(P)

6.9.2012

FRONTEND CONFERENCE 2012
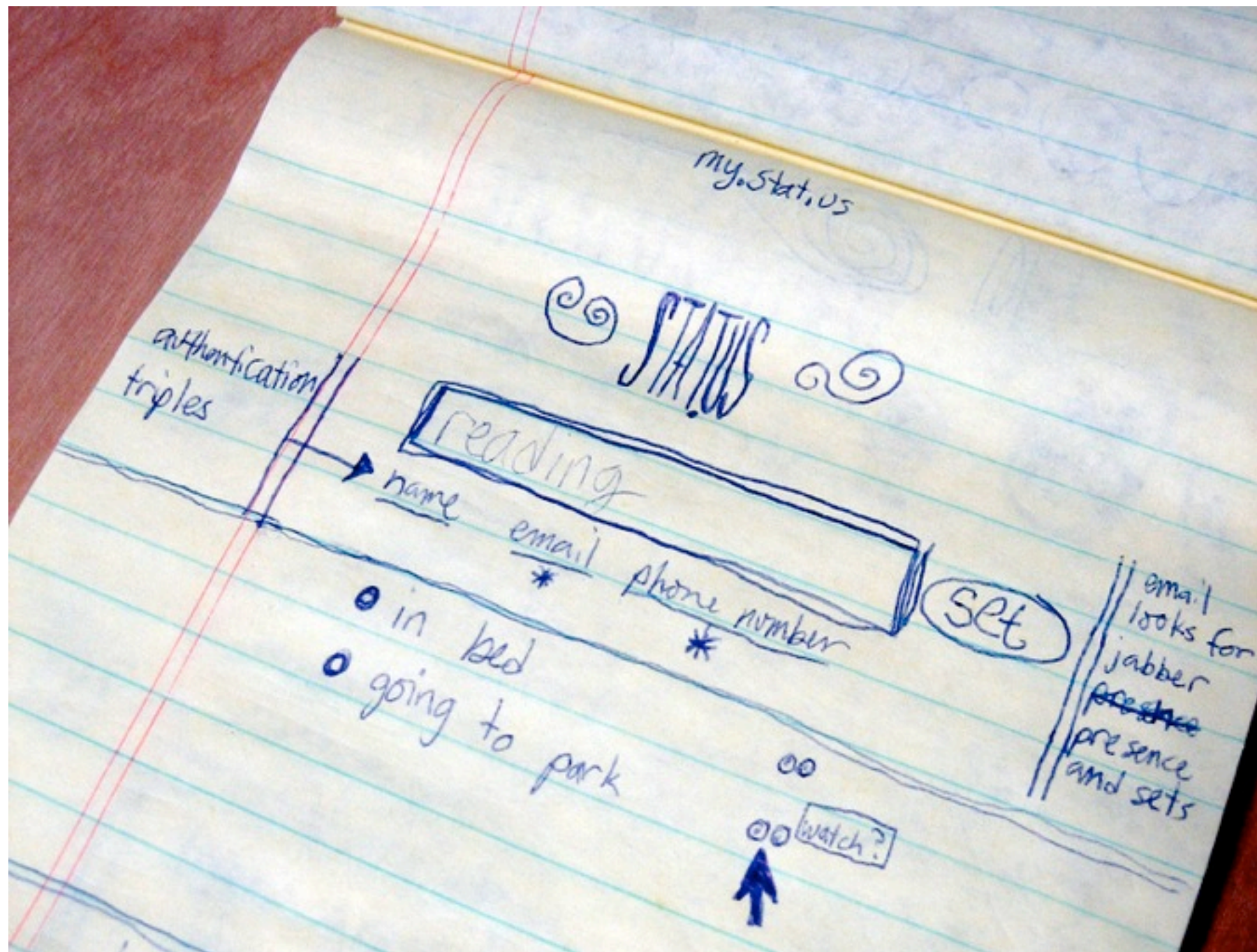## SKETCHING, WIREFRAMING, PROTOTYPING

(P)HILIPP SCHRÖDER

SKETCHING, WIREFRAMING, PROTOTYPING

How to Be Agile and Avoid Half-Baked
User Experience

TWITTER, ANYONE?

@pips1

INITIAL SKETCH OF TWITTER

TWITTER ECO-SYSTEM

TRENDS

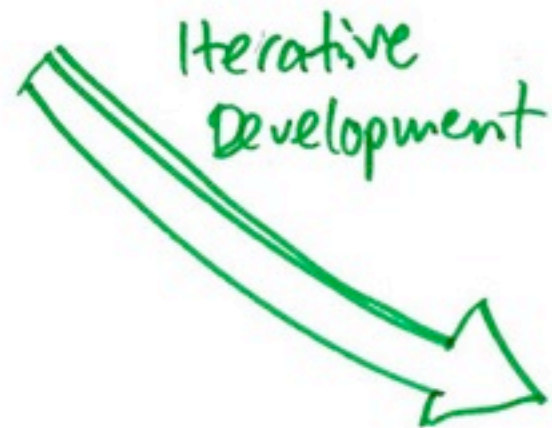AGILE DEVELOPMENT

In-house

Iterative Development

LEAN STARTUP

Web Companies

Hypothesis Testing

Design & Development Workflow

CONTENT STRATEGY

Agencies

Content first

WHAT IS THIS *AGILE* THING THAT EVERYBODY IS TALKING ABOUT, REALLY?

AGILE MANIFESTO

➡ **Individuals and interactions** over processes and tools

➡ **Working software** over comprehensive documentation

➡ **Customer collaboration** over contract negotiation

➡ **Responding to change** over following a plan

TRADITIONAL RELAY RACE

Team members run alone.

Collaboration is not built into the game.

AGILE RUGBY GAME

Intensive and continuous collaboration is core to the game.

Reach the goal line again and again to win the game.

A CRUCIAL DIFFERENCE: PROCESS CONTROL

➡ All agile frameworks rely on *Empirical Process Control*.

➡ Traditional frameworks (and most current management approaches) rely heavily on *Defined Process Control*.

DEFINED PROCESS CONTROL

CHARLIE CHAPLIN IN "MODERN TIMES"

WHY *WATERFALL* *DOESN'T* WORK FOR ME

RELAY RACES & "DEATH MARCHES"

KNOW-HOW SILOS

NO TEDIOUS SPEC WORK

WHY *AGILE DEVELOPMENT* WORKS FOR ME

EMPIRICAL PROCESS CONTROL - AS EXEMPLIFIED BY *SCRUM*

Product Backlog → Sprint planning

Sprint retrospective

Delivery / Sprint review

Development

End of project

Goal achieved / money run down

24hrs
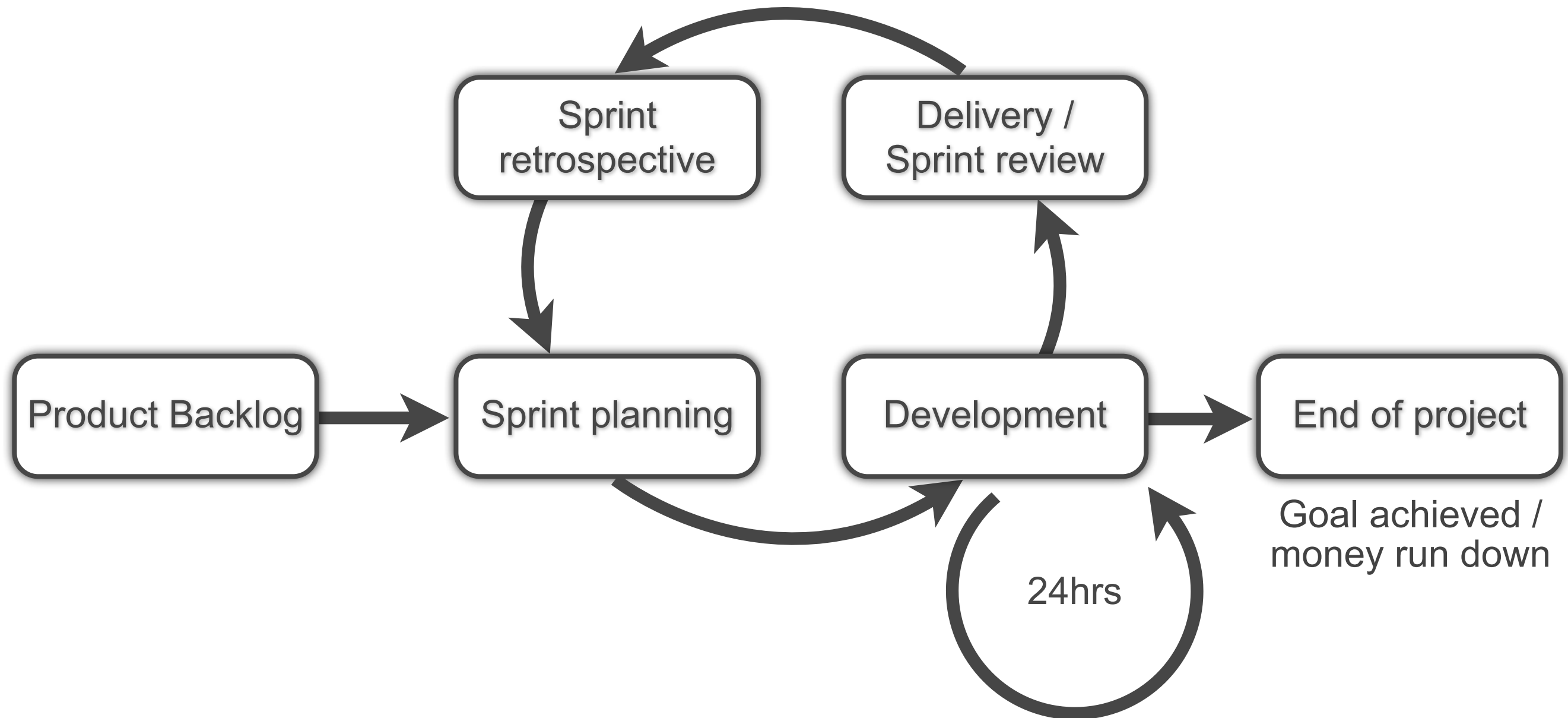
1 ITERATION = 1 SPRINT = 2 WEEKS TO 1 MONTH

EVERY ITERATION, WE HAVE AN INCREMENT OF WORKING SOFTWARE

—

... in order to quickly generate business value and develop software that satisfies user needs.

