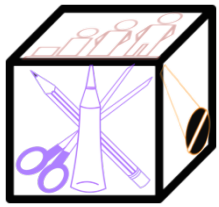


# CREATE

Prototype to discover  
users' feelings

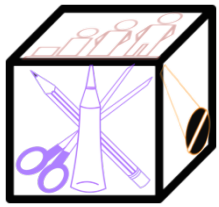
dr hab. Laurent Babout  
Institute of Applied Computer  
Science, TUL



## Step 4: Create

- The main objectives are to:
  - create low fidelity prototypes solution(s)
  - Understand the need for iteration
  - Prepare prototype for library
  - ...in order to test it later with users
- Apply last 2 points for your project

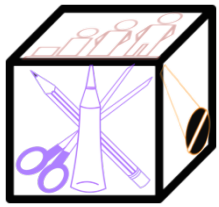




## **David Kelly (IDEO)**

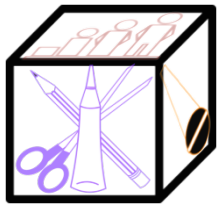
“Humans are really interesting. If you show them your idea in a prototype form, very few people will tell you what’s right about it.

But everybody will tell you what’s wrong with it.”



# What is prototyping?

- A process that:
  - creates usable artifacts
  - at different level of completion/fidelity
  - so as users can interact with them in context of use
  - in order to
    - answer design question
    - or confirm design assumptions (proof of concept)
    - and communicate design ideas

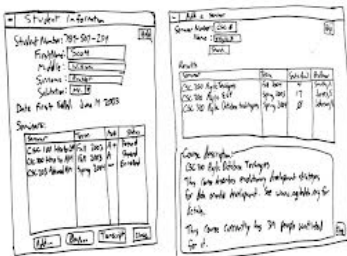


# Digital Prototype scaling

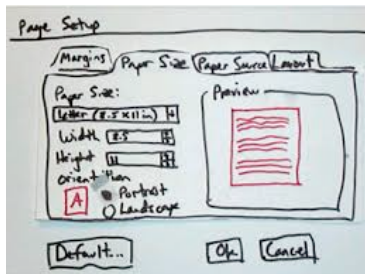
Aesthetics

LOW FIDELITY PTPP: good for rapid iteration and “on the fly” customization

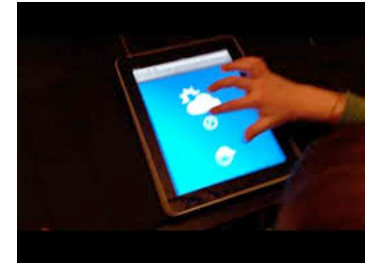
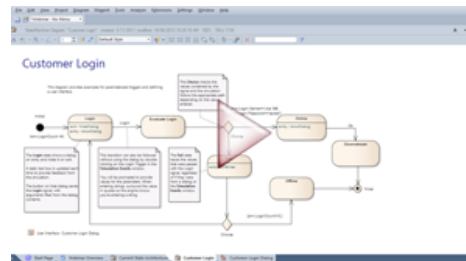
Sketching



Paper PTPP



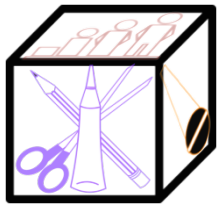
Simulation



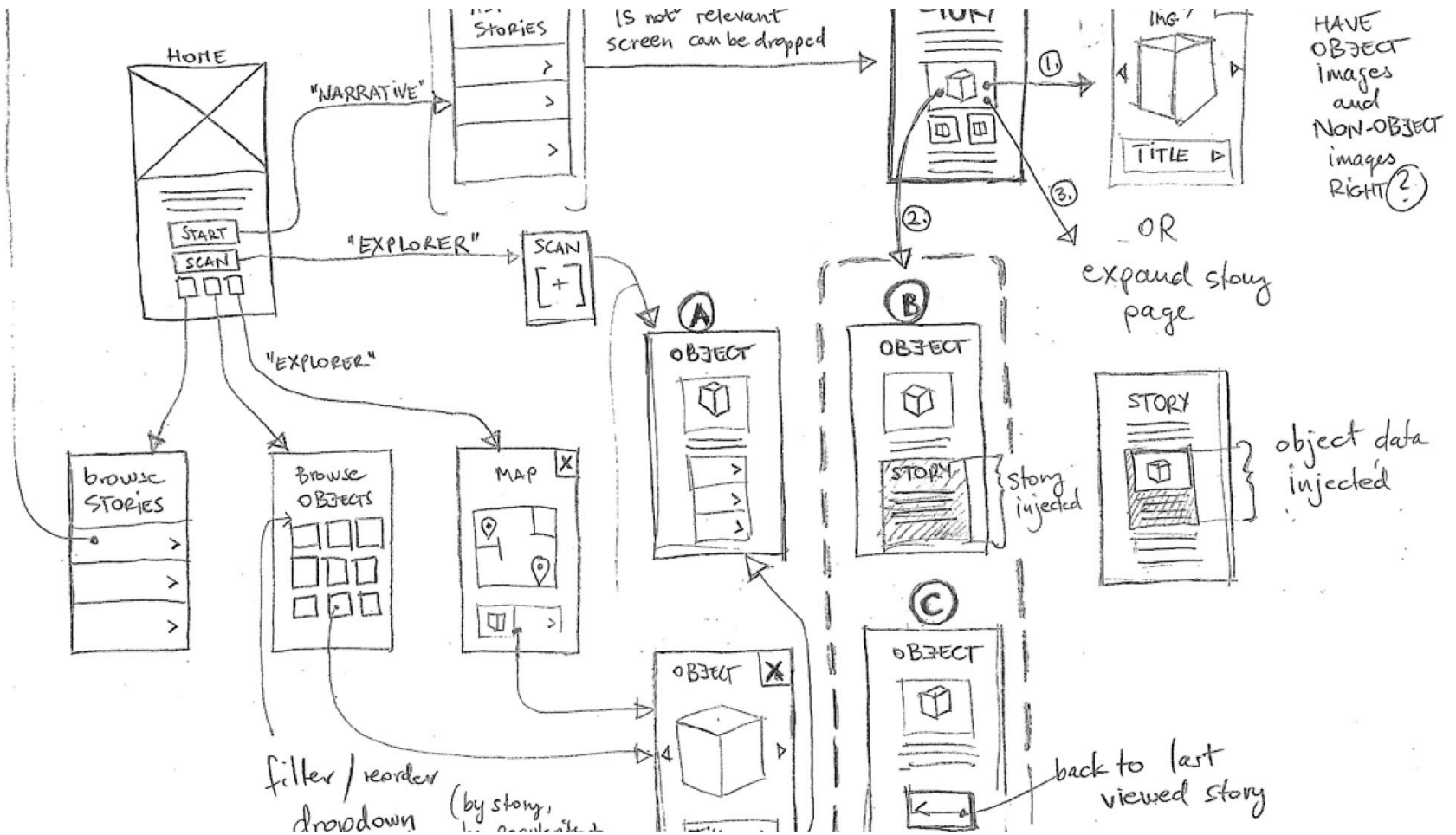
Digital PTPP

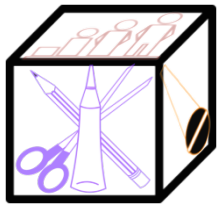
HIGHER FIDELITY PTPP = decreased speed of iteration

