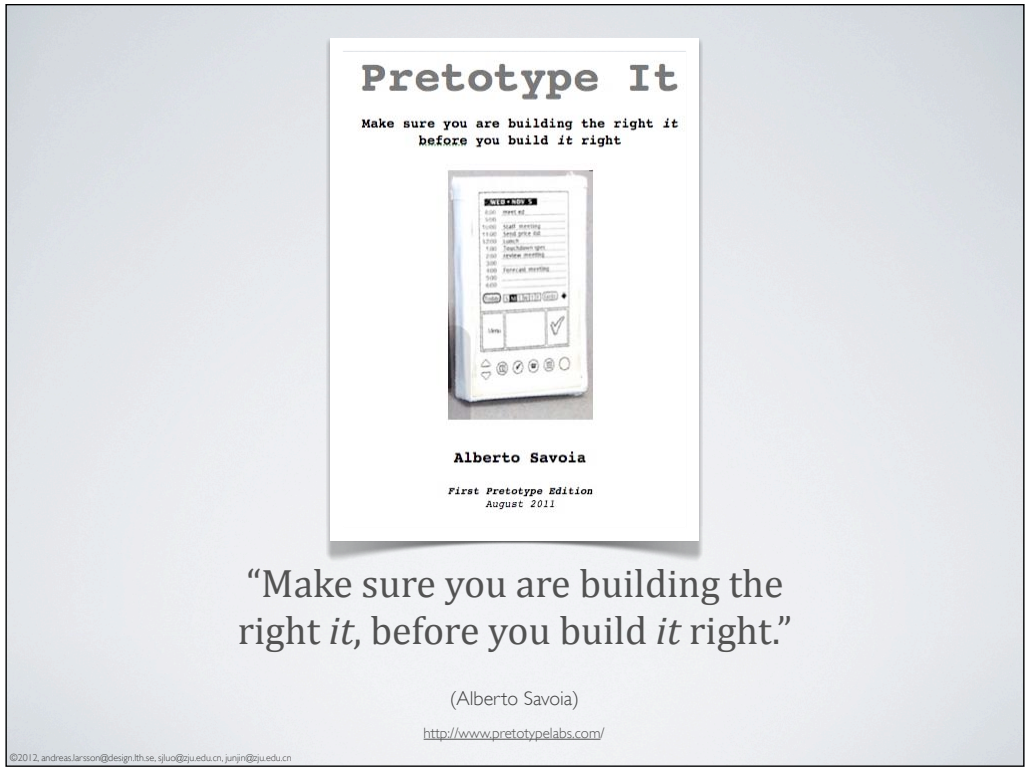
The piece of wood with paper answered the first and most important question: "If I had a Pilot, would I actually carry it with me and use it?" He knew he had the right it.

Savoia calls this pretotype a "pinocchio pretotype", an artifact that acts as a proxy for the real thing (from Pinocchio the wooden puppet who dreamt of becoming a real boy)

http://www.time.com/time/magazine/article/0,9171,138767,00.html



IDEO wanted to test a surgeon's ability to balance, position, and finely control a surgical dissector tool that they were working on. They used basic office supplies to understand their customers' performance requirements for one-handed operation.



At this point, we are not talking detail design or manufacturing aspects, we are still focused on refining the concept. Are you building the right things, instead of merely building things right?

Alberto Savoia, former engineering director and "innovation agitator" at Google (responsible for Adwords, etc. He left in March 2012) came up with the concept of pretotyping.

Actually, Savoia makes a difference between prototype and pretotype. According to him, prototypes require an investment of days or weeks to answer the question "can we build it?". Pretotypes require an investment of hours or days to answer the question "would we use it"?

In this course, you might be able to do a bit of both. As I've said, definitions are not the point here.

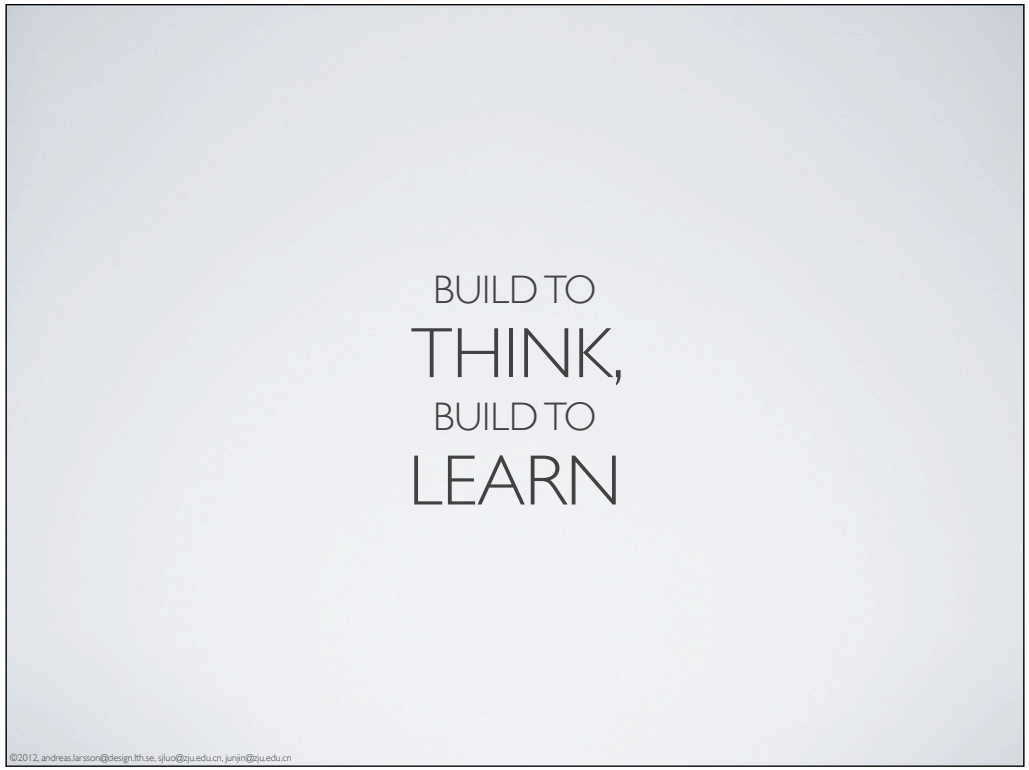
(If you want to hear the definition of pretotyping, it is: "validating the market appeal and actual usage of a potential new product by simulating its core experience with the smallest possible investment of time and money."