EACH ITERATION, WE *REVIEW* THE PRODUCT (WHAT WE BUILT) & THE PROCESS (HOW WE WORK)

... in order to continuously improve both.

REDUCING UNCERTAINTY

WATERFALL

End Uncertainty
What do we build?

High

Low

High   **Means Uncertainty**   Low
How do we build it?

AGILE

End Uncertainty
What do we build?

High

Low

High   **Means Uncertainty**   Low
How do we build it?
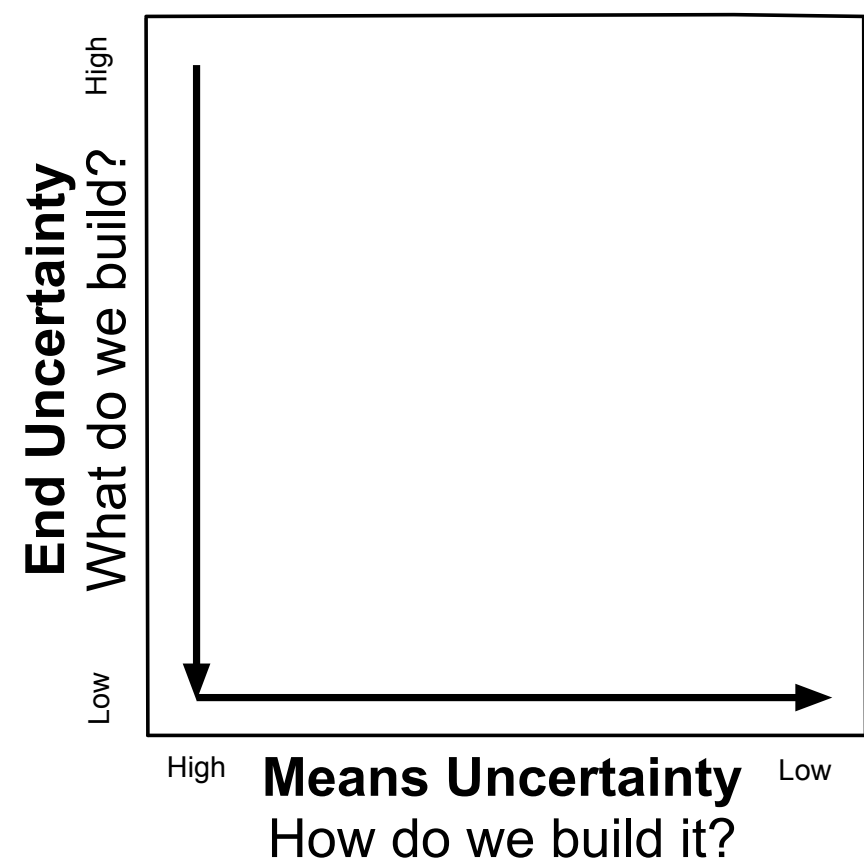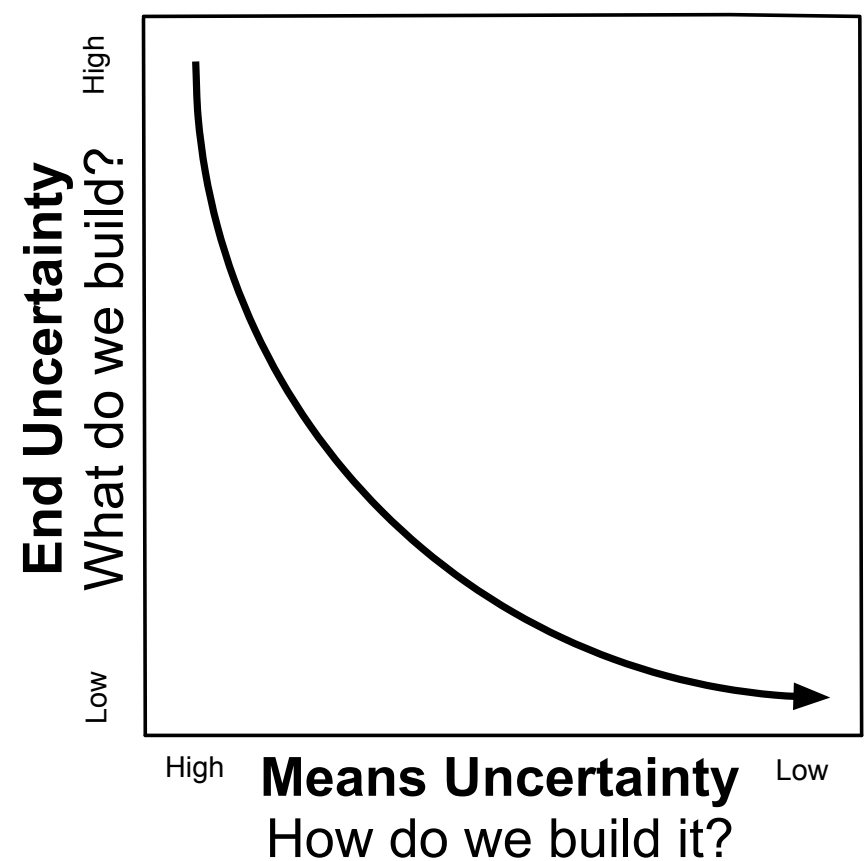
TEAM WORK TAKES THE *CENTER STAGE* IN AGILE

Agile aims to enable "hyper productivity" through *close collaboration, self-organization, empowerment* and *focussing* of the team and the stakeholders

AGILE IS A
PULL SYSTEM

➡ Peer to peer exchange of information

➡ Collective learning

➡ Collective responsibility (shared goal)

THE CURRENCY IN AGILE IS SHARED UNDERSTANDING

Product Owner

Scrum Master

Developer

Shared
understanding

Tester

Designer

LEAN THINKING

to improve efficiency & effectiveness

➡ Keeping focus on (customer) value

➡ Removing non valuable activities
  (e.g. excessive documentation)

➡ Optimizing the workflow & information flow to
  achieve the shared goal

➡ Attention to symptoms of overburden
  (work with a sustainable pace)

MERGING AGILE WITH UX DESIGN

➡ Communicate fast and light (sketching)

➡ Work in small continuous iterations

➡ Collaborate actively across roles/silos (participatory design)

PARALLEL TRACKS,
UX AHEAD OF DEVELOPMENT

Pre-project

Iteration 0
Project initialisation

Iteration 1

Iteration 2

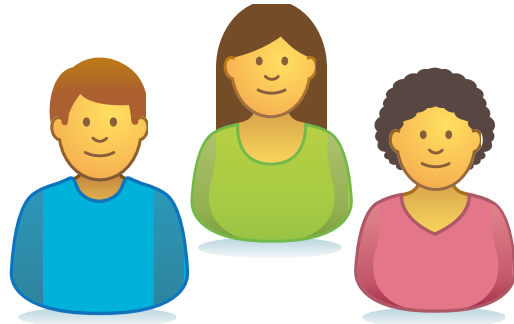**Customer (Product Owner)**

Collaborate with designer
Provide input for iteration 1-n

Validate design
Provide input for iteration 2

Validate design
Provide input for iteration 3

Test iteration 1
Provide input for iteration 4

Customer data

Design 1

Customer data

Design 2

Customer data

Design 3

Customer data

Designer

UX research & ideation
Create initial concepts

UX research & ideation 2
Refine design for iteration 1

UX research & ideation 3
Collaborate on iteration 1
Refine design for iteration 2

UX research & ideation 4
Test iteration 1
Collaborate on iteration 2
Refine design for iteration 3

Design 1b

Design 2b

Code

Design 3b

Code

Developers

Development environment setup

Implement high dev low UI features

Implement designs

THE ROLE OF DESIGN
HAS CHANGED

AGILE ANTI-PATTERN: GENIUS DESIGN & THE "BIG REVEAL"

BESCHREIBUNG

DESIGNER'S ROLE IN AGILE: KEEPER OF THE VISION & FOREMOST *FACILITATOR*
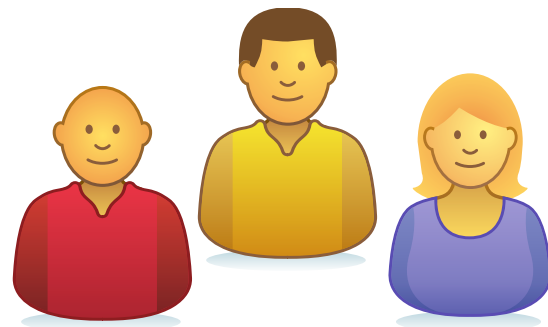
Users

