Designworkshop 2 / Designforschung

Industrial Design meets Human-Computer-Interaction

Mag.des.ind. Veronika Ritzer, LMU

Dipl. Des. Hannes Gumpp, TUM

SS 2017

München, 24. April 2017

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Industrial Design meets Human-Computer-Interaction

Kick off.

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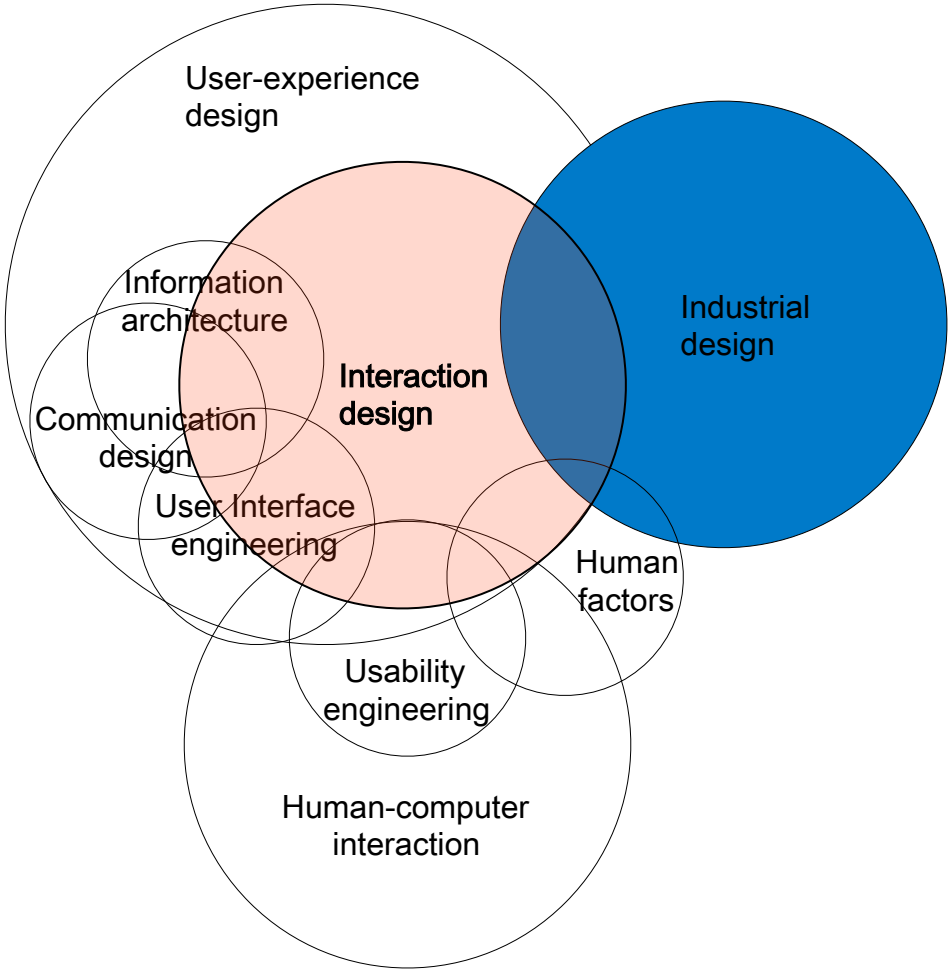
What are we doing here?