A big part of the implementation is to show to yourself, potential costumers, potential users, and potential investors that what you are proposing is desirable, viable and feasible.

Larry Keeley of Doblin says that it is about “faking a new business fast”.

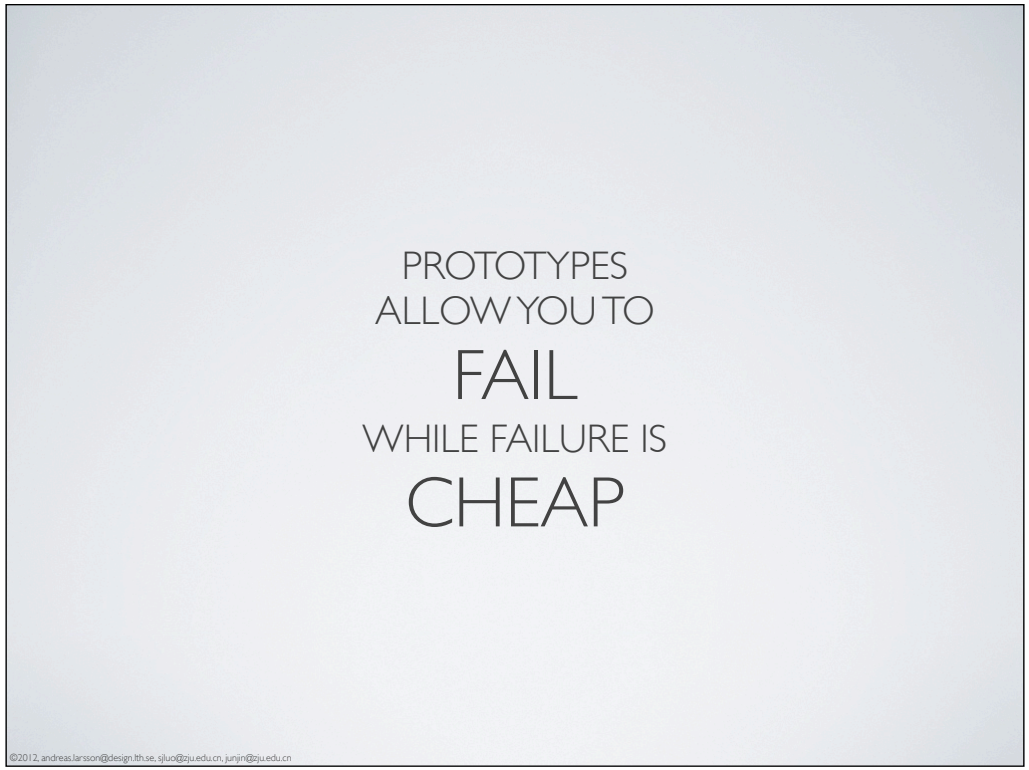
This could be in the form of a principle demonstration that communicates how “it” should work, how it should behave, how it should look or how it should feel.

It is about convincing others that “it” can be done and that it has the potential to lead to the desired outcomes for e.g. costumers, users and investors.



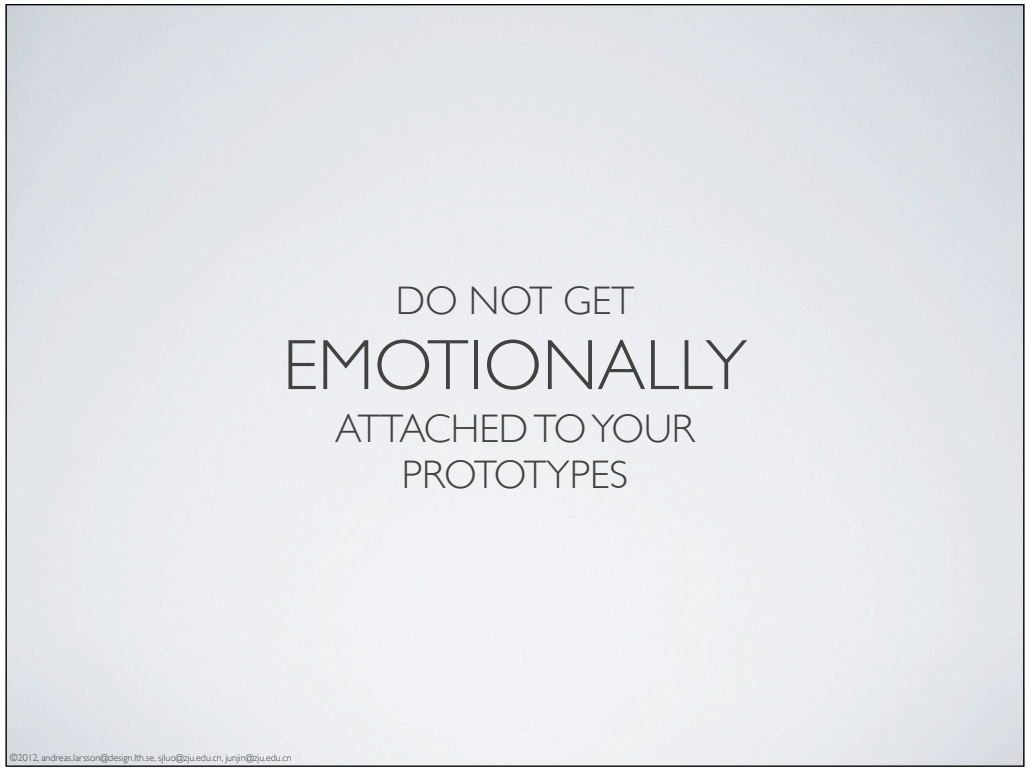
You are building to think, and building to learn. It is still somewhat of an explorative process in the sense that you are still trying to find out if your idea will work.