UX Researcher

Visual Designer

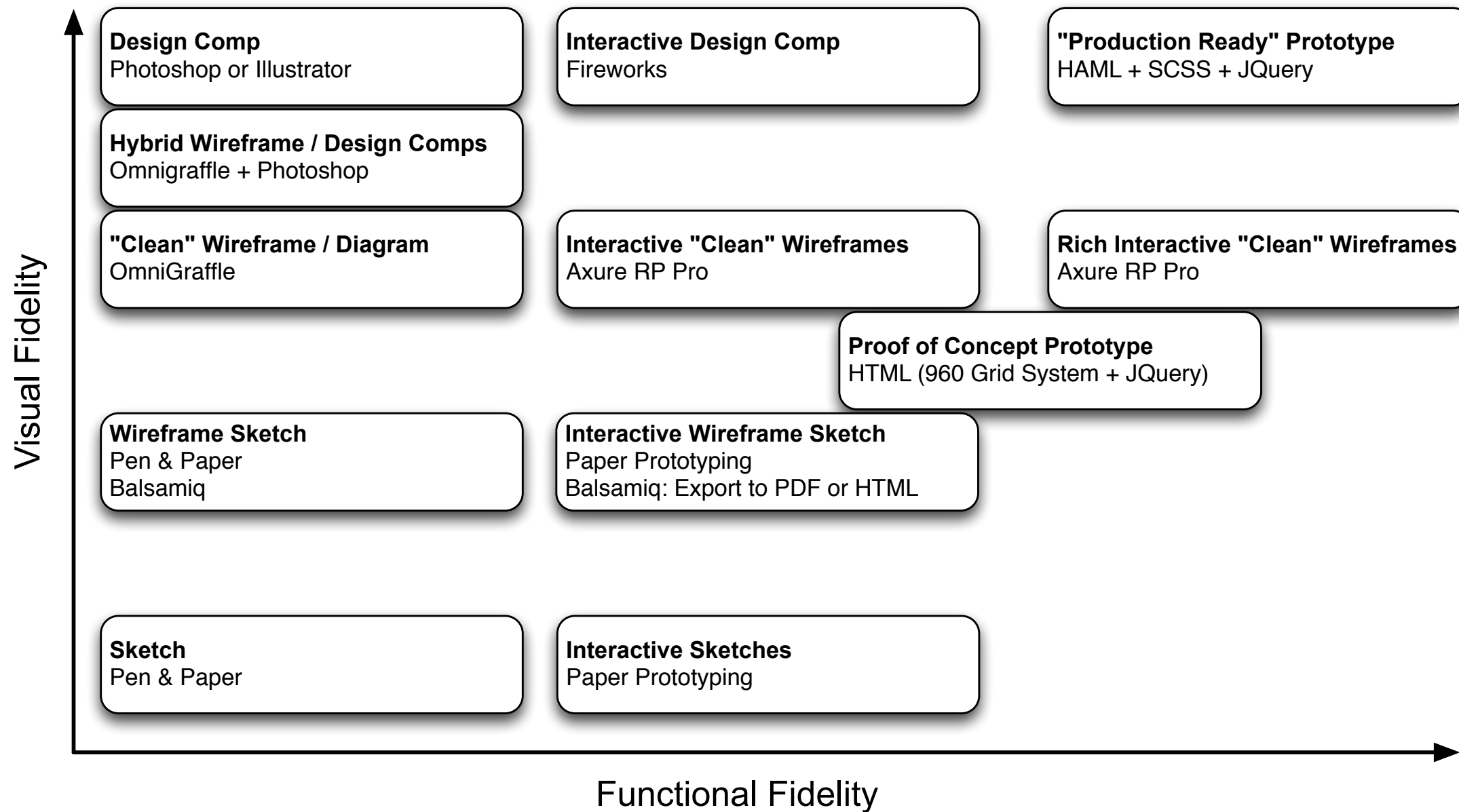Customer Service Rep

UX Designer

Product Owner

Developers

PROTOTYPING

VISUALIZE AND SHARE CONCEPTS

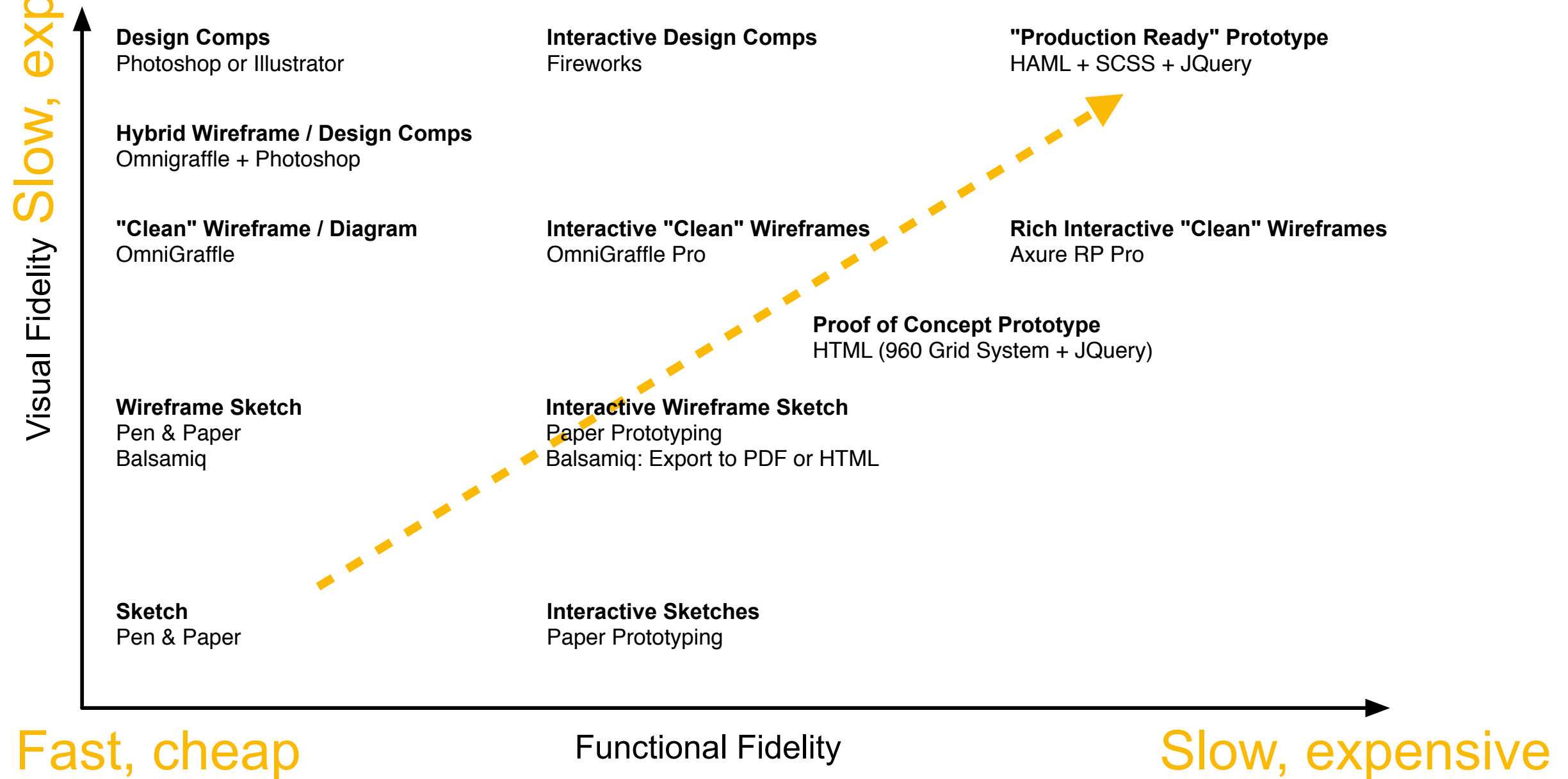# MANY TOOLS AND APPROACHES FOR PROTOTYPING

Ordered by visual & functional fidelity

Visual Fidelity (vertical axis)

Design Comp
Photoshop or Illustrator

Interactive Design Comp
Fireworks

"Production Ready" Prototype
HAML + SCSS + JQuery

Hybrid Wireframe / Design Comps
Omnigraffle + Photoshop

"Clean" Wireframe / Diagram
OmniGraffle

Interactive "Clean" Wireframes
Axure RP Pro

Rich Interactive "Clean" Wireframes
Axure RP Pro

Proof of Concept Prototype
HTML (960 Grid System + JQuery)

Wireframe Sketch
Pen & Paper
Balsamiq

Interactive Wireframe Sketch
Paper Prototyping
Balsamiq: Export to PDF or HTML

Sketch
Pen & Paper

Interactive Sketches
Paper Prototyping

Functional Fidelity (horizontal axis)