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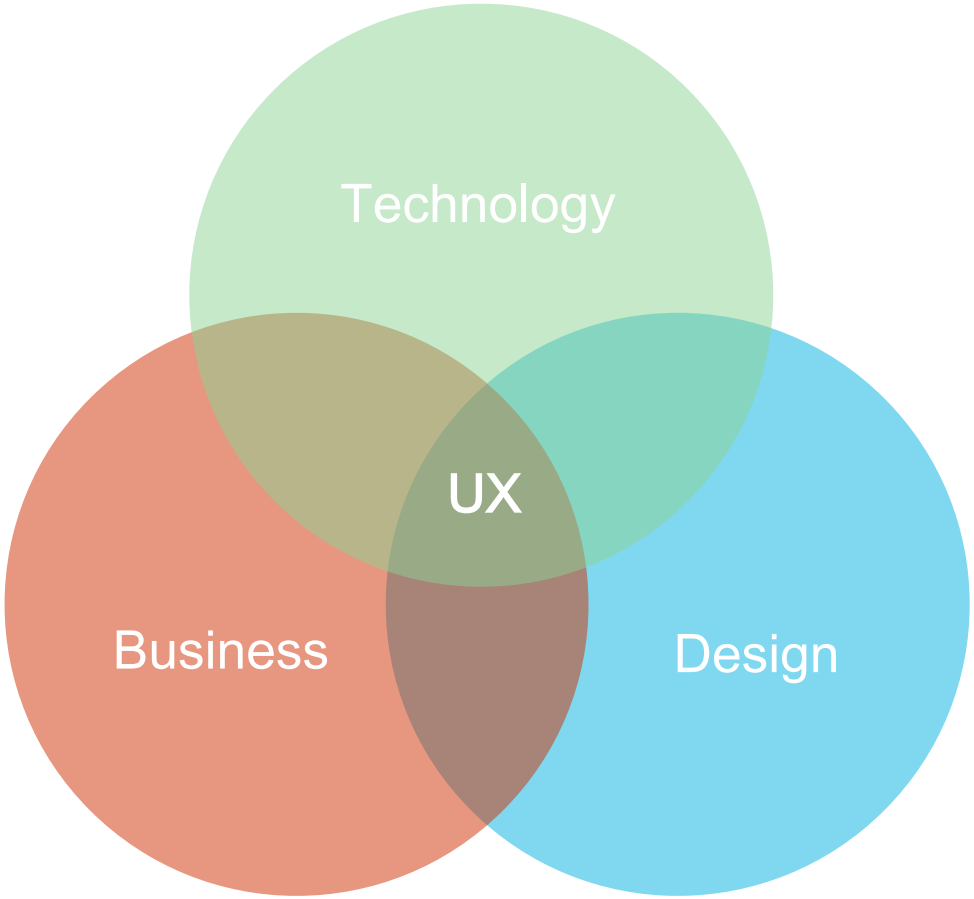
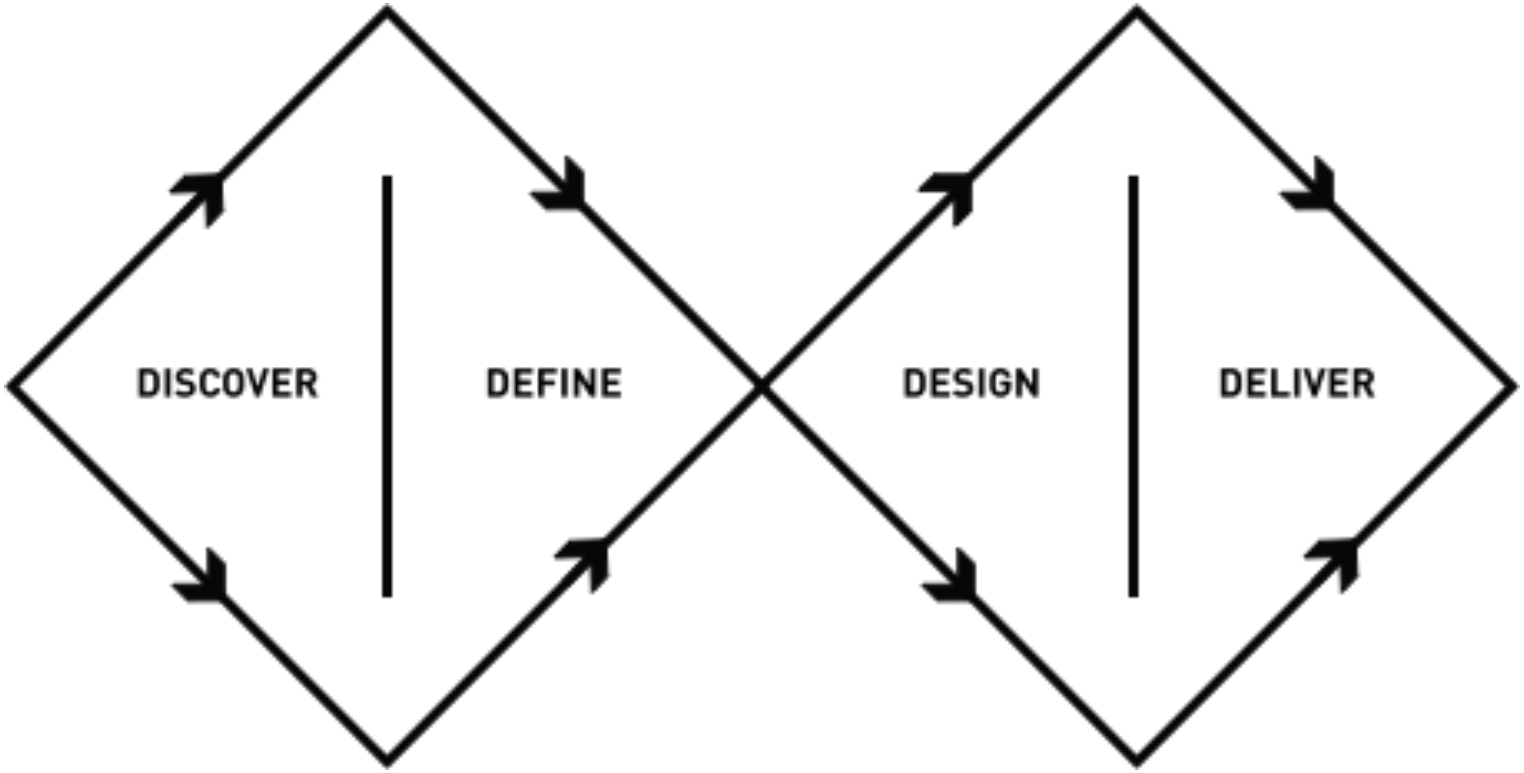