You are also actively seeking out “what might not work”, because finding out what fails takes you one step closer to finding out what works.

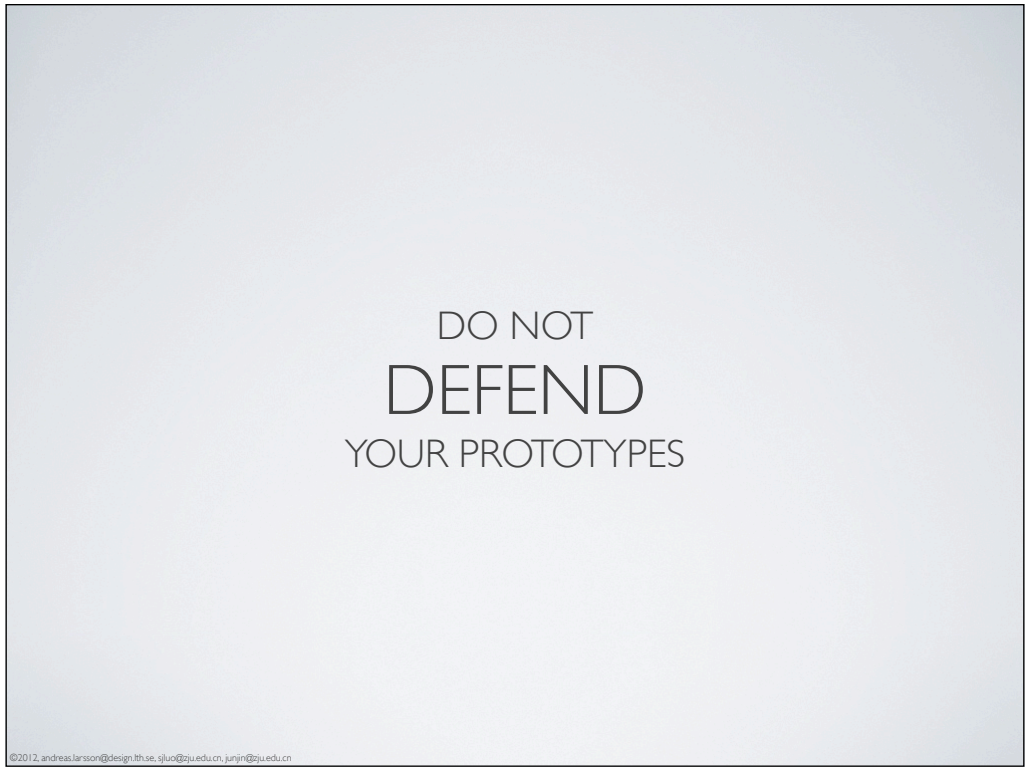


Prototypes lower the cost of learning, since they allow you to fail quickly while failure is still cheap.

Prototypes accelerate learning and facilitate communication, they are not only evaluation and validation instruments.