CRITERIA FOR PICKING THE RIGHT TOOL

➡ Audience

➡ Intent

➡ Familiarity and learnability

➡ Cost

➡ Collaboration

➡ Distribution

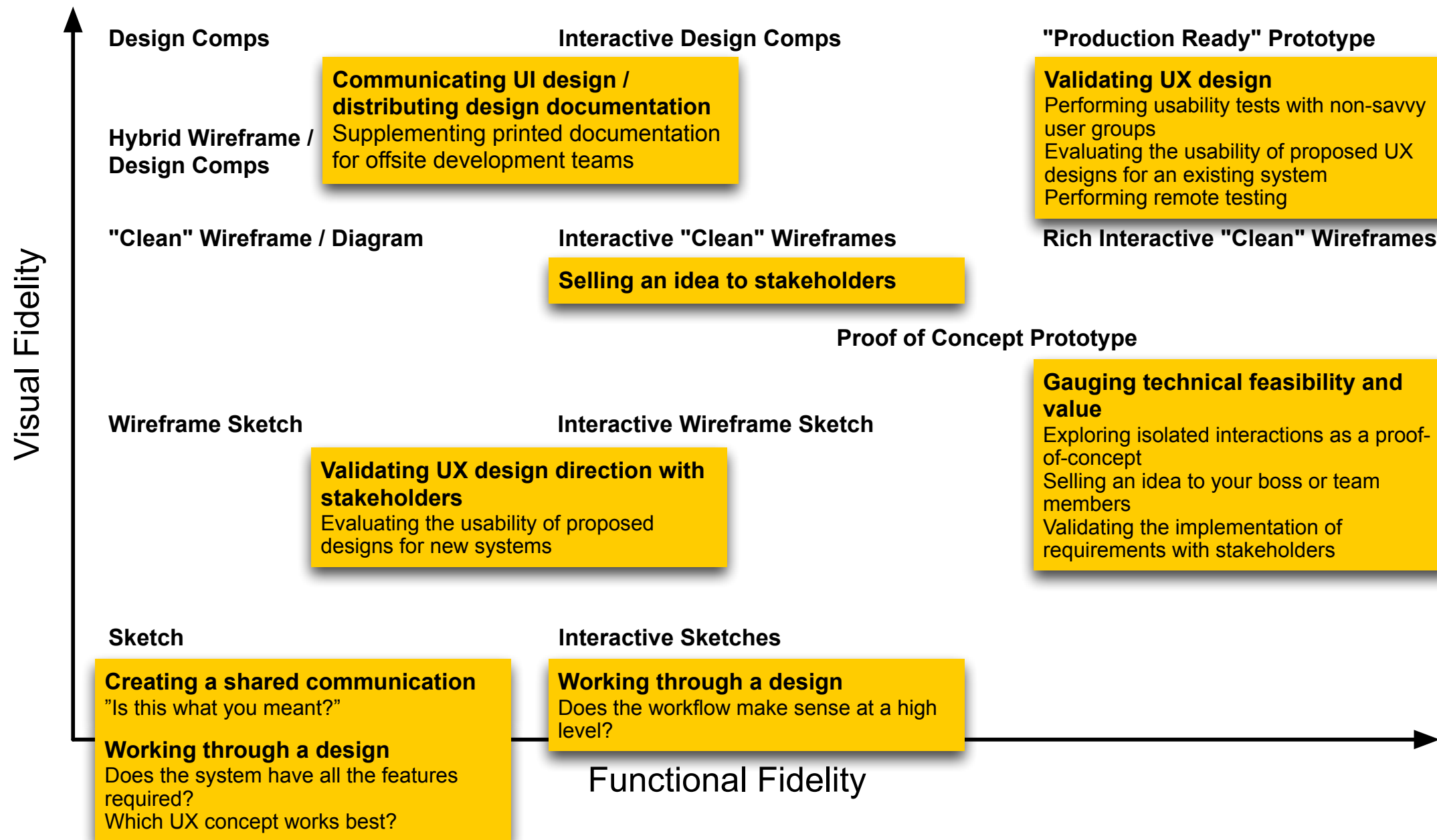➡ Throwaway versus reusable

PROTOTYPING

Speed & Cost

Visual Fidelity — *Slow, expensive* ↑

Design Comps
Photoshop or Illustrator

Interactive Design Comps
Fireworks

"Production Ready" Prototype
HAML + SCSS + JQuery

Hybrid Wireframe / Design Comps
Omnigraffle + Photoshop

"Clean" Wireframe / Diagram
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Proof of Concept Prototype
HTML (960 Grid System + JQuery)

Wireframe Sketch
Pen & Paper
Balsamiq

Interactive Wireframe Sketch
Paper Prototyping
Balsamiq: Export to PDF or HTML

Sketch
Pen & Paper

Interactive Sketches
Paper Prototyping

Fast, cheap → **Functional Fidelity** → **Slow, expensive**

USES OF PROTOTYPES

➡ Shared communication

➡ Working through a design

➡ Selling an idea to stakeholders

➡ Validating design

➡ Gauging technical feasibility and value

USES OF PROTOTYPES

Different tools are suitable for different uses

Visual Fidelity (vertical axis)

Functional Fidelity (horizontal axis)

Design Comps

Interactive Design Comps

"Production Ready" Prototype

Communicating UI design / distributing design documentation
Supplementing printed documentation for offsite development teams

Validating UX design
Performing usability tests with non-savvy user groups
Evaluating the usability of proposed UX designs for an existing system
Performing remote testing

Hybrid Wireframe / Design Comps

"Clean" Wireframe / Diagram

Interactive "Clean" Wireframes

Rich Interactive "Clean" Wireframes

Selling an idea to stakeholders

Proof of Concept Prototype

Gauging technical feasibility and value
Exploring isolated interactions as a proof-of-concept
Selling an idea to your boss or team members
Validating the implementation of requirements with stakeholders

Wireframe Sketch

Interactive Wireframe Sketch

Validating UX design direction with stakeholders
Evaluating the usability of proposed designs for new systems

Sketch

Interactive Sketches

Creating a shared communication
"Is this what you meant?"

Working through a design
Does the workflow make sense at a high level?

Working through a design
Does the system have all the features required?
Which UX concept works best?

SKETCHING

SKETCHINESS

➡ Sketchiness invites critique.

➡ With unfilled "holes", interpretation is necessary, which leads to new ideas.

Opposite: High Fidelity

➡ A High Fidelity UI Mockup says "I'm full of finished, mature ideas".

SKETCHING USES

Sketching is useful...

➡ as research tool

➡ for working through a concept

➡ for working through a design (wireframe sketch)