Double Diamond



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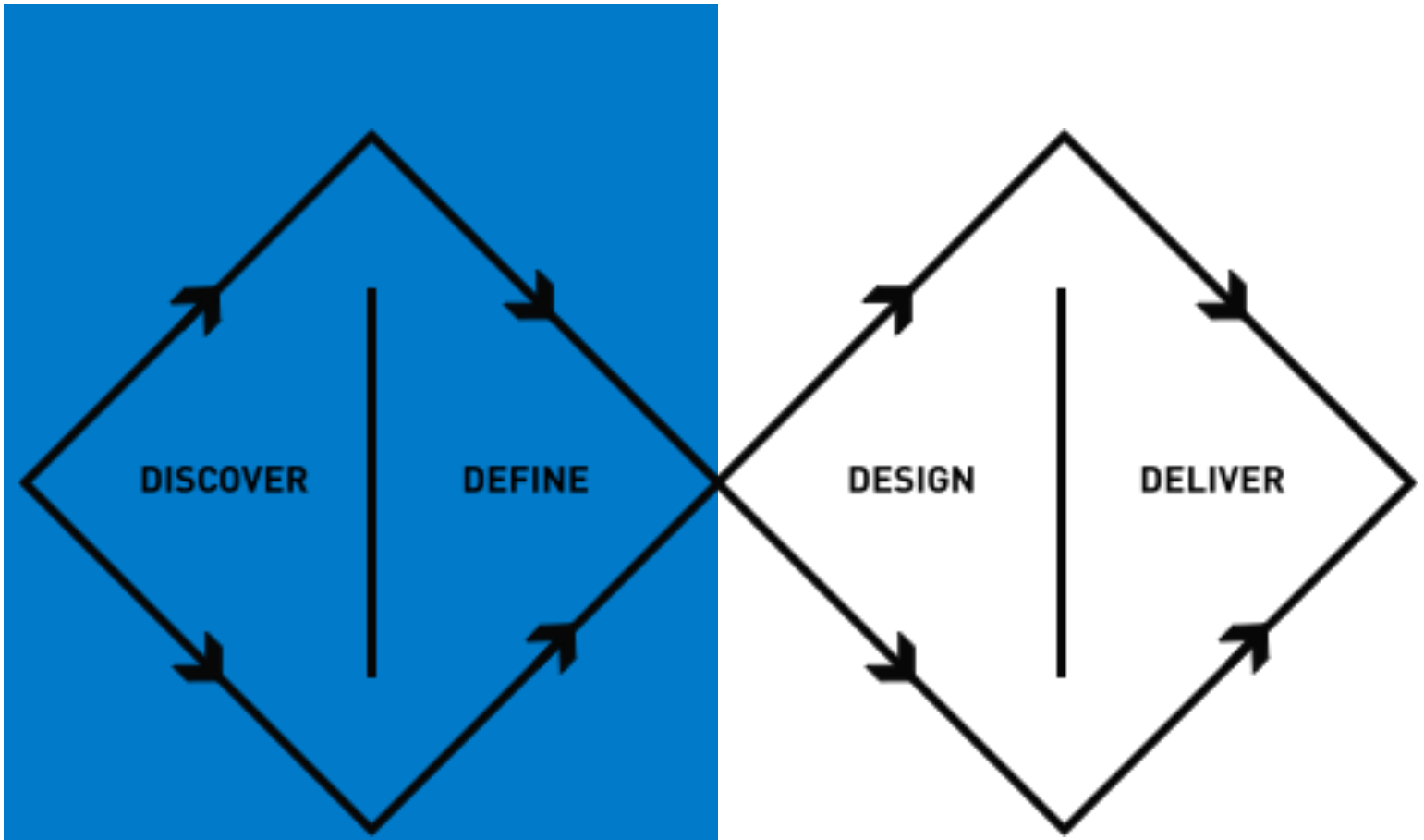