Functionality



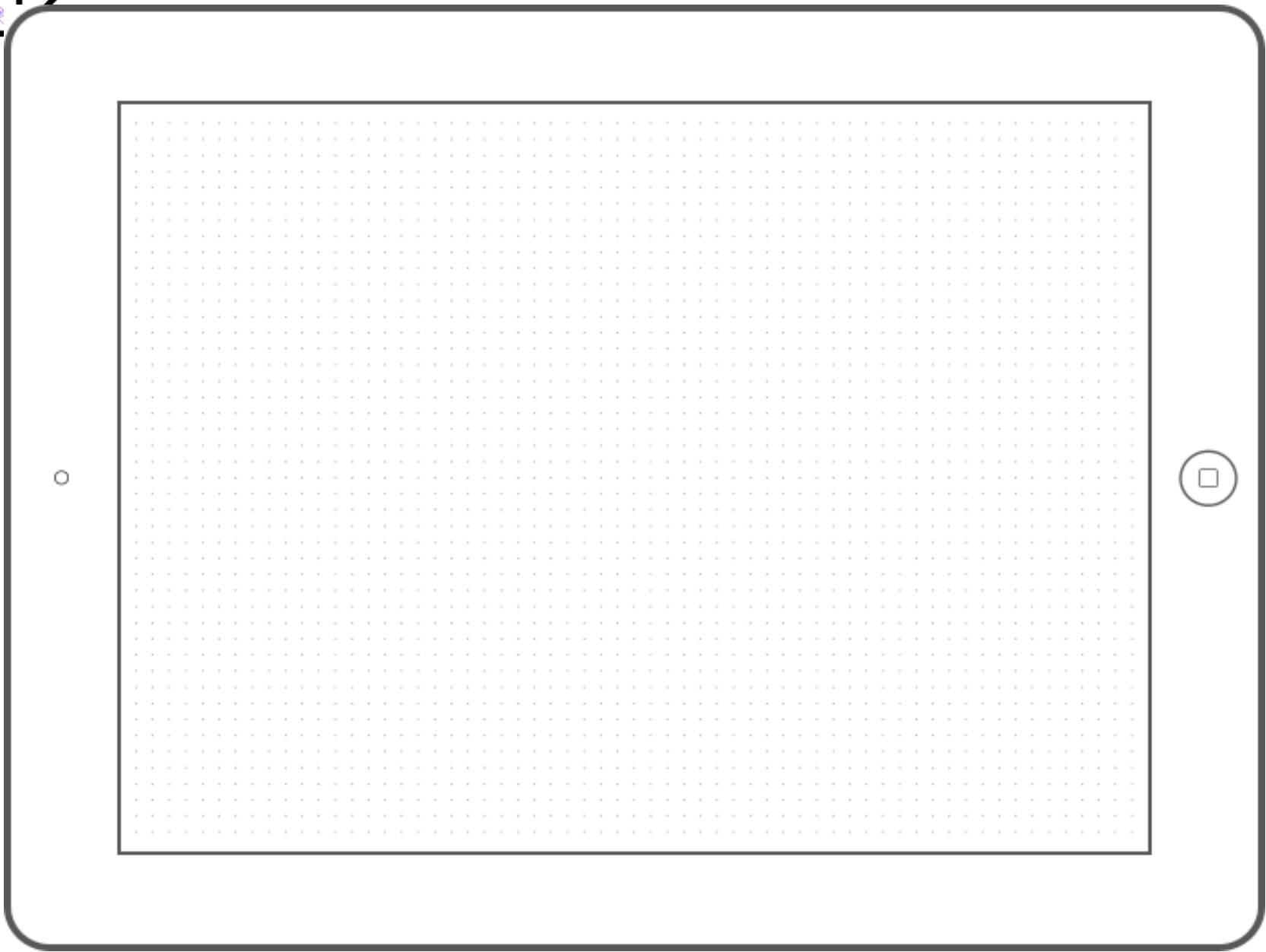
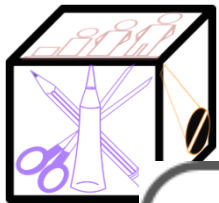
# Digital PTPP: sketch

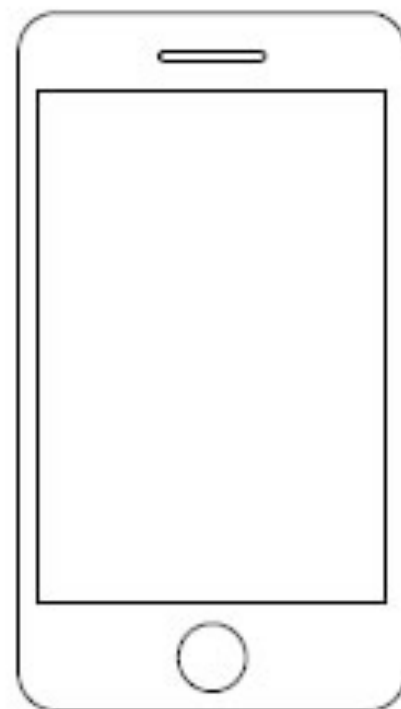
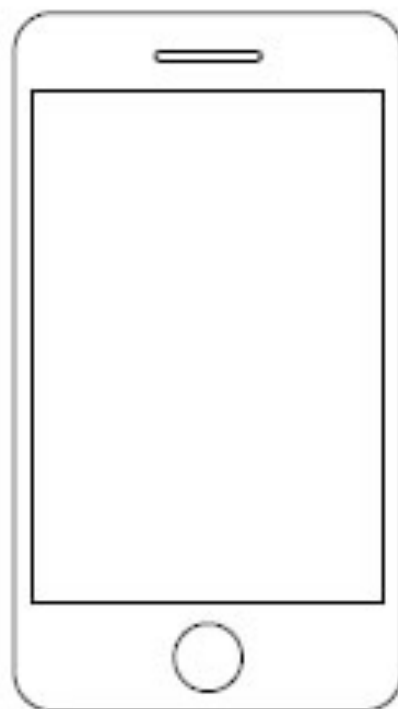
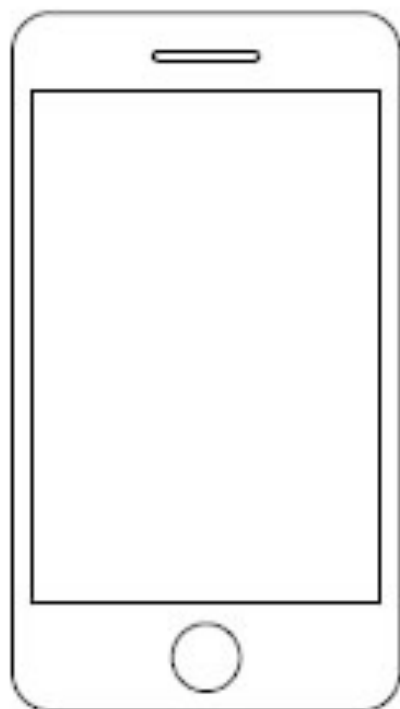
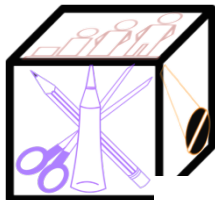