➡ as shared communication

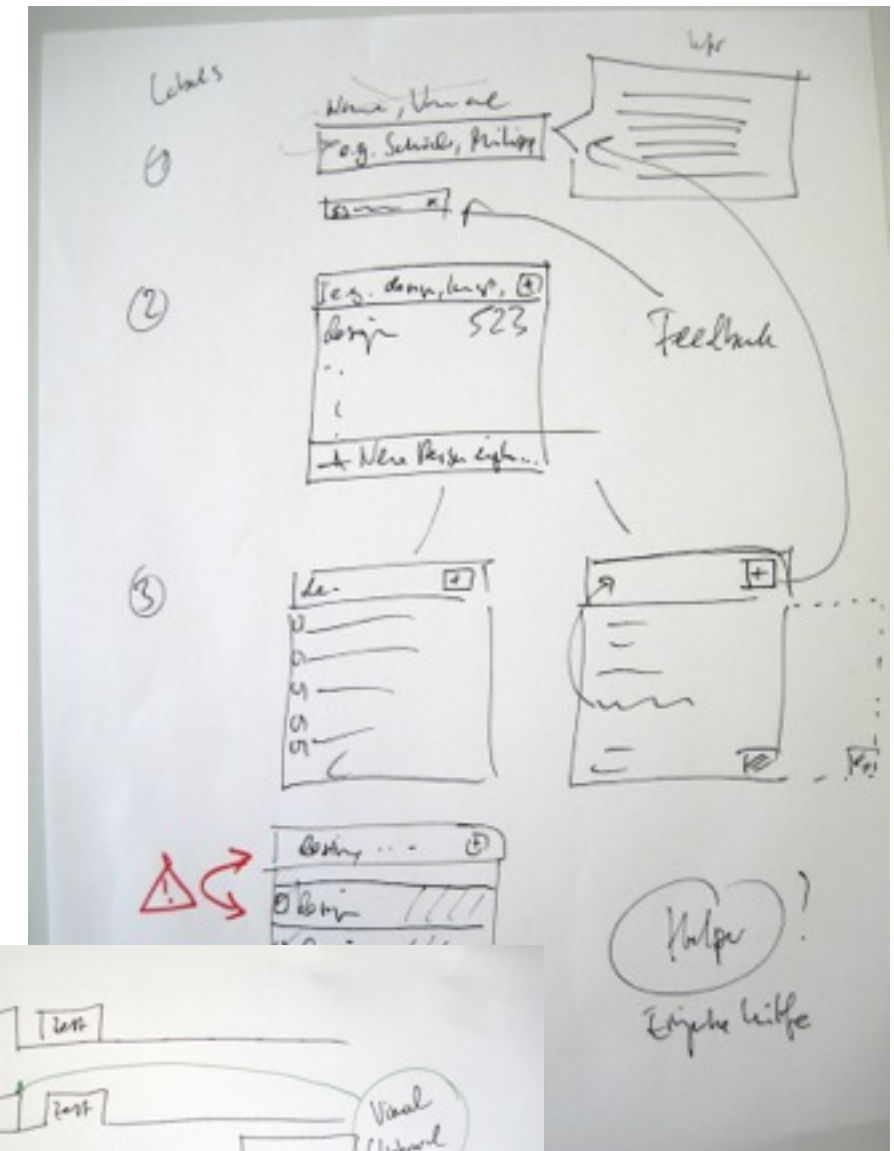➡ for validating UX design direction

SKETCHING AS RESEARCH TOOL
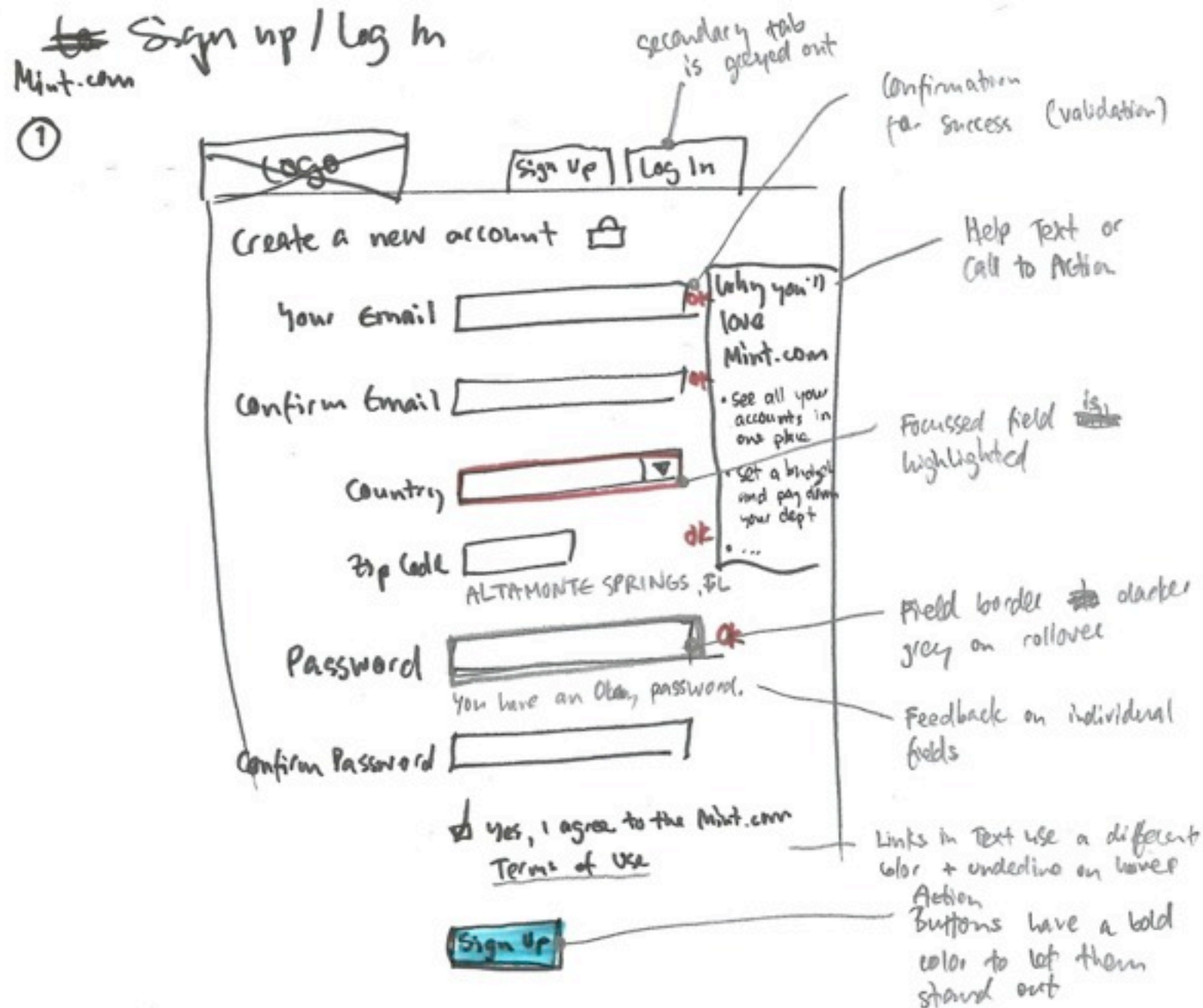
SKETCHING FOR
WORKING THROUGH A CONCEPT
—
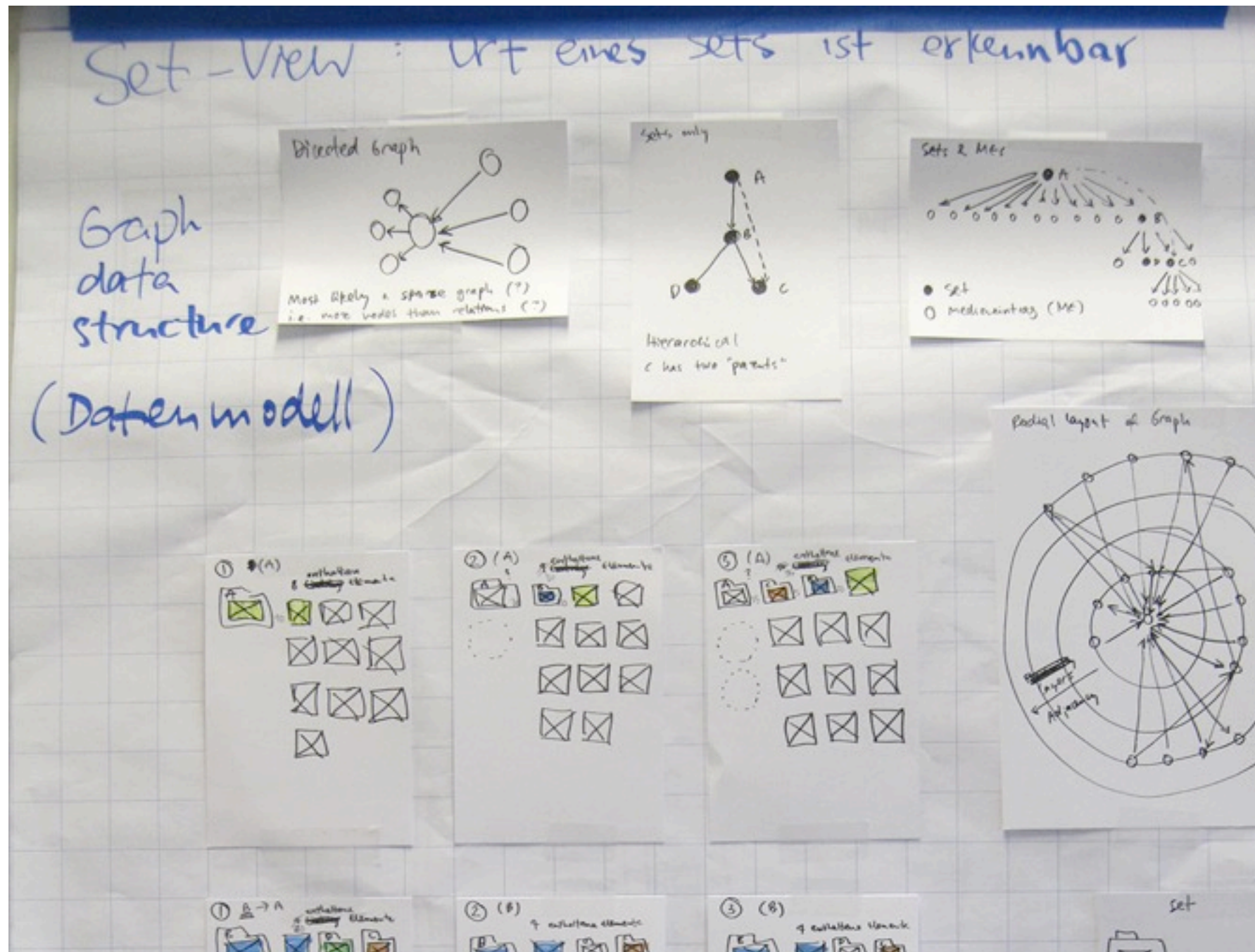
SKETCHING WIREFRAMES FOR WORKING THROUGH A DESIGN