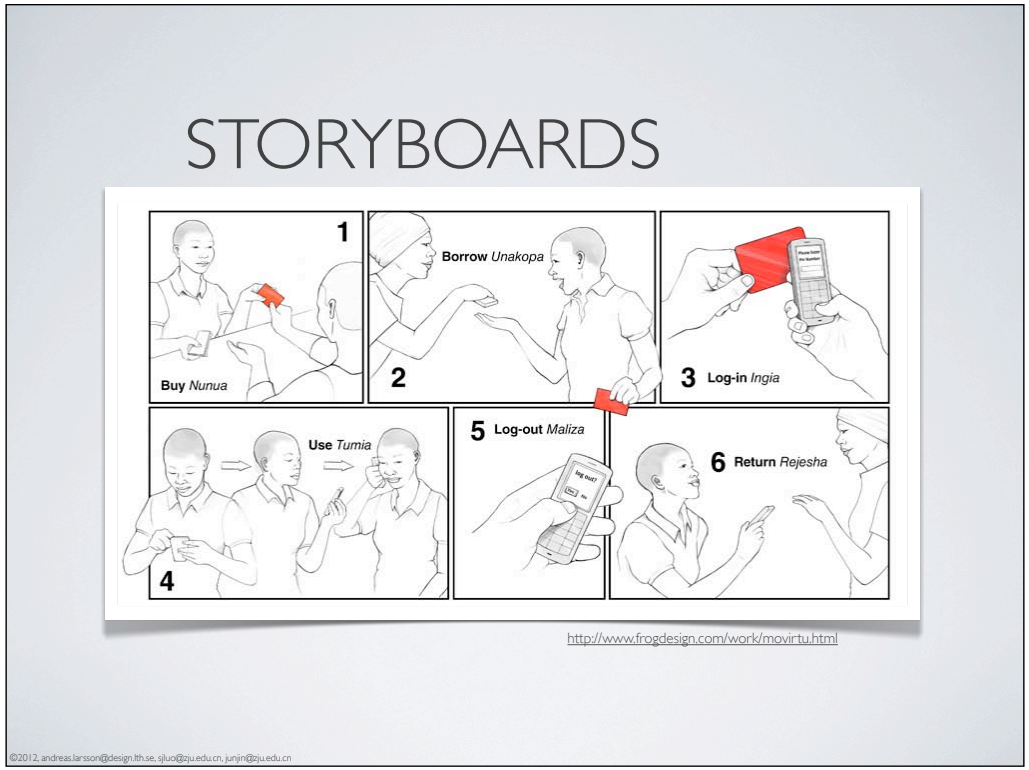


You should not get emotionally attached to any single prototype. It is not the prototype that is important, but the feedback and insights that you gain from interacting with it.



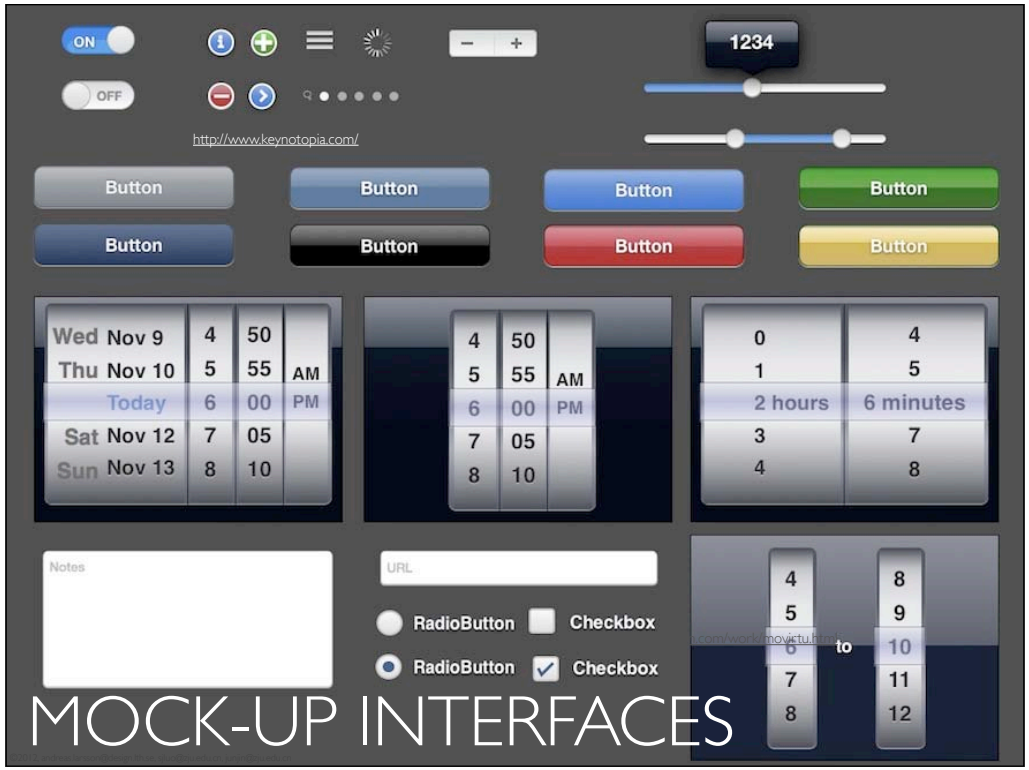
You should not defend your prototype. Gladly accept the critique and learn from the mistakes that people make when using it.

Not about fooling people. It’s about helping people make an emotional connection to what you are offering. You are inviting them to better understand the genuine benefits of what you are proposing.

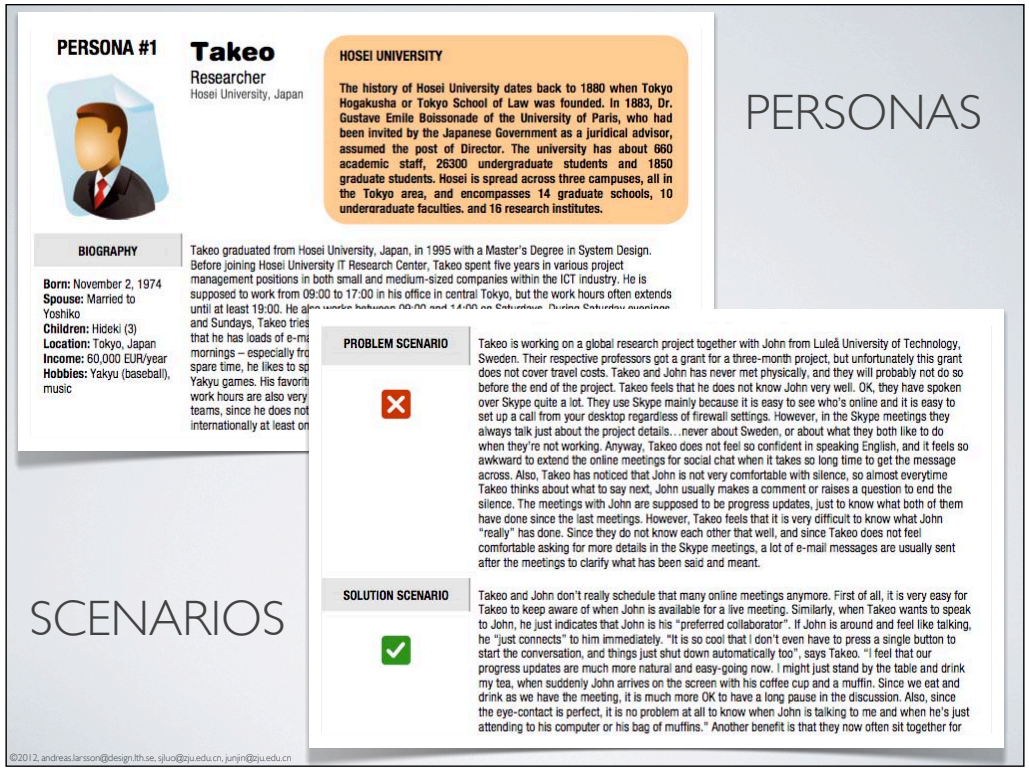


Panels that illustrate, almost like comic strips, the sequence of events a user might experience in checking into a hotel, opening a bank account, or using a newly purchased electronic device.