# Paper PTTTP







Notes:

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Notes:

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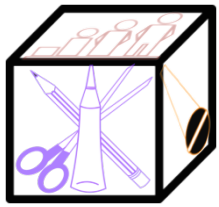
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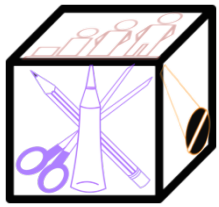
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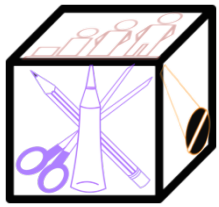
# Team challenge #1

- Starbucks asks you to design a paper PTPP of a App that:
  - allows customer to pre-order different types of coffee (espresso, black, white, latte, cappuccino...) in different size (small, large, XL) and different quantity ( $1-\infty$ )
  - change customer's mind (even cancel pre-order) if mistake done
  - generate after validation a summary of the command
  - YOU HAVE 10 MINUTES!!!





- Now, invite mates from other team to test your prototype
- One main rule
  - give the prototype and say nothing about how it works
- The tester should give some feedback:
  - I like...
  - I wish...
  - What if...



# Physical prototype scaling

Aesthetics

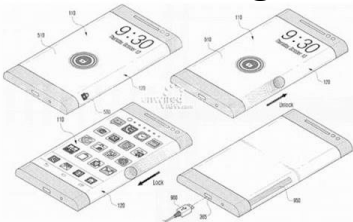
LOW FIDELITY PTTP: good for rapid iteration and “on the fly” customization