SKETCHING AS SHARED COMMUNICATION

SKETCHES BY STEFANO VANOTTI

SKETCHING FOR VALIDATING UX DESIGN DIRECTION
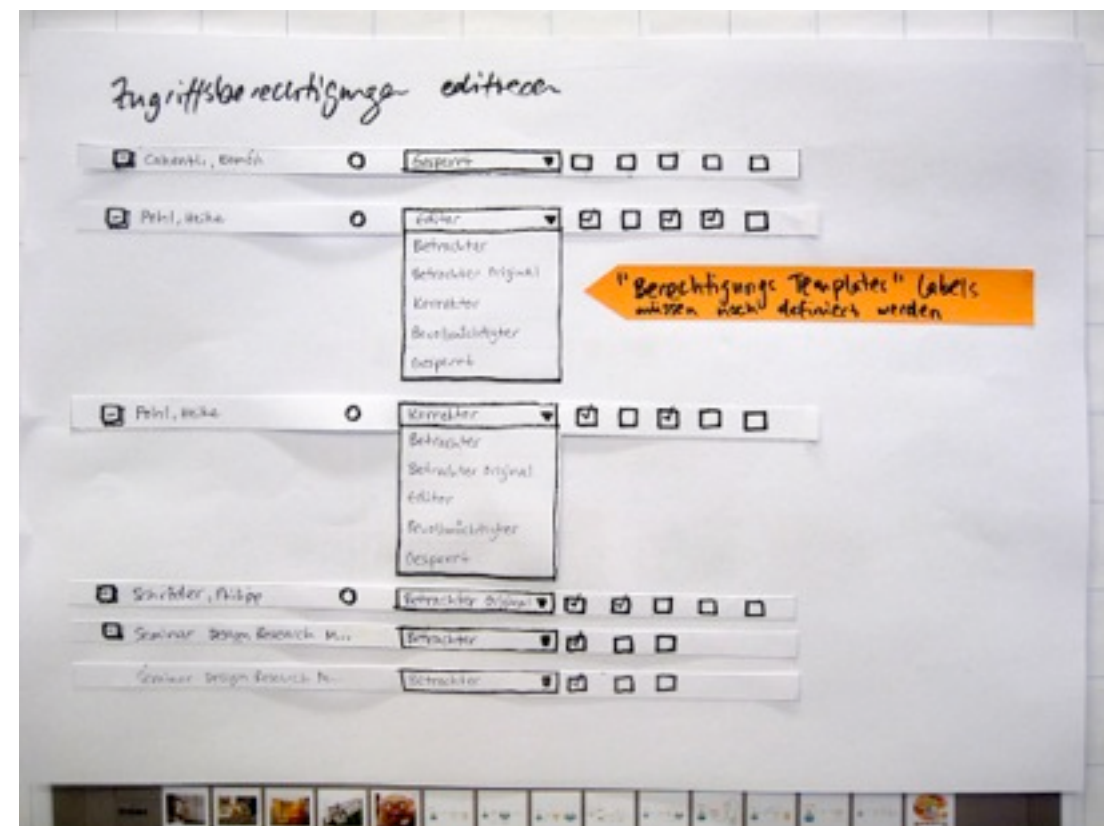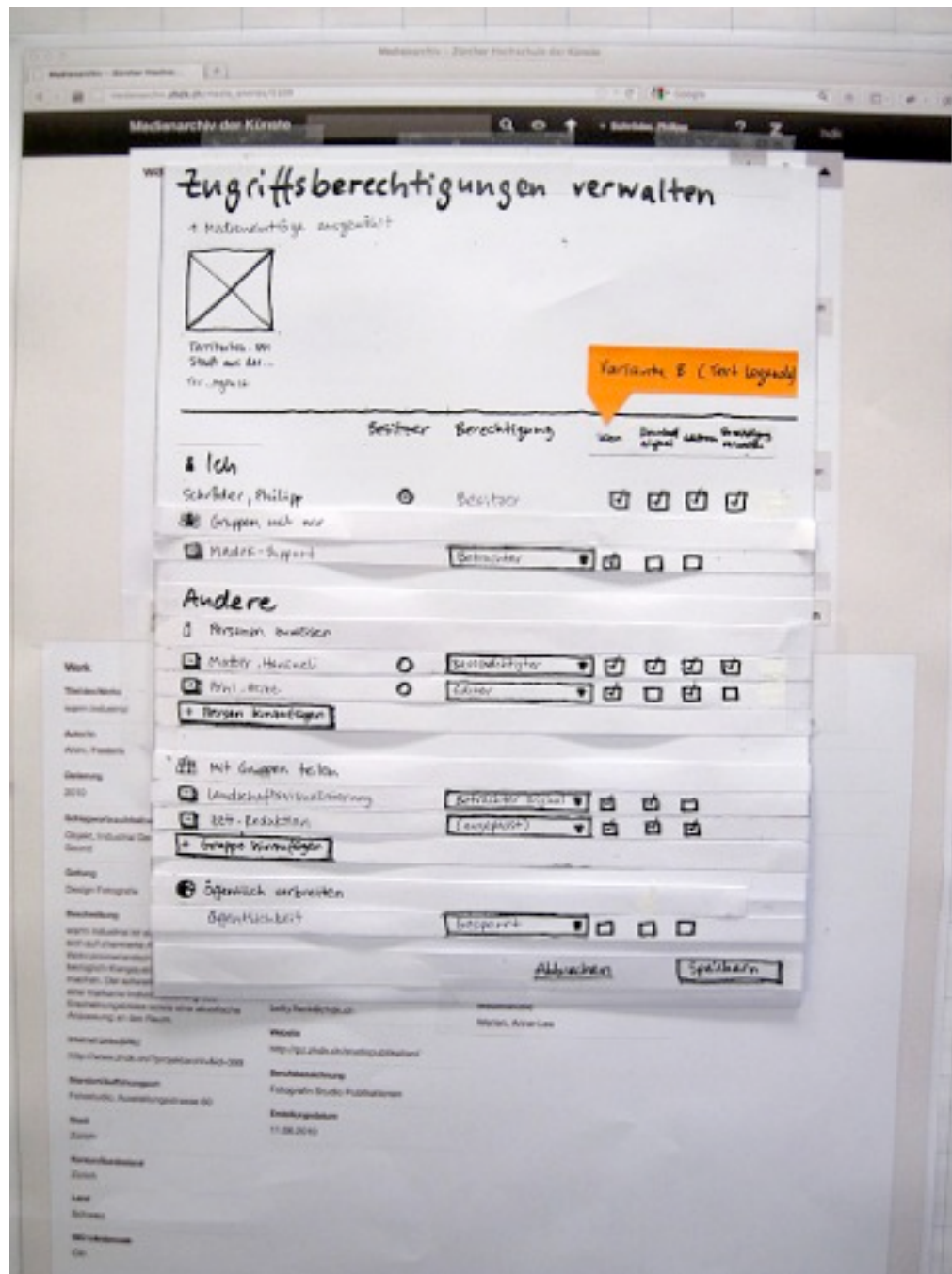
"CLEAN" WIREFRAME
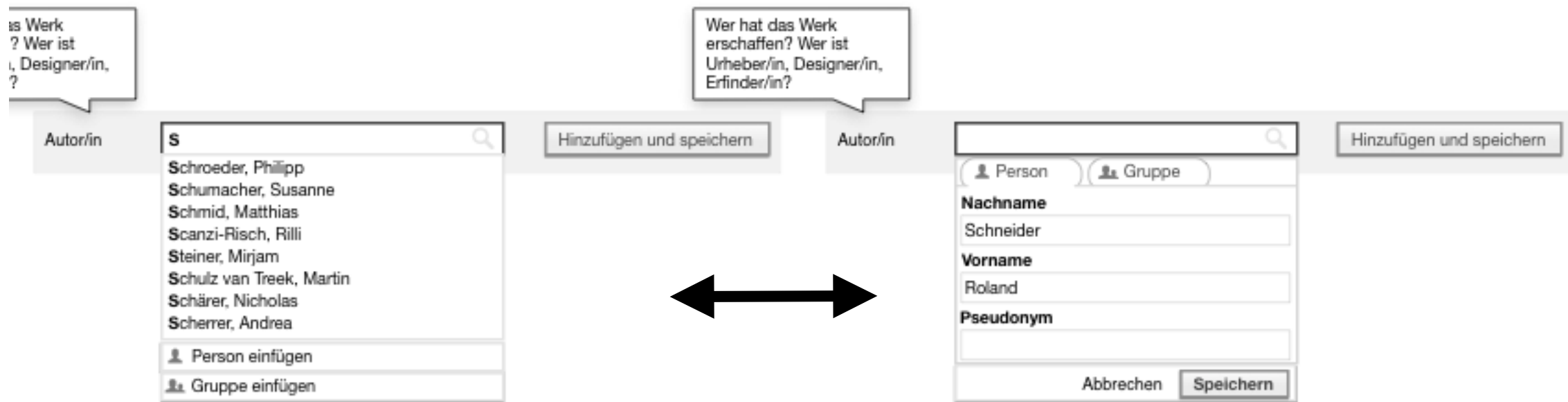
Both widgets need to be of the same height...