This storyboard shows a product products and services allows someone to borrow a mobile phone and use it to make a call or send a text as if it were their own. Each person gets a login when they buy a locally sold Movirtu ID card, which works much like a conventional calling card except that it doesn't just provide minutes; it changes the digital display on the phone itself so that every device behaves consistently, avoiding the problem of having to frequently learn new interfaces of borrowed phones.



If you have a digital product, user interface templates can help you design and prototype apps in minutes instead of hours. Simply copy and paste interface elements from the templates onto your slides, edit their labels, then add hyperlinks to make the interface clickable.



Persona: Answers the question "Who are our users?"

An archetypal character that is meant to represent a group of users in a role who share common goals, attitudes, and behaviors when interacting with a particular product or service.

Describes user demographics, education, income, technological experience, job description, goals, needs, desires, typical workday, current solutions and frustrations, common activities, likes and dislikes, hobbies and interests.

Scenario: Answers the question "What is the product experience?"

A story that describes an activity that a user or group of users may perform.

Can be a problem scenario, solution scenario, evaluation scenario, training scenario, etc.

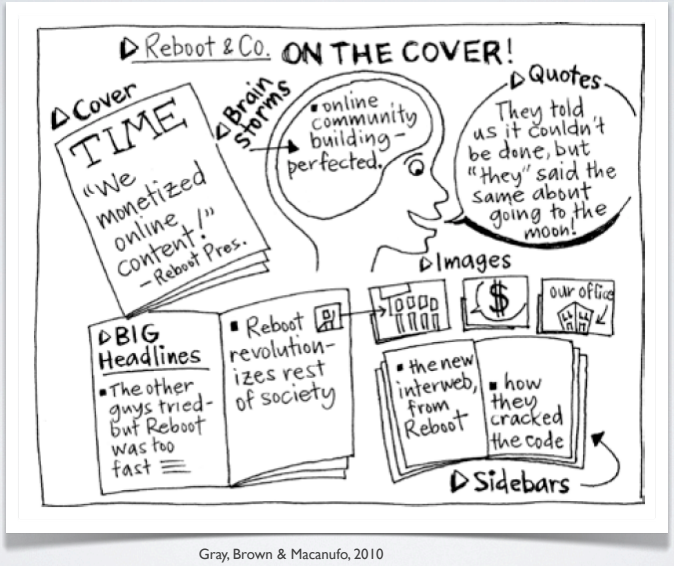
VIDEO PROTOTYPES

http://www.youtube.com/watch?v=LX_27a72uZI

BODYSTORMING

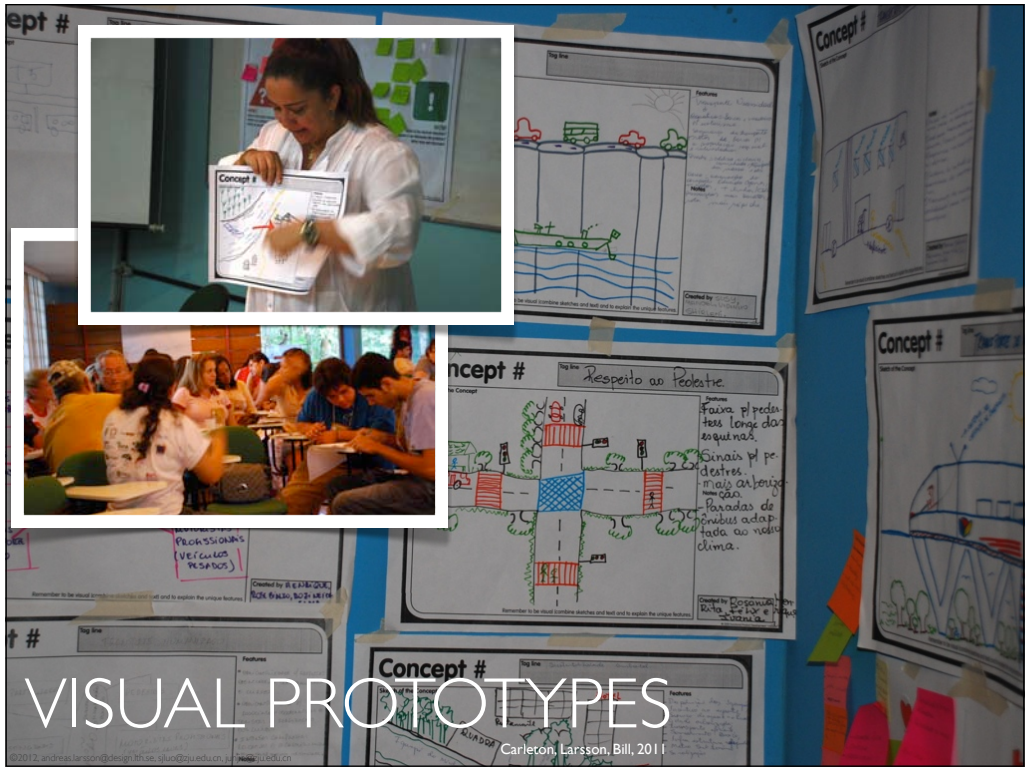
Bodystorming is a technique for experience prototyping; physically experiencing a situation to derive new ideas. It requires setting up an experience - complete with necessary artifacts and people - and physically “testing” it. Bodystorming can also include physically changing your space during ideation. What you're focused on here is the way you interact with your environment and the choices you make while in it.