Form

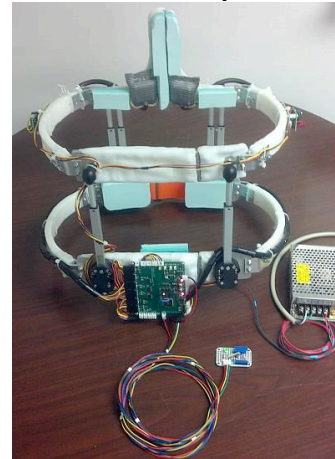


Ergonomic

Sketching



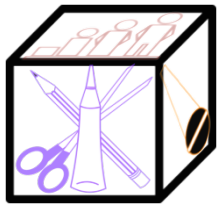
Functional mockup



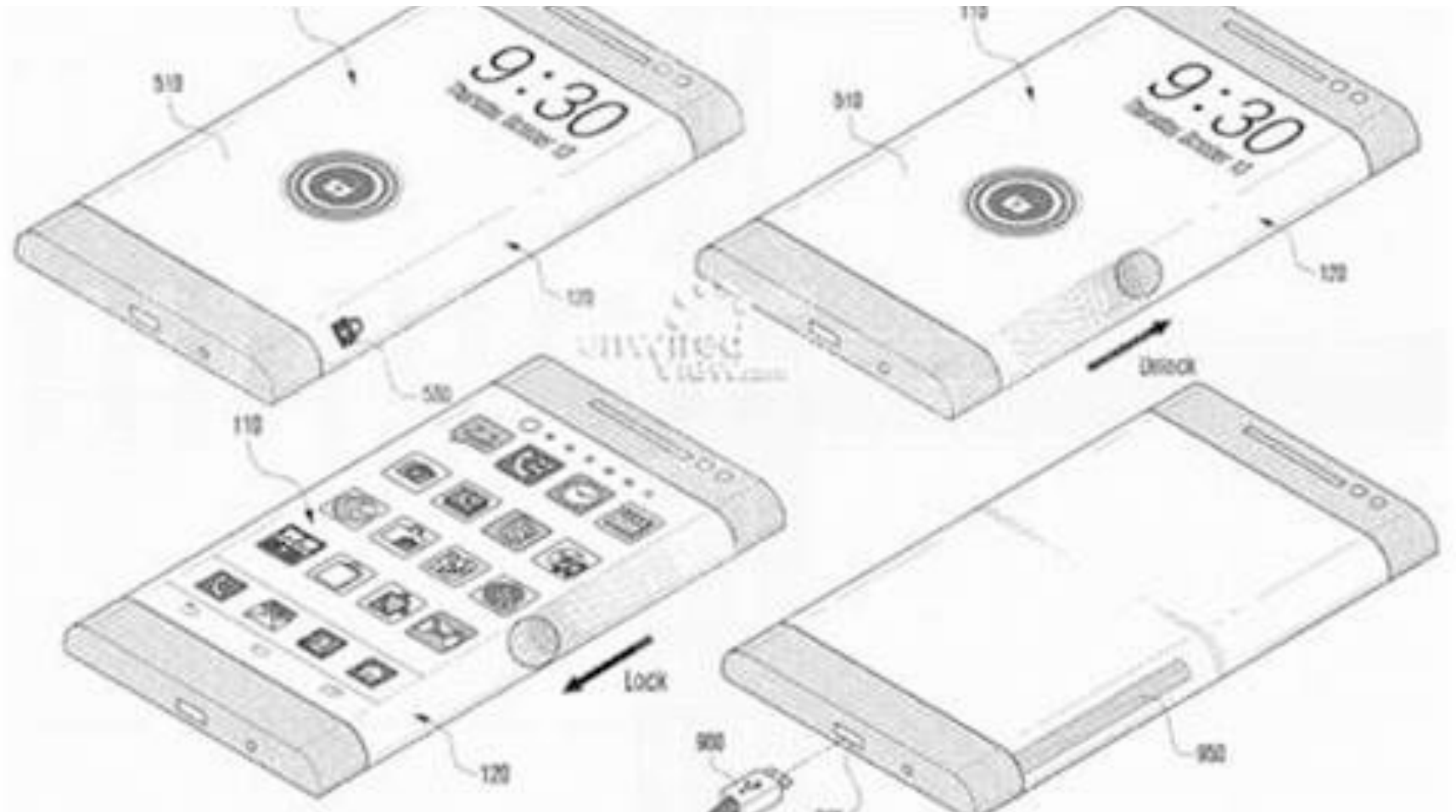
High-fidelity  
Functional  
PTTP

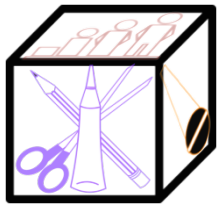
HIGHER FIDELITY PTTP = decreased speed of iteration

Functionality



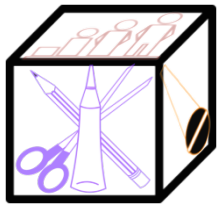
# Sketch





# Form model

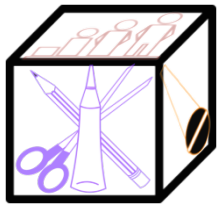




# Video prototyping

- A good complement to paper prototyping, scenarios and storyboards
- Primarily to communicate and idea/ convey a message to an external audience, but also to develop and share a common vision within the DT team
- Very scalable, can be seen by millions

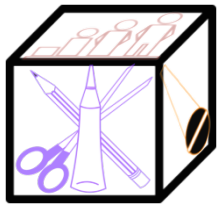




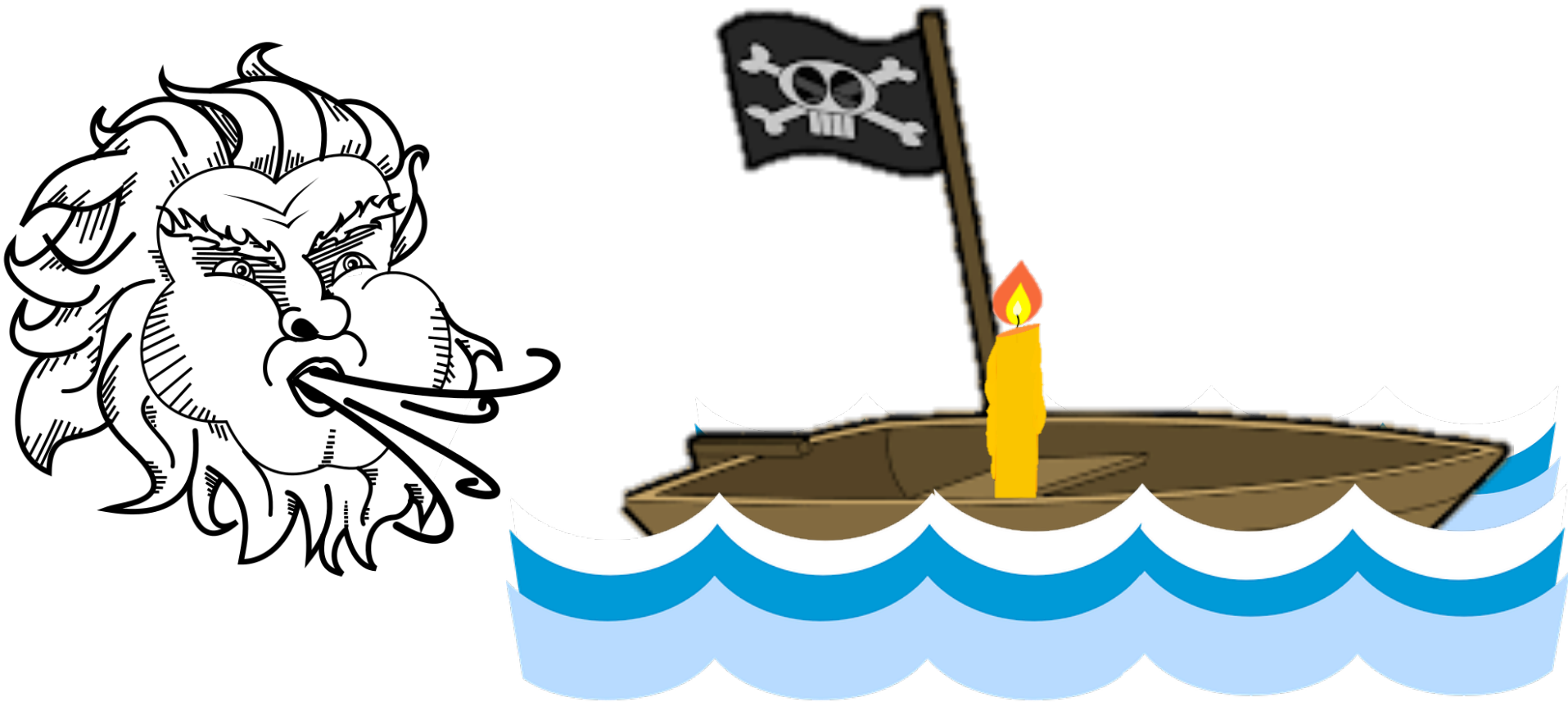
# Safe carpet PTTP



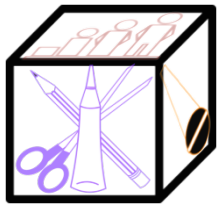
PBL 2014: smart bathroom (mentor: Ł Januszkiewicz, Institute of Electronics PŁ)