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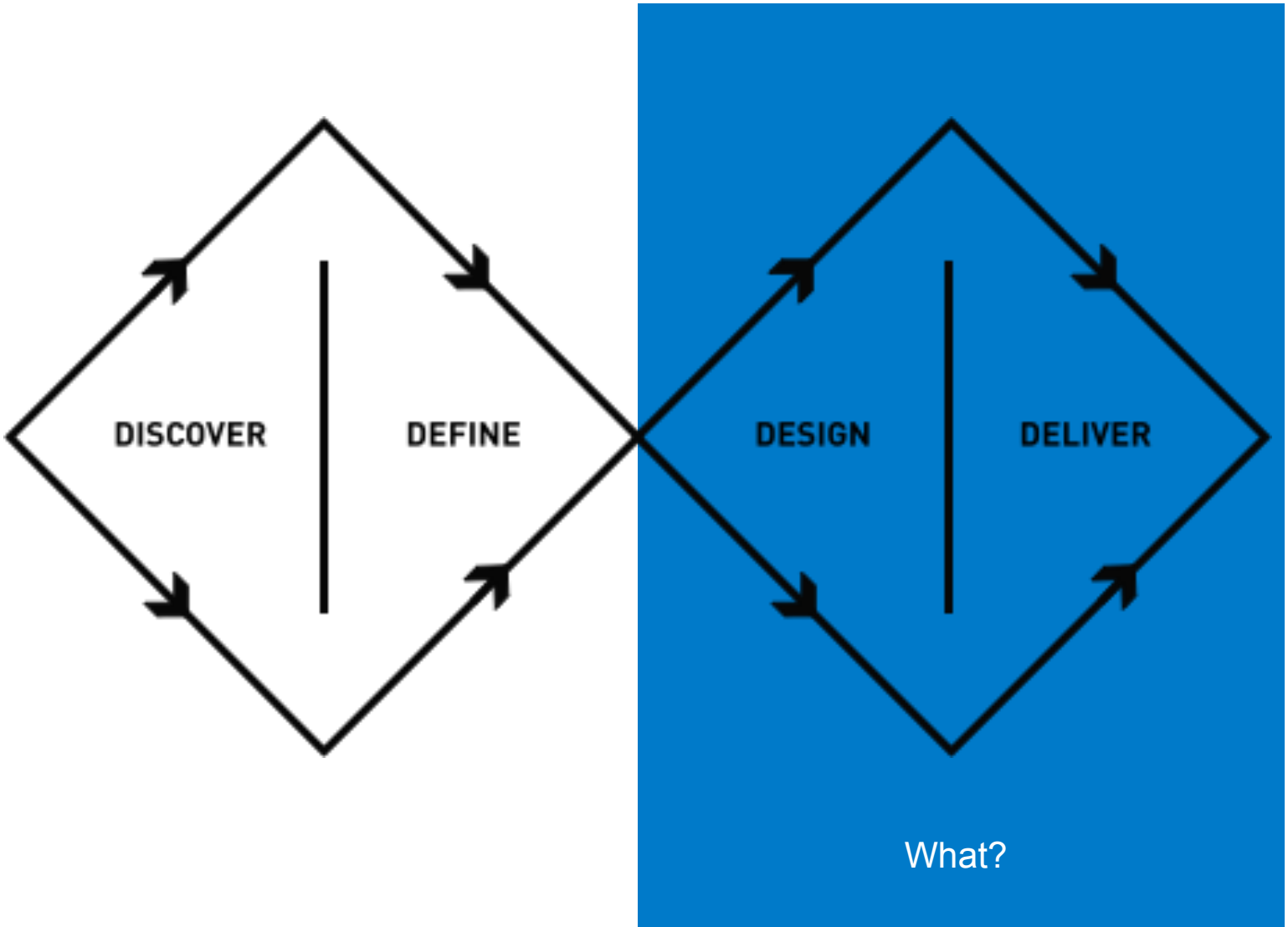


Designing for a context

Different usage contexts, user types and usage frequency will require dedicated solutions.

BMW DTM Racing Cockpit

BMW i8

Designing for a context

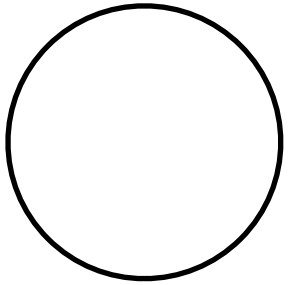
Different usage contexts, user types and usage frequency will require dedicated solutions.

For the Designer:	Exploration Visualisation Feasibly Inspiration Collaboration
For the End User:	Effectiveness / Usefulness A change of viewpoint Usability Desirability
For the Producer:	Conviction Specification Benchmarking