DIAGRAMS

INTERACTIVE "CLEAN" WIREFRAME
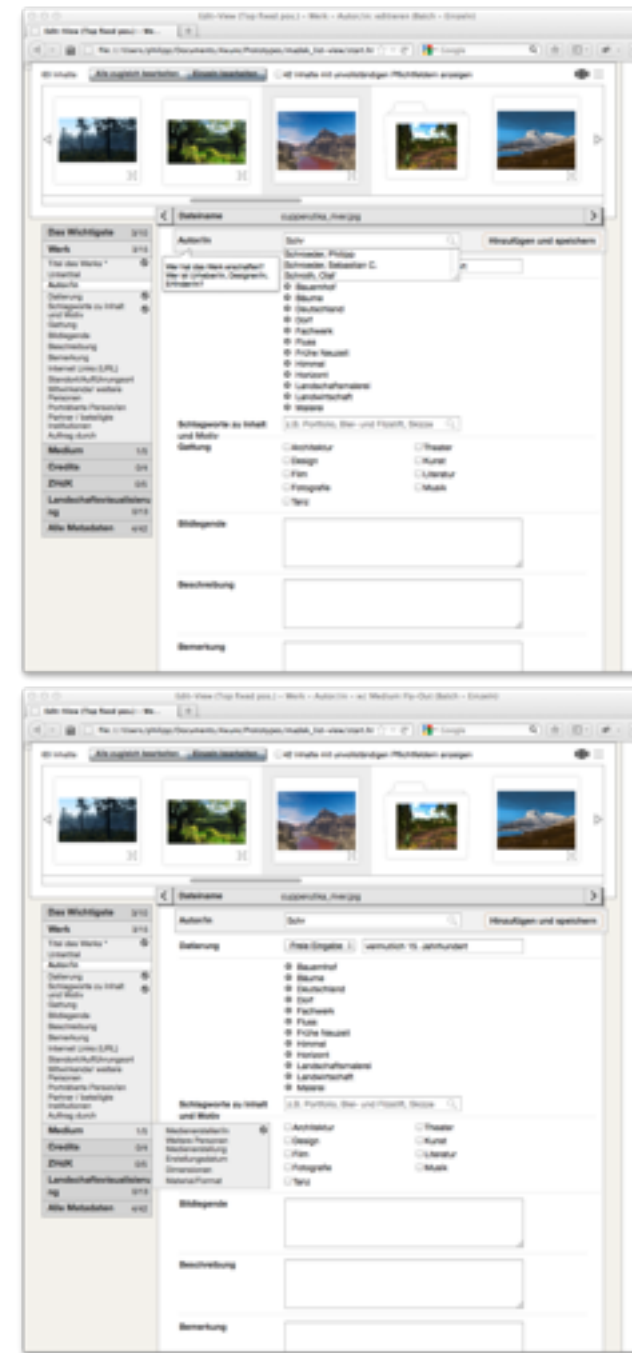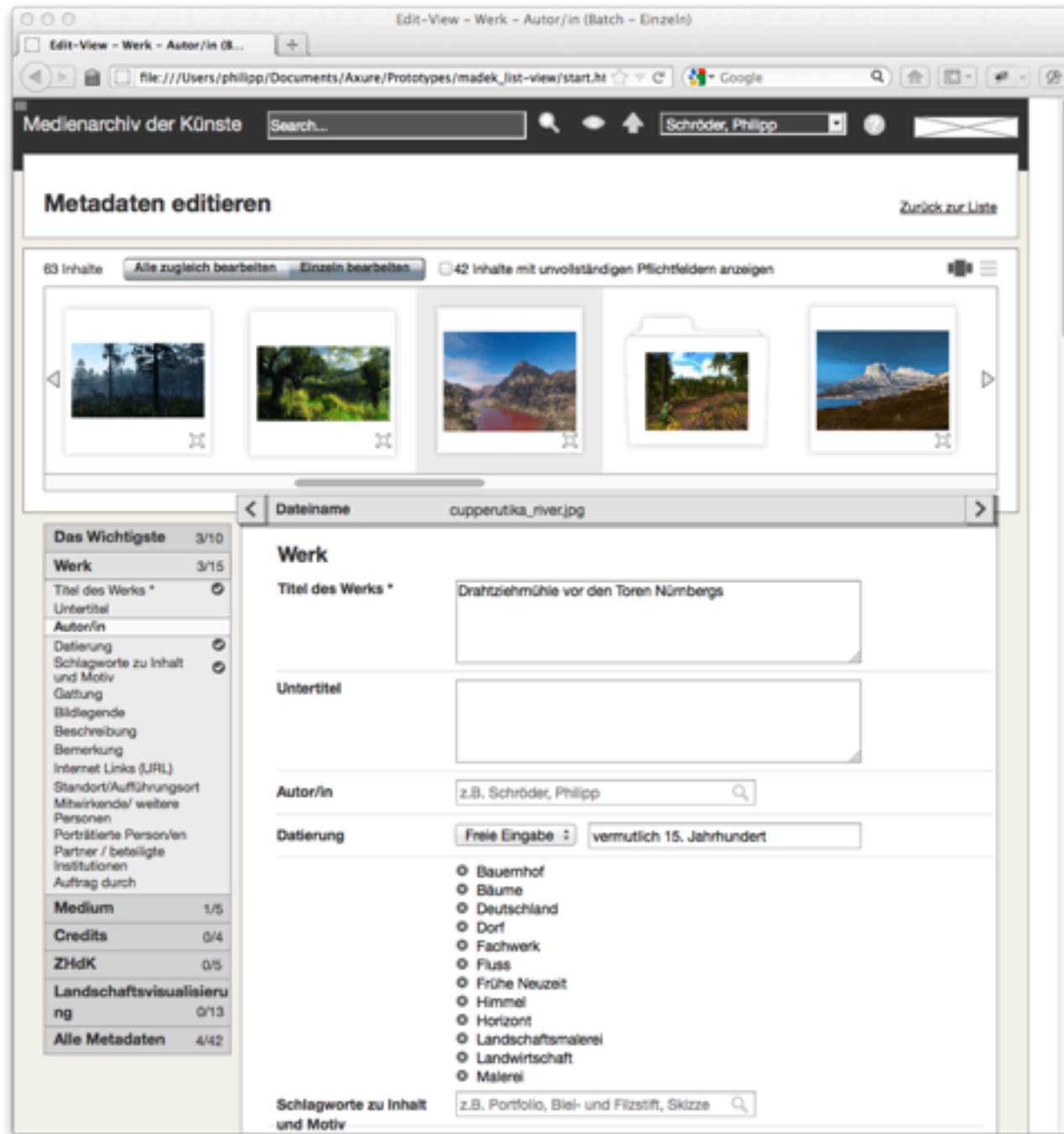
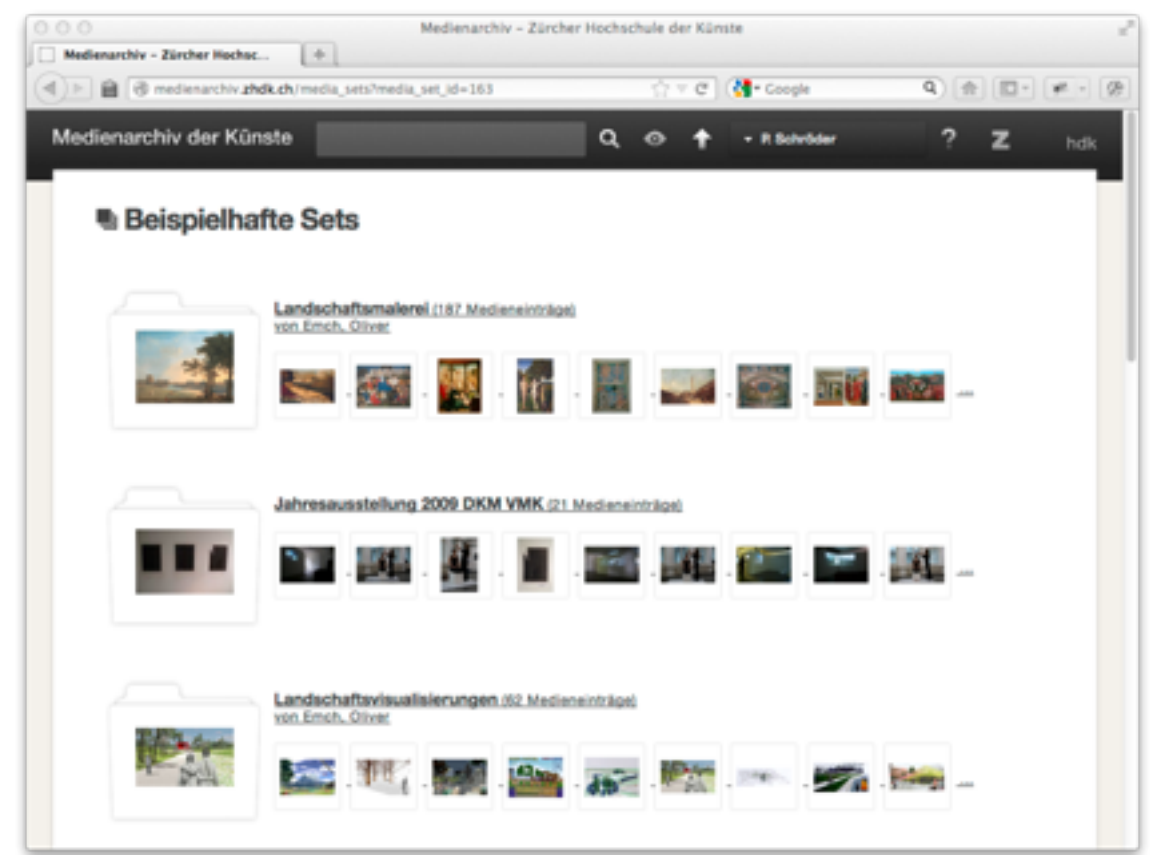# HYBRID WIREFRAME / DESIGN COMP
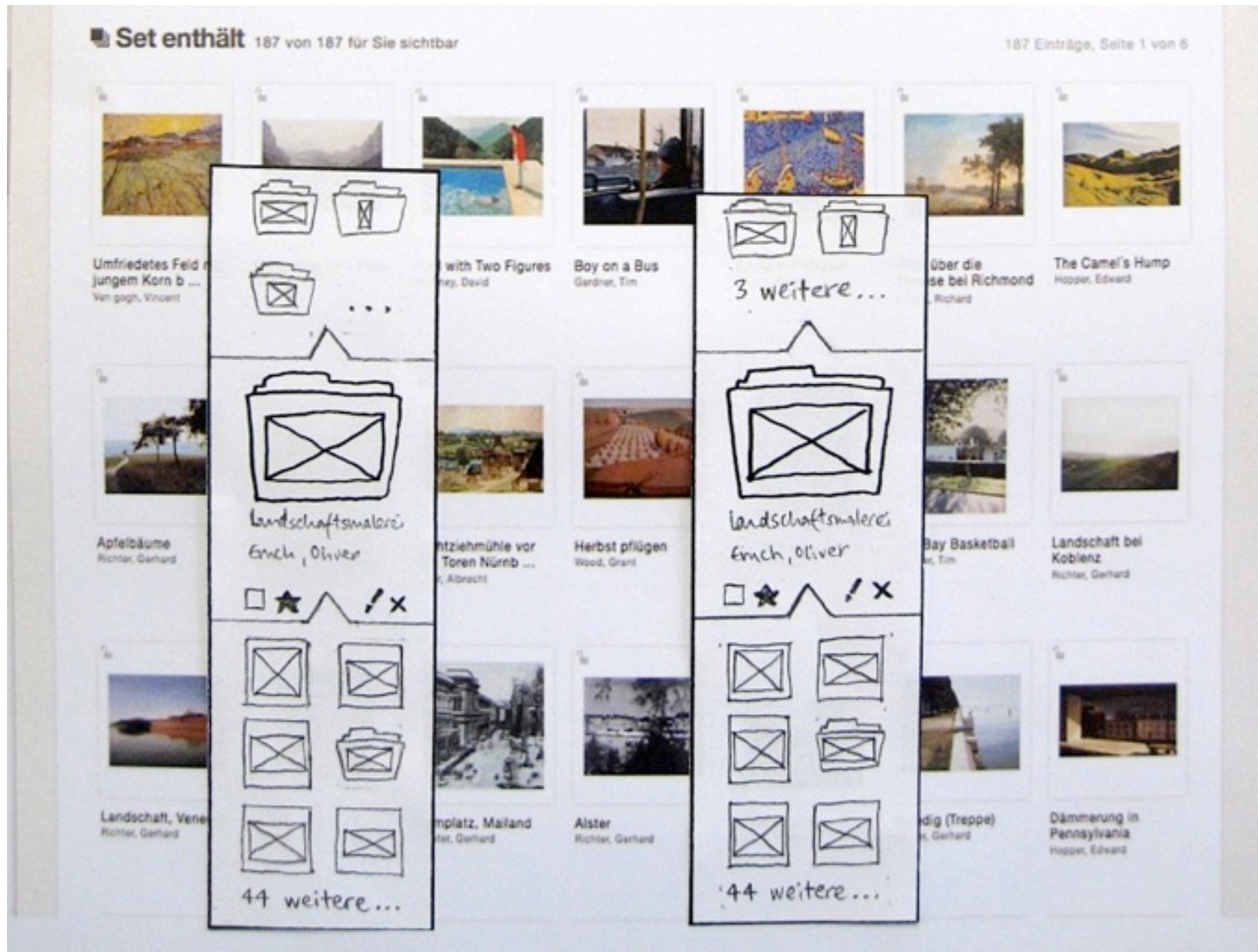
HIGH FIDELITY PROTOTYPES