# The candle transport challenge

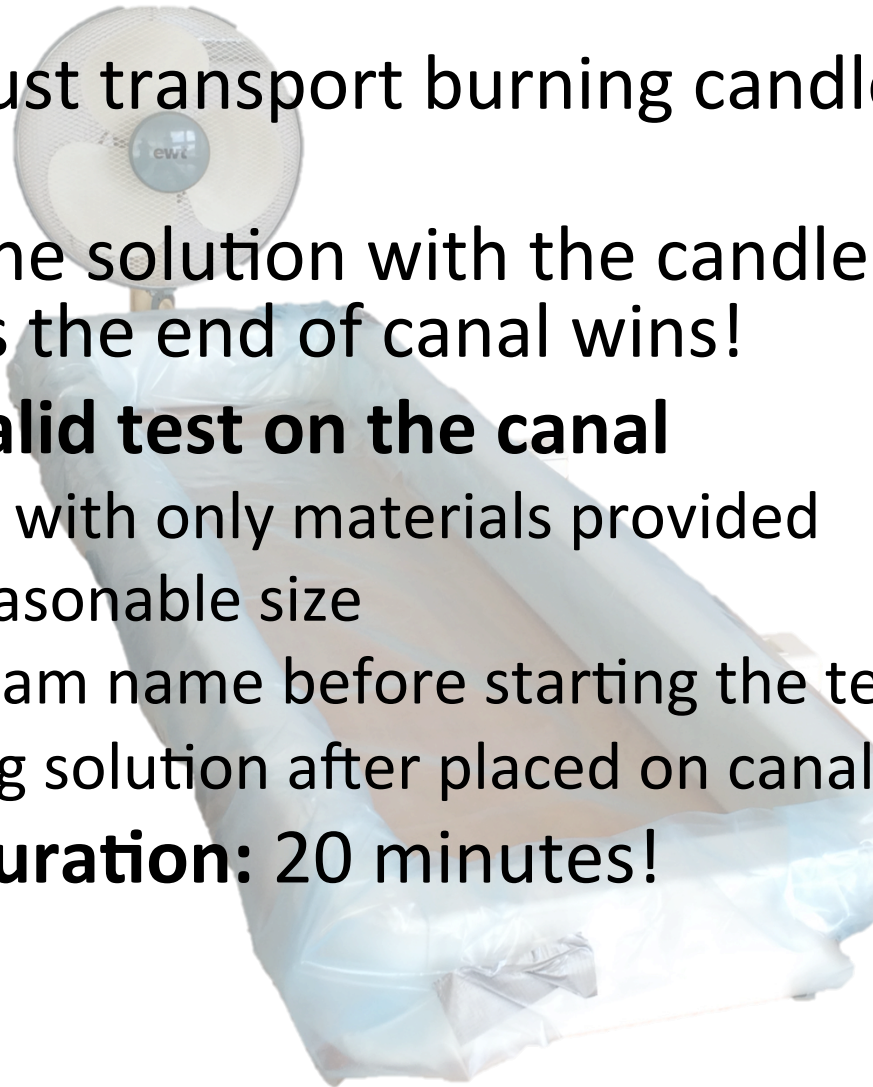


BASED ON CHALLENGE FROM

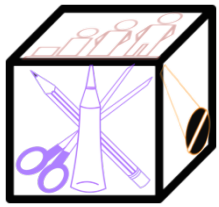


# Rules

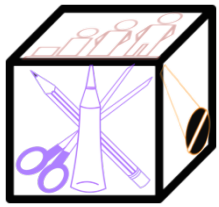
- **Aim:** You must transport burning candle across the canal
- **Objective:** the solution with the candle still burning that touches the end of canal wins!
- **To have a valid test on the canal**
  - Build boats with only materials provided
  - Boats of reasonable size
  - Tell your team name before starting the test
  - No touching solution after placed on canal at start point
- **Challenge duration:** 20 minutes!



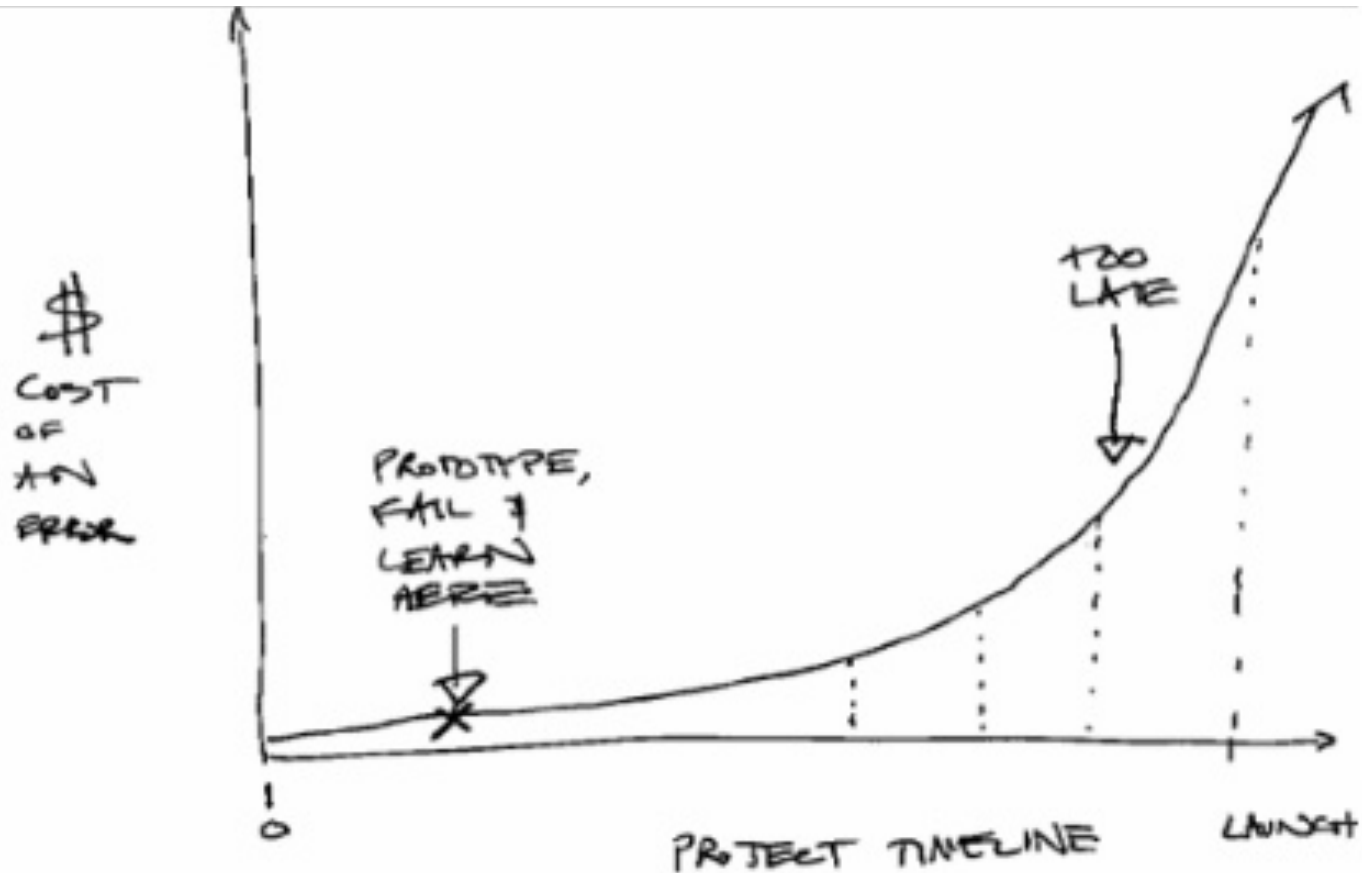




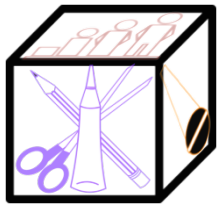
**TOO MUCH  
PLANNING CAN BE  
DANGEROUS**



# Fail early fail often

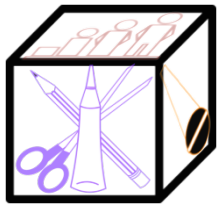


cost of failure vs. project time



Tested??