COVER STORIES

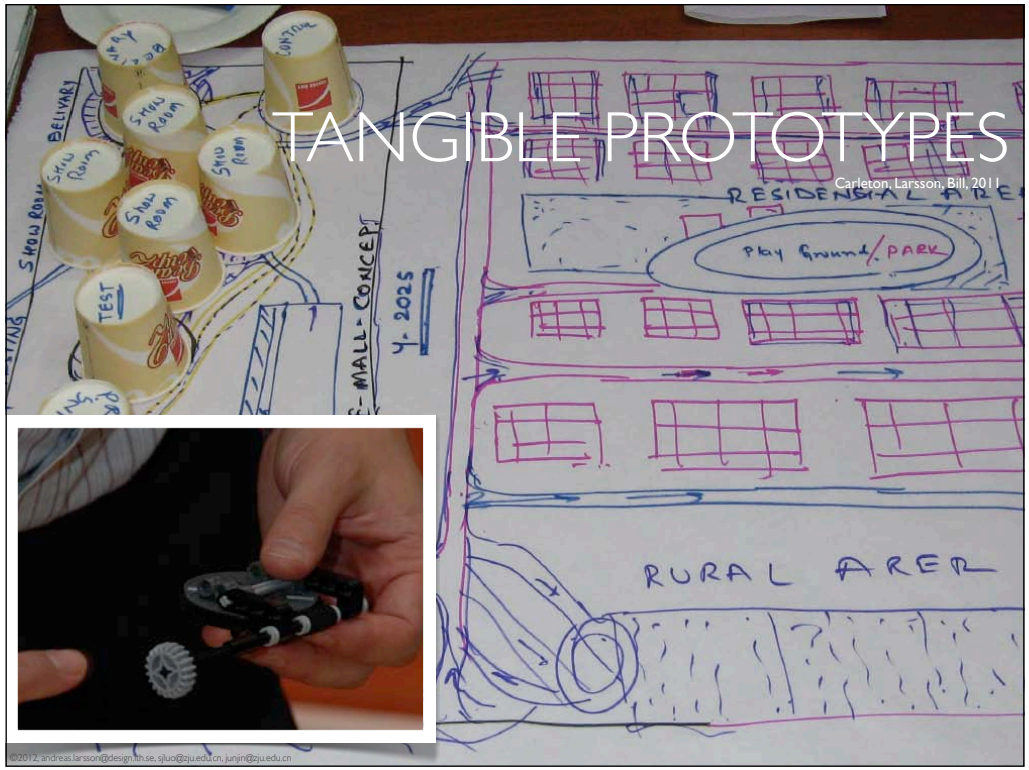


Gray, Brown & Macanufo, 2010

Cover stories can be used in the ideation space as well, but in the implementation space it is useful for focusing and aligning your team around the expectations you have on the launch of your product or service. What would you like mainstream media to say about your concept?



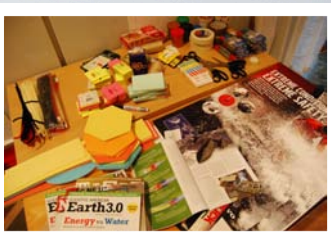
Here we have visual prototypes, or concept sketches, prepared and presented by participants in a workshop on the topic of sustainable transportation solutions for the Soccer World Cup in Brazil. The participants are from industry, academia and the public sector in the city of Manaus, which is where one of the groups of the World Cup is going to play in the summer of 2014.



A team of R&D managers developed a physical mockup of an online community service that was integrated with existing infrastructure in India. They used this mockup to bring the service concept to life for their stakeholders.

A team of engineers used Lego to explore new concepts for a new drilling tool.

MATERIAL



The best prototyping items are inexpensive and readily available. Below is a starting list for your own creativity and artifact building.

Desk supplies

- Post-it notes
- Pencils
- Pens
- Paper clips
- Colored markers and highlighters
- Business cards
- Brochures, pamphlets

Office supplies

- Note pads
- Manila file folders
- Hanging file folders
- Plastic label tabs
- Recycled paper
- Colored paper, cardstock
- Envelopes
- Cardboard
- Ring binders
- Unused boxes for copier paper
- Bubble wrap
- Packing peanuts

Craft materials

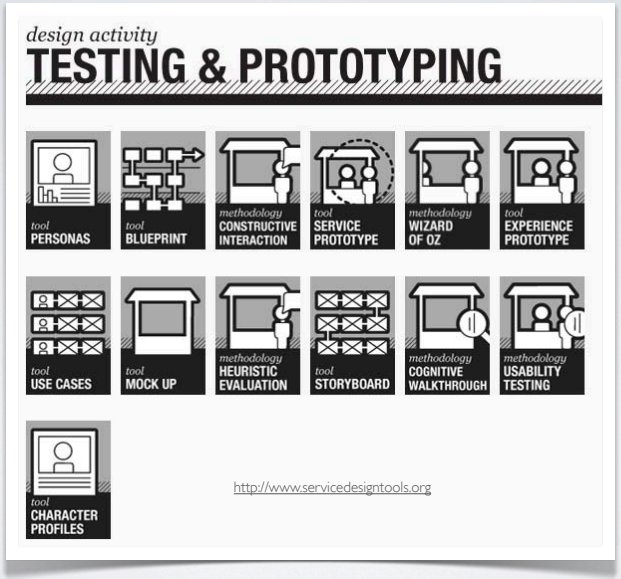
- Colored stickers
- String
- Popsicle sticks
- Index cards
- Pipe cleaners
- Modeling clay (e.g., Play-Doh)