DESIGN COMP
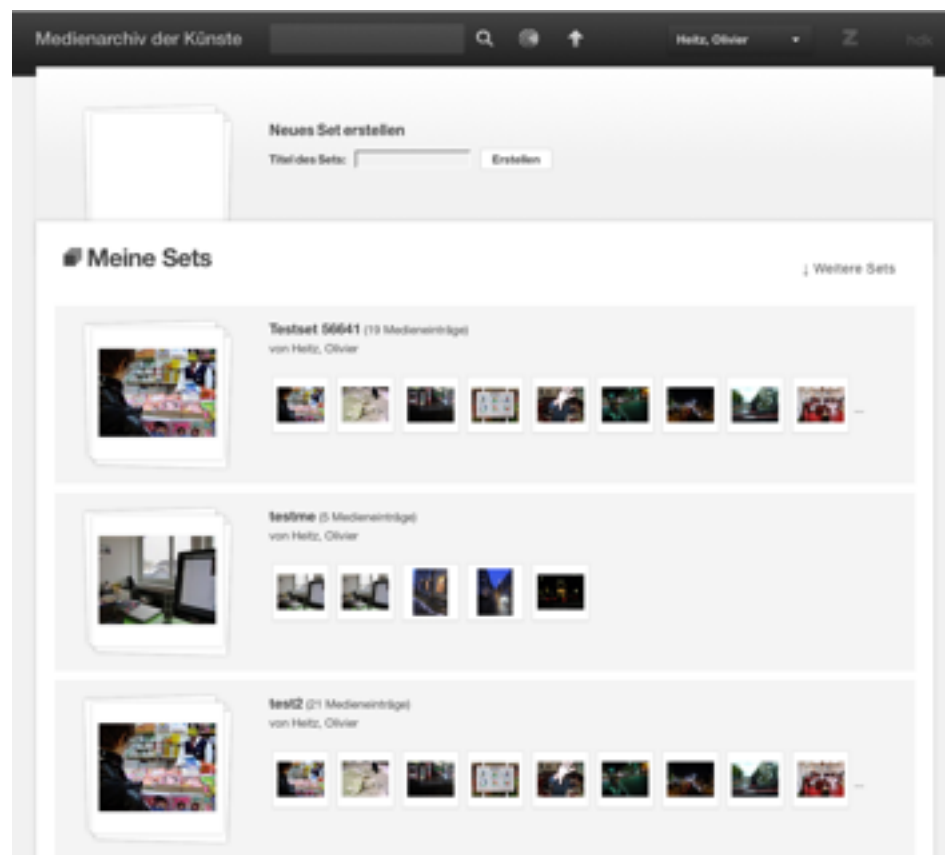
DESIGN COMP BY OLIVIER HEITZ

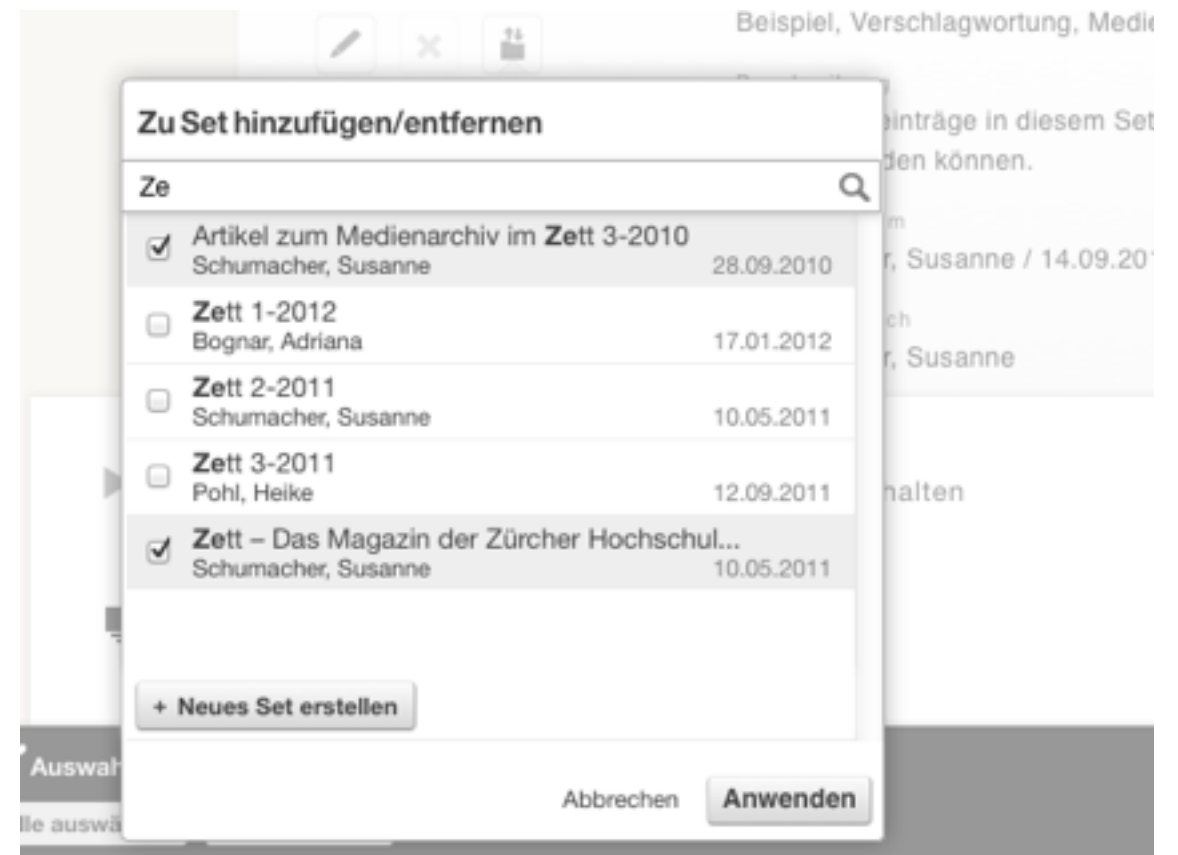## WORKING SOFTWARE

LIVE SITE

CROSS-FUNCTIONAL PAIRING:
INTERACTION DESIGNER + FRONTEND DEVELOPER

SKETCH

ANNOTATED SKETCH OF A WIDGET

WORKING SOFTWARE

SOFTWARE INCREMENT ON TESTING SERVER

FROM SKETCH TO WORKING PROTOTYPE

Why is this cool?

➡ The sketch showed just enough intent as a basis for estimating effort and as a starting point for implementation.

➡ No time was wasted for a detailed written specification (which can be misinterpretated).

➡ We both learned from each other during pairing and got a deeper understanding of the feature.

➡ The prototype was available for testing on the test server "immediately", allowing feedback from real users quickly.

WHEN TO CREATE *HIGH FIDELITY* PROTOTYPES?

Since they are relatively time-intensive / expensive, create HiFi prototypes only if necessary:

➡ If your audience is the client, users or an external development team

  ➡ Selling an idea

  ➡ Usability testing

  ➡ Detailed design specifications

TAKE AWAYS
FOR DEVELOPERS

➡ Building software is a creative process.

➡ Designers have good tools for creativity.

➡ Adapt & learn!

TAKE AWAYS
FOR PRODUCT MANAGERS

Recognize and accept the creative process of software development.

➡ Yes, it's messy.

➡ Yes, there is a "looping circularity".
It's how we learn and improve.

➡ Take work-in-progress for what it is.

TAKE AWAYS
FOR DESIGNERS (1)

➡ Keep focused on value - the actual user experience

➡ Remove non valuable activities - e.g. excessive documentation

➡ Be pragmatic - use whatever gets the job done

➡ Visualize and share your work - invite valuable critique

TAKE AWAYS
FOR DESIGNERS (2)

➡ Get feedback often -

   ➡ catch glaring mistakes early,

   ➡ foster shared understanding and

   ➡ collective ownership

➡ Every encounter is an opportunity to learn

➡ Every encounter is an opportunity to hone your skill in persuasion :-)

DRAWBACKS / LIMITATIONS

If no design framework was established up-front, you *will* have late iterations for consistency.

TEAM THANKS

➡ Rails team @ ZHdK

➡ Team π @ Liip

(P)
MERCI!

(P)HILIPP SCHRÖDER
TWITTER.COM/PIPS1

PS@VISUALPUN.CH

FURTHER READING & RESOURCES

- Bill Buxton (2007): *Sketching User Experiences* - Getting the design right and the right design. San Francisco: Morgan Kaufmann Publishers.

- Todd Zaki Warfel (2009): *Prototyping* - A Practitioner's Guide, New York: Rosenfeld Media

- Fred Beecher (2009): *Integrating Prototyping Into Your Design Process* - Using appropriate fidelity for the situation, http://www.boxesandarrows.com/view/integrating, last accessed 2012-09-05

- Jakub Linowski: *Interactive Sketching Notation*, http://www.linowski.ca/sketching, last accessed 2012-09-05

RESOURCES MENTIONED IN QUESTIONS & ANSWERS

- Kim Goodwin (2009): Designing for the Digital Age: How to Create Human-Centered Products and Services, Indianapolis: Wiley.

- Jeff Gothelf (2011): Lean UX: Getting Out Of The Deliverables Business. http://uxdesign.smashingmagazine.com/2011/03/07/lean-ux-getting-out-of-the-deliverables-business/, last accessed on 2012-09-07