# DT @ UiT



- 2 Erasmus students
- New packaging for oil bottle



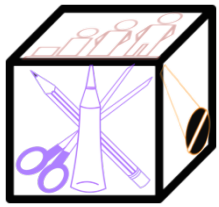
+



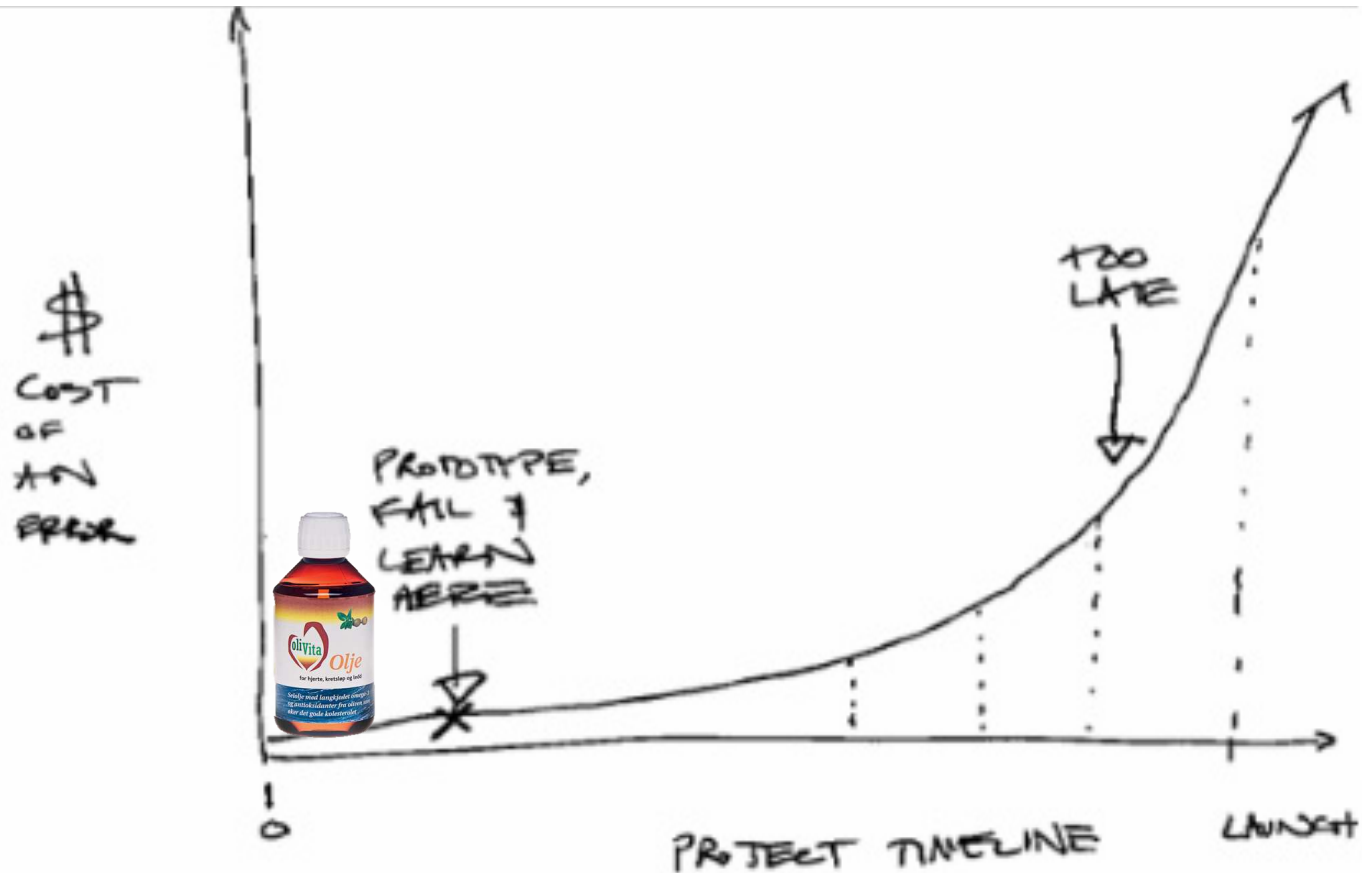




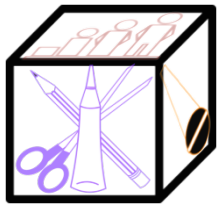
Elicit  
Feedback



# Fail early fail often



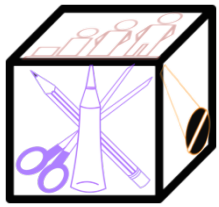
cost of failure vs. project time



# The NBA basketball scandal...







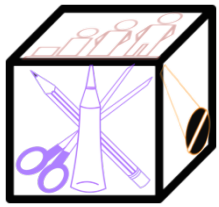
# June 28<sup>th</sup>, 2006



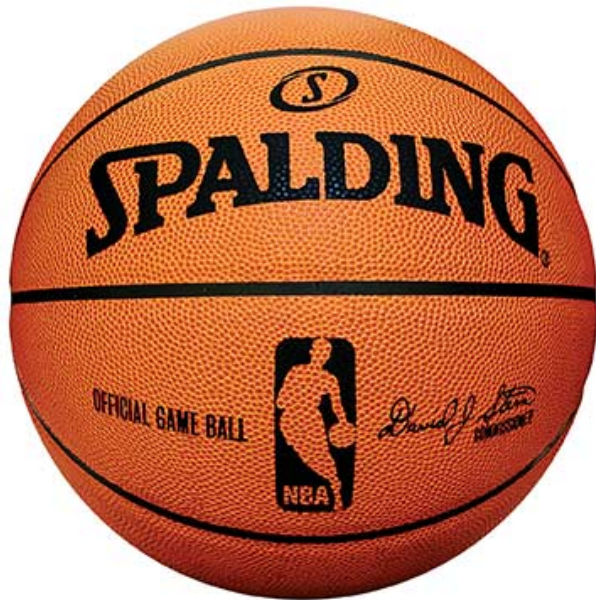
***“The NBA is introducing a new Official Game Ball for play beginning in the 2006-07 season. The new ball, manufactured by Spalding, features a new design and a new material that together offer better grip, feel, and consistency than the current leather ball. This marks the first change to the ball in over 35 years and only the second in 60 seasons.”***