Various adhesives

- Push pins
- Rubber bands
- Masking tape, packing tape

www.moveworkshop.com

INSPIRATION



KEY READINGS

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KEY TAKEAWAYS

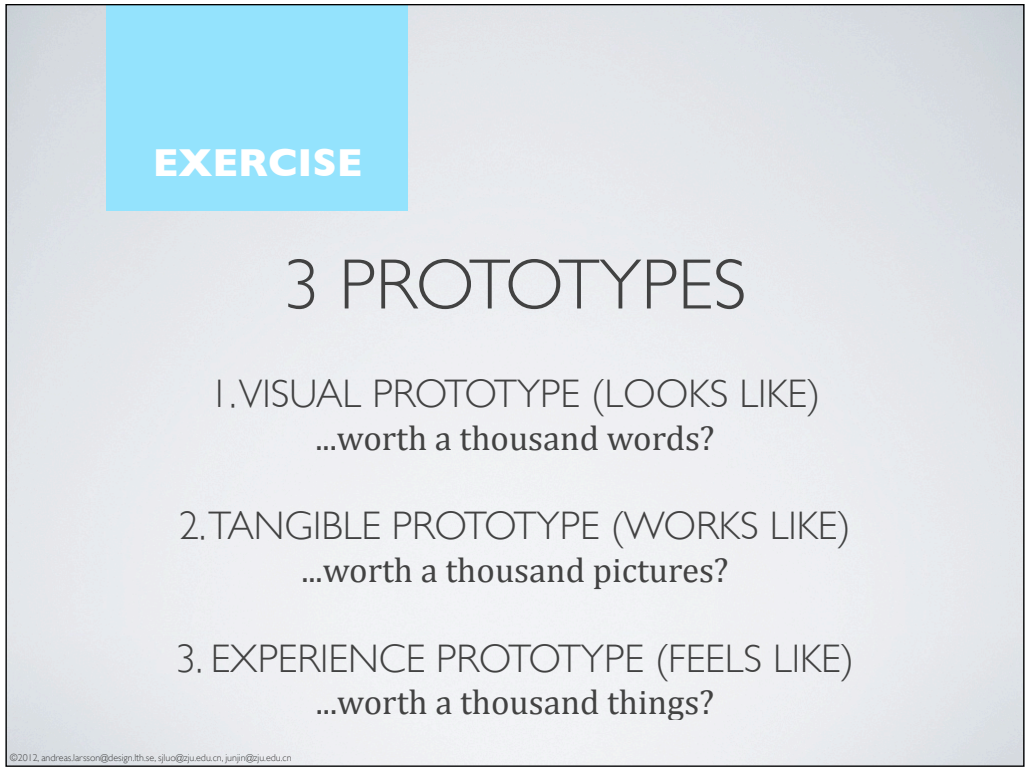
1. DIFFERENT FIDELITIES

2. BUILD THE RIGHT *IT*

3. LOOKS LIKE, BEHAVES LIKE,
WORKS LIKE, FEELS LIKE...

4. FAIL WHILE FAILURE IS CHEAP

5. DO NOT DEFEND YOUR PROTOTYPE

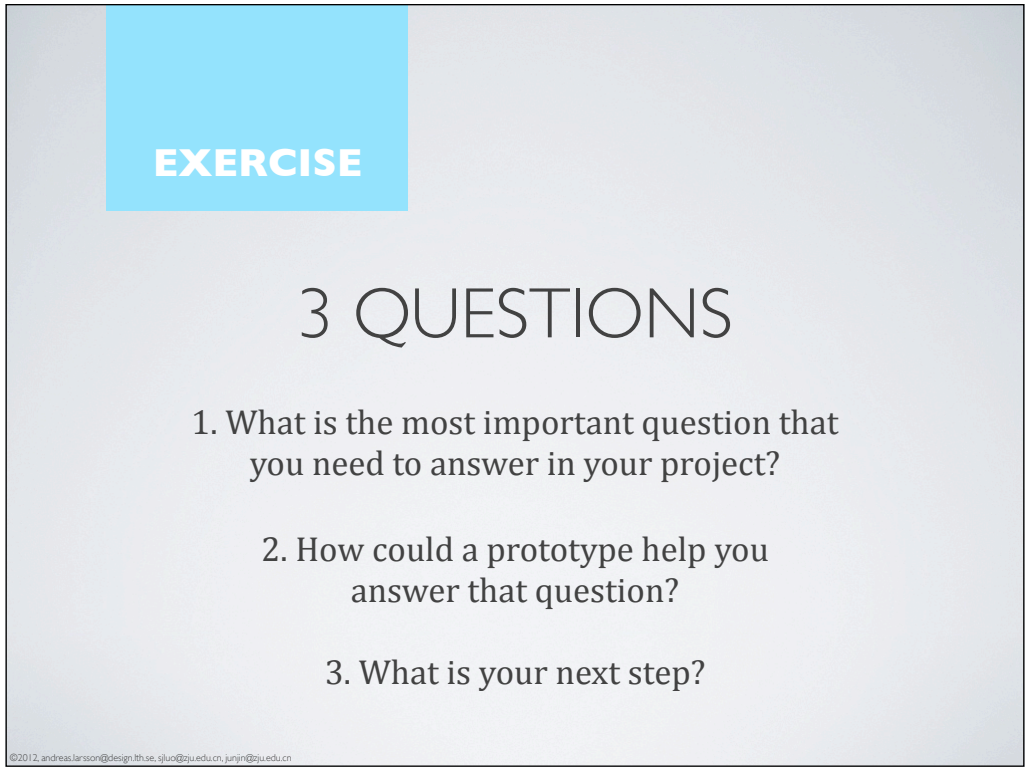


Process:
a) work in sub-teams
b) 30 min prototyping
c) 3 min showcasing

Material:
a) A3 paper and crayons
b) Anything/anyone
c) Anything/anyone

Guiding question:
How can you use your three prototypes to persuade the audience about your unique value proposition(s) in less than three minutes?