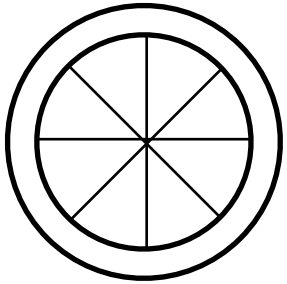
Designing for user needs

Prototyping

Fidelity vs. Resolution



low resolution
low fidelity



high resolution
low fidelity

high resolution
high fidelity

Prototyping

Fidelity vs. Resolution

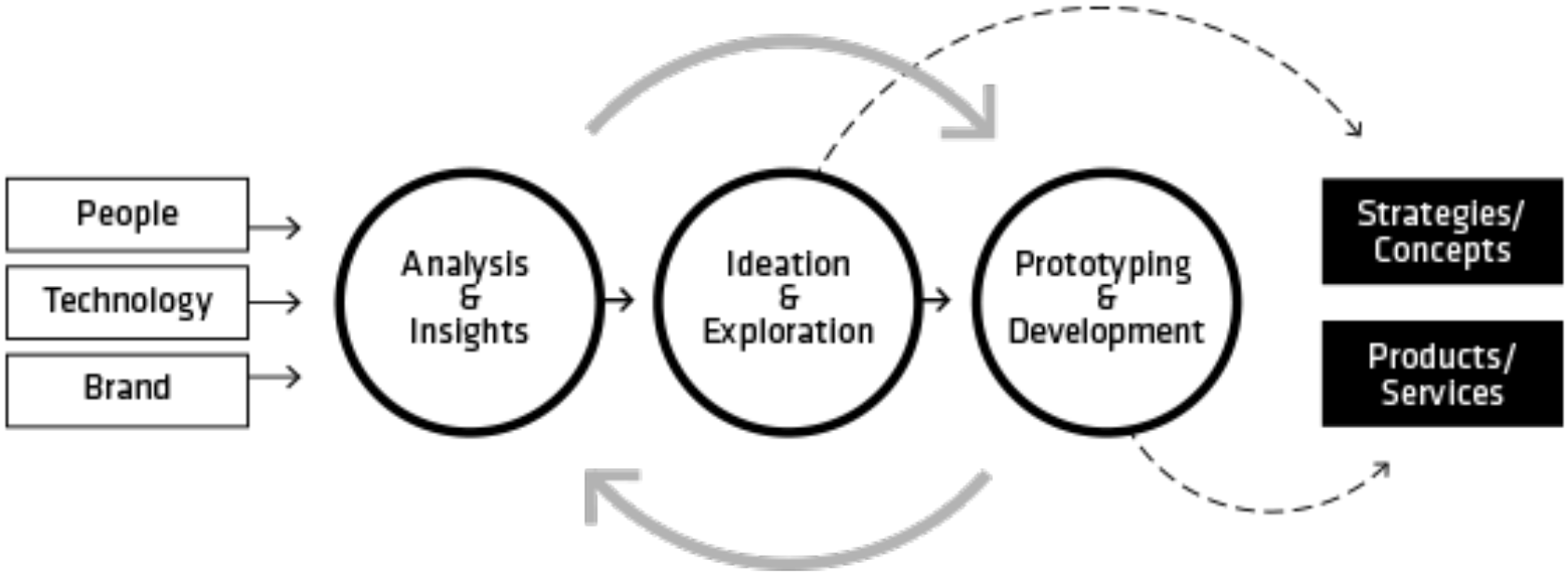
Low Fidelity	High Fidelity
Open Discussion	Sharp Opinions
Prompting Required	Self Explanatory
Quick and Dirty	Deliberate and Refined
Early Validation	Concrete Ideas

Prototyping

Fidelity vs. Resolution

Low Fidelity	High Fidelity
Less Details	More Details
Focus on core interactions	Focus on the whole
Quick and Dirty	Deliberate and Refined
Early Validation	Concrete Ideas

An iterative design process



http://www.ixds.com/company/our_process.png

Overview: The Course

Approach

Tackling a real world interaction and industrial design challenge by:

- Applying an iterative design process in all phases from research to final prototype
- Working in cross disciplinary teams

Goal & Deliverables

A **final presentation** that **includes**

- **milestone deliverables for each phase**
- **a self-explanatory and functioning prototype***
- **a video showing your prototype in action**
- **1-2 high resolution images of final prototype**
- **TUM ID project card: PDF + Folder of packaged InDesign file incl. Links**

at the end of the semester.

*transportable, maximum size of a standard desk

Workshop Theme SS 2017

Soft Machines

Workshop Theme SS 2017

Workshop Theme SS 2017

Soft Machines

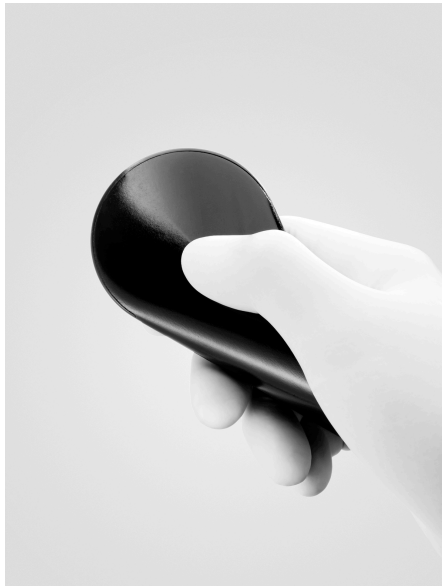
All machines and technical devices we encounter in our everyday life – be it the smartphone, a tablet, a car or the light at your bicycle – seem to consist of hard materials. Without exception and regardless of their environment and usage context. It`s the language of objects we learned.
And up to now it`s rarely questioned in terms of design. Nevertheless it has a decisive influence on our relation to those objects, how we interact with them and – how we perceive technology.
What happens, if we leave this normal state behind? If we re-think and re-design those machines and devices as something softer? What does this new formal and haptic quality mean for the concept of interaction?
Will we use a product differently? Or will we turn up with totally new products?

Workshop Theme SS 2017

Unchallenged semantics of technology

New interactions modalities

Form changing interaction



http://www.epfl-ecal-lab.ch/work/lazy-bytes/

History: BMW Gina – car concept, 2008

https://en.wikipedia.org/wiki/BMW_GINA

Festo Bionic Handling Assistant

https://www.festo.com/group/de/cms/10241.htm

Pneubotics

pneubotics.com

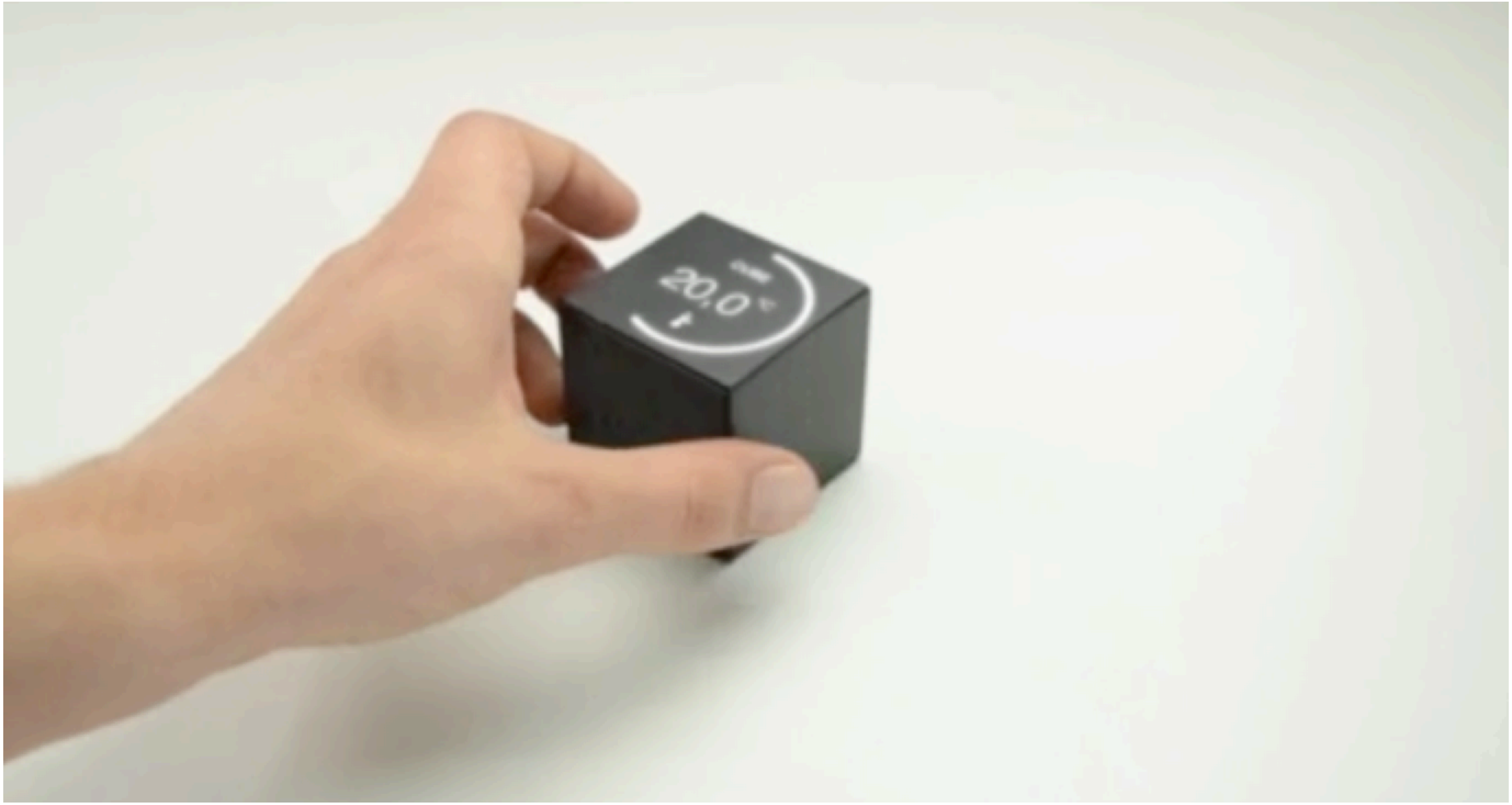
Reactive Clothing – Caress of Gaze

http://behnazfarahi.com/caress-of-the-gaze/

Google Soli

https://atap.google.com/soli/

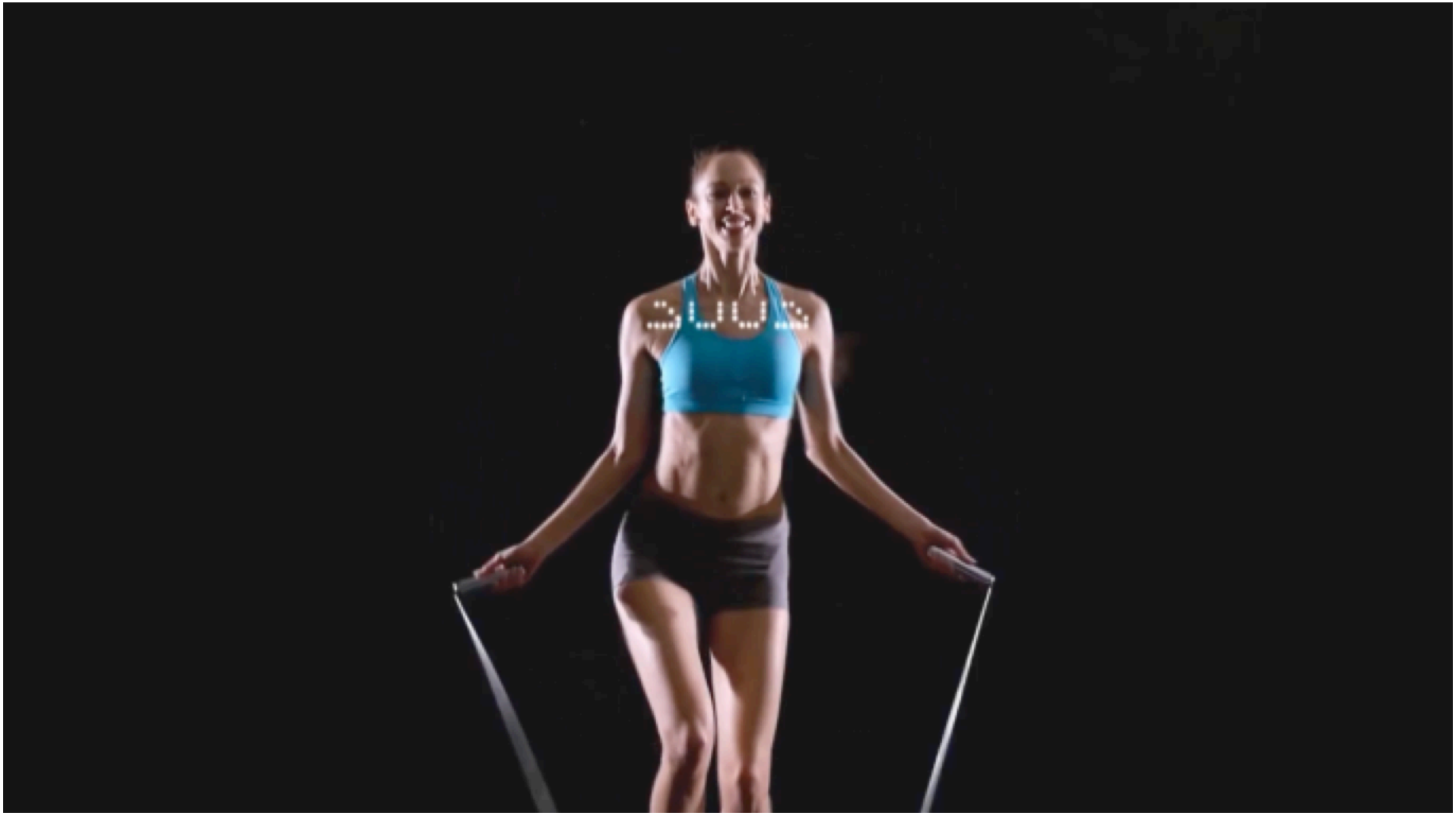
Family of the Heart – Remote Control