David Stern, NBA Commissioner

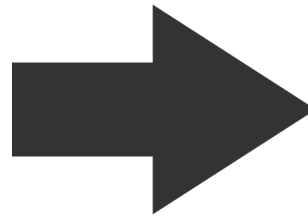




1971 - 2006



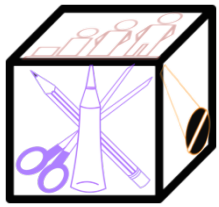
Leather



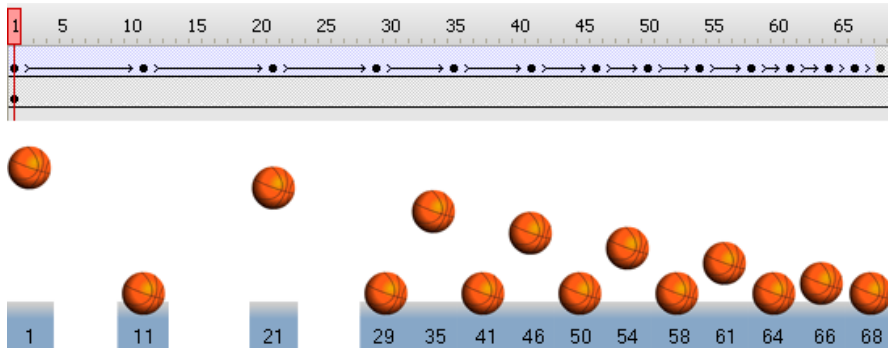
2006 -

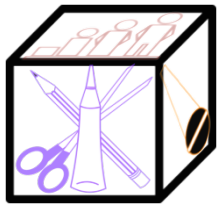


Microfiber



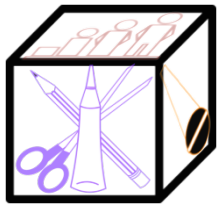
  
**SPALDING**  
TRUE TO THE GAME™





# October 2006: New NBA season begins

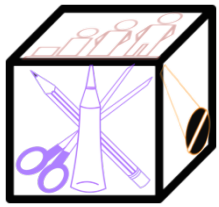




# What happened?

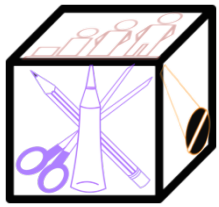






# Finger bleeding!





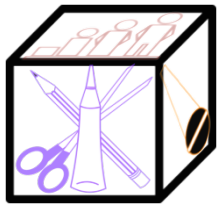
# November 2006

***“That ball, it was cutting guys up!”*** – NBA manager

***“The worst ball I ever played with”*** – NBA Player

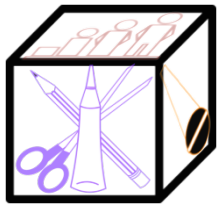
***“Get rid of that fucking ball and use the old ball!”***  
– NBA Player





# Unfair labor practice lawsuit from players union





# December 11<sup>th</sup> 2006 – NBA statement



## NBA to Switch to Leather Ball on Jan. 1

Posted Dec 11 2006 9:35PM

TOOLS  [Print](#)  [RSS Feeds](#)  [E-News Sign Up](#)

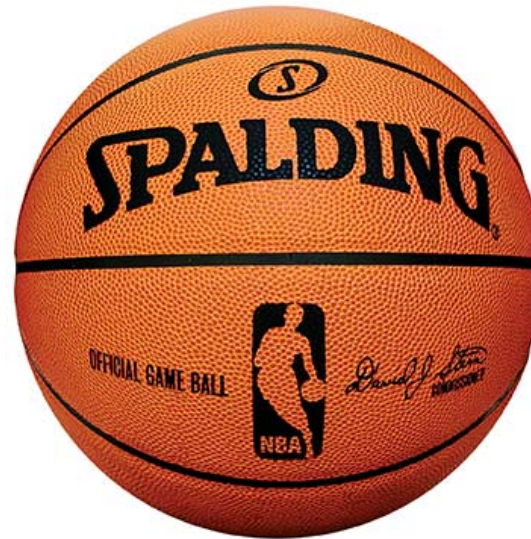
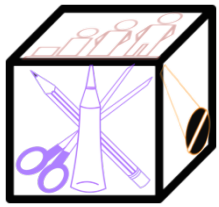
**NEW YORK, DEC. 11, 2006** – The NBA announced today that on January 1, 2007, it will return to the leather game ball made by Spalding, for the remainder of the 2006-07 season.

"Our players' response to this particular composite ball has been consistently negative and we are acting accordingly," said NBA Commissioner David Stern.