Follow up with a moderated all-class discussion.



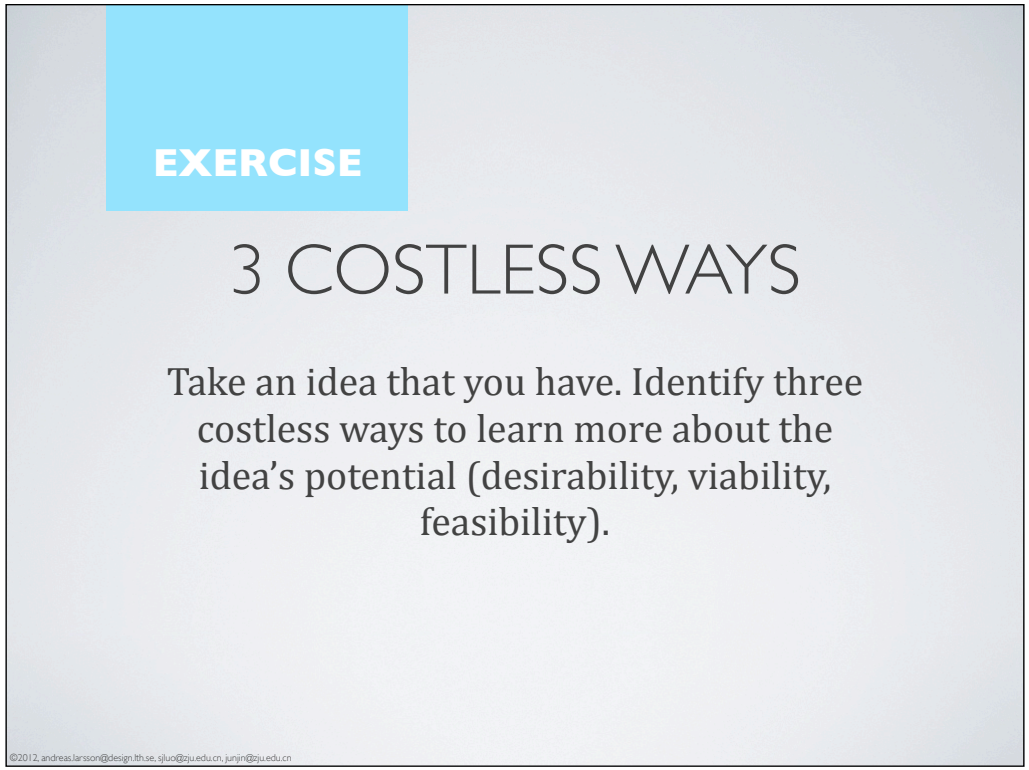
Work in teams to explore these questions:

1. What is the most important question that you need to answer in your project? Based on what you know today, what is the most important thing to learn more about? (i.e. what are you trying to “prove”, “communicate” or “investigate”? Why this focus?)

2. How could a prototype help you answer that question? For that particular aspect, what is the most interesting prototyping approach for your team? (i.e. what kind of prototype will help you answer your own, or other people’s questions? Why this particular approach?)

3. What is your next step as a team to move towards a proof-of-concept that is credible and persuasive? (i.e. when will you start and who will do what?)

Follow up with a moderated all-class discussion.



Work in teams.

Take an idea that you have. Identify three costless ways to learn more about the idea's potential (desirability, viability, feasibility).

Follow up with a moderated all-class discussion.

Pssst! A few pointers for your final presentation...

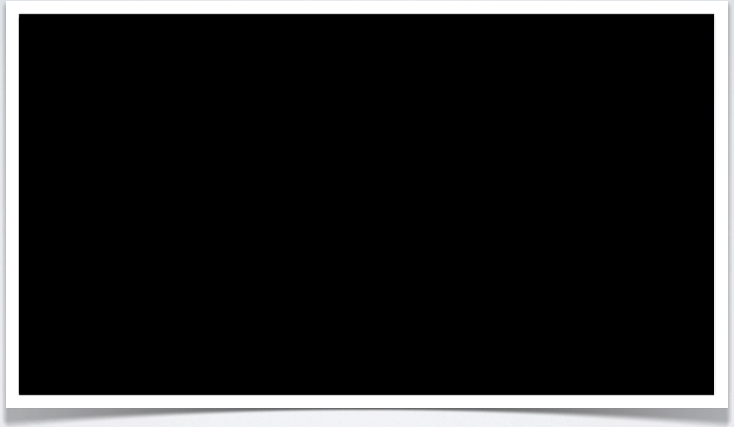
ANCHOR & TWIST

http://www.youtube.com/watch?v=TEDt4zVzTBo

PRESENTATIONS THAT STICK

http://www.youtube.com/watch?v=8x70zw2tq9Y&feature=plcp

START WITH WHY



http://www.youtube.com/watch?v=OVnN4S52F3k