http://www.familyofthearts.com

Ferrofluid Display

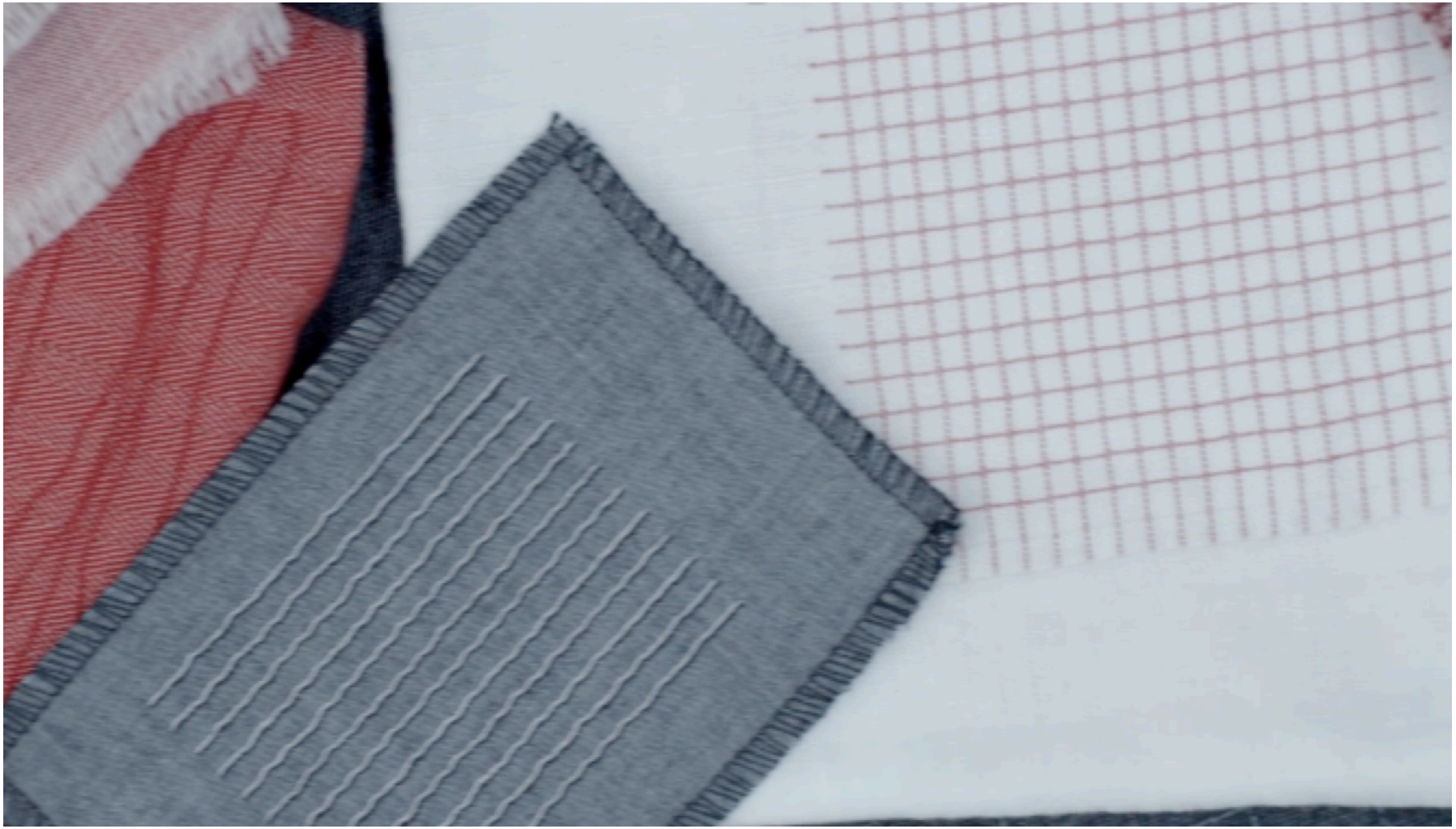
Dynamic Display: Smart Rope



Membrane Interface

www.bit.ly/1jweAx9

Google and Levis: Project Jaquard



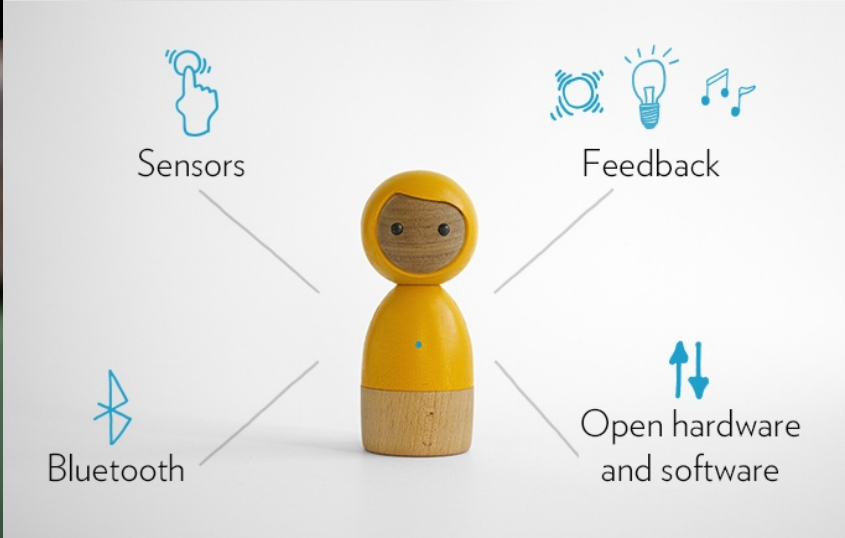
http://www.youtube.com/watch?v=qObSFfdfe7I

Daniel Rozin - Pom Pom Mirror