NBA STORE



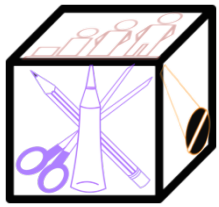




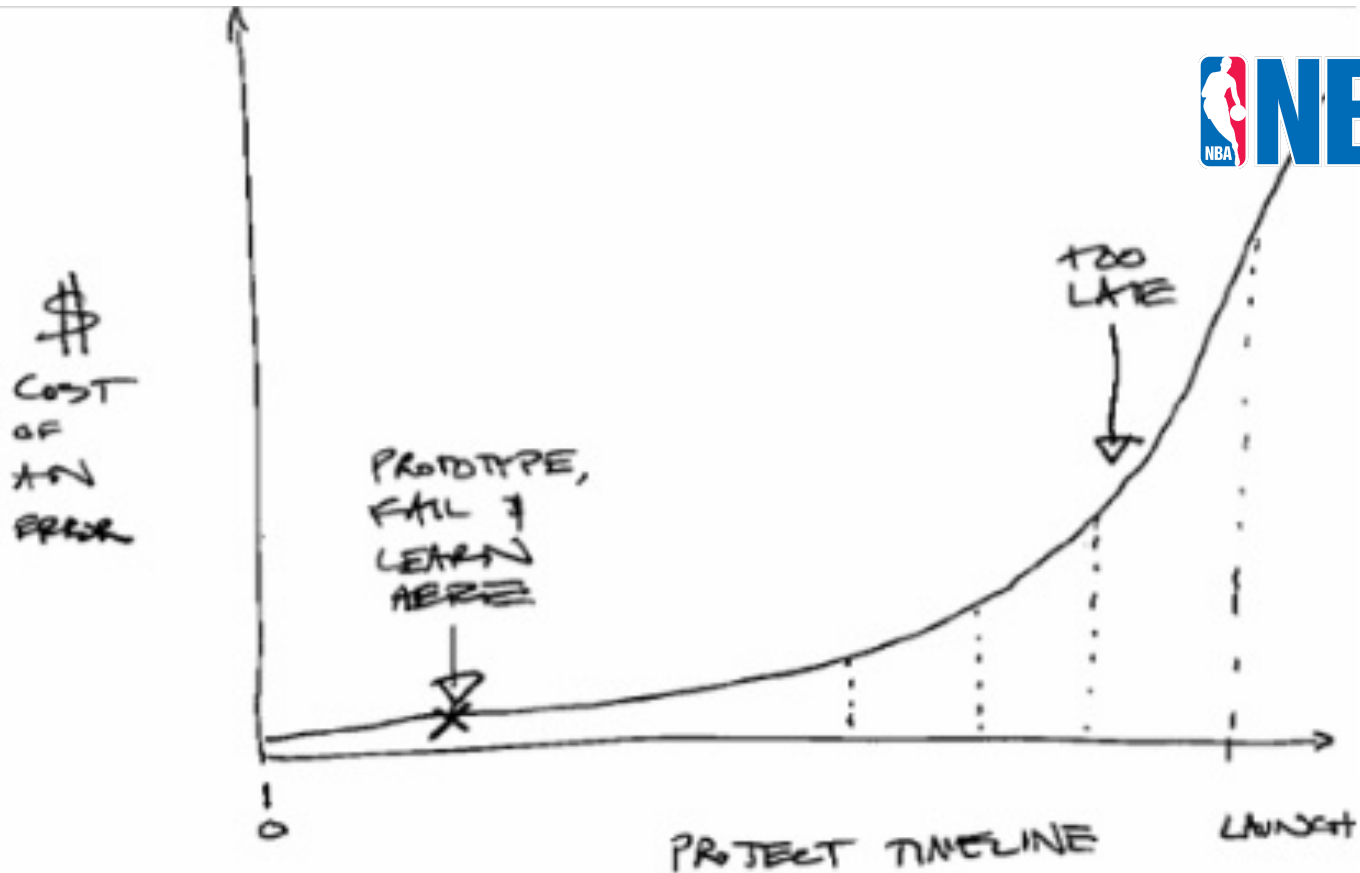
***"I guess the biggest learning from that is getting the players involved in the process earlier if you're going to make a change like that,"***

Paul Sullivan, Senior Vice President of Spalding

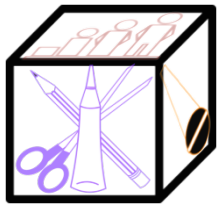




# Fail early fail often

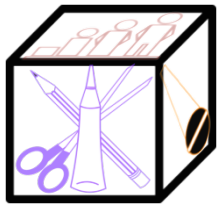


cost of failure vs. project time



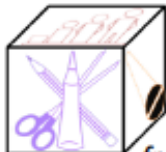
# Strategy

- Start with low fidelity prototype
- Ask yourself questions:
  - who are you solving a problem for?
    - who is primary user of product, system or service?
    - does this user have physical/cognitive disabilities?
    - What is the context of use of the product?
  - what goal is the user trying to achieve?
- Loosely sketch a variety of same PTP, but with different forms, control surfaces
  - 2-3 versions of same thing, to see how different is interaction with design
  - if goal requires sequence of actions, try to sketch these in as limited sequence as possible



# Sketch for new Starbucks experience





## 2. Prepare a workshop and realize it

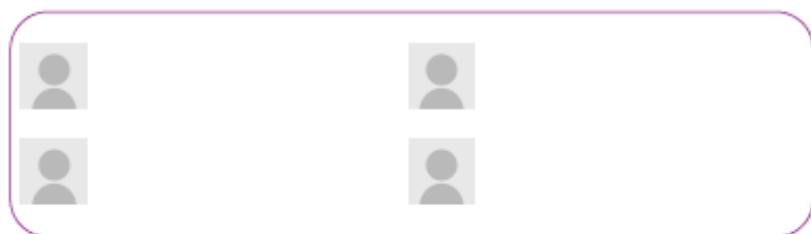
60-90 min for preparation  
60 min for realization

*Prototypes must be evaluated by users. Imagine a set-up where you will invite users to test your prototype and get feedback from them. Prepare questionnaire and define roles during workshop to grab as much info as possible. Fill this for each workshop.*

1- Setting: select the place where the testing will be done.

2- People: list at least 3 persons who will participate to the workshop. Give justifications for their participation.

3- Roles: use the fact that you are a team to split roles between you, e.g. facilitator, interviewer, demonstrator, photographer, ...



4- Instructions: think about instructions given to the users to make sure that they will interact in the right way with your PTP

5- Feedback: think about the questions you will ask to get feelings, impressions, pros and cons from the participants. Choose open questions (recall interview during Discovery phase)

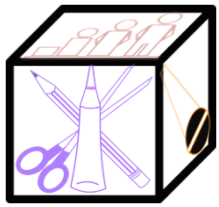
*Start with specific questions*

*(e.g. like/dislike, change one aspect)*

*Questions to help you understand participants hopes, fears and ambitions*

*Go deeper with "What ...if" questions to find out more perspectives the persons have*

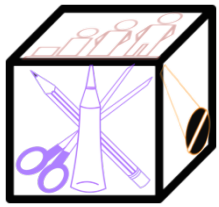
6- Scenario: imagine how you will organize your workshop by defining key steps and the timeline. Keep the full duration in an hour.



# Strategy (ct'd)

- Test your PTTP with 2-3 users in the context of use
  - ask users to imagine that they are in the appropriate context
  - tell users about the task they will be completing
  - provide the PTTP and task on a piece of paper, and ask them to walk you through the act of performing it





# Strategy (ct'd)

- While testing:
  - RECORD EVERYTHING
  - have one person dedicated to taking notes and one person dedicated to taking photos or video
  - ask the users to talk as much as possible while performing the task
- After testing:
  - review your notes, videos and capture each point of failure for each user and POST-IT
  - organise post-its in groups or themes and label each group with a post-it of a different color
  - Refine your designs and PTTTPs so as they “solve” the problem. Repeat the process until they actually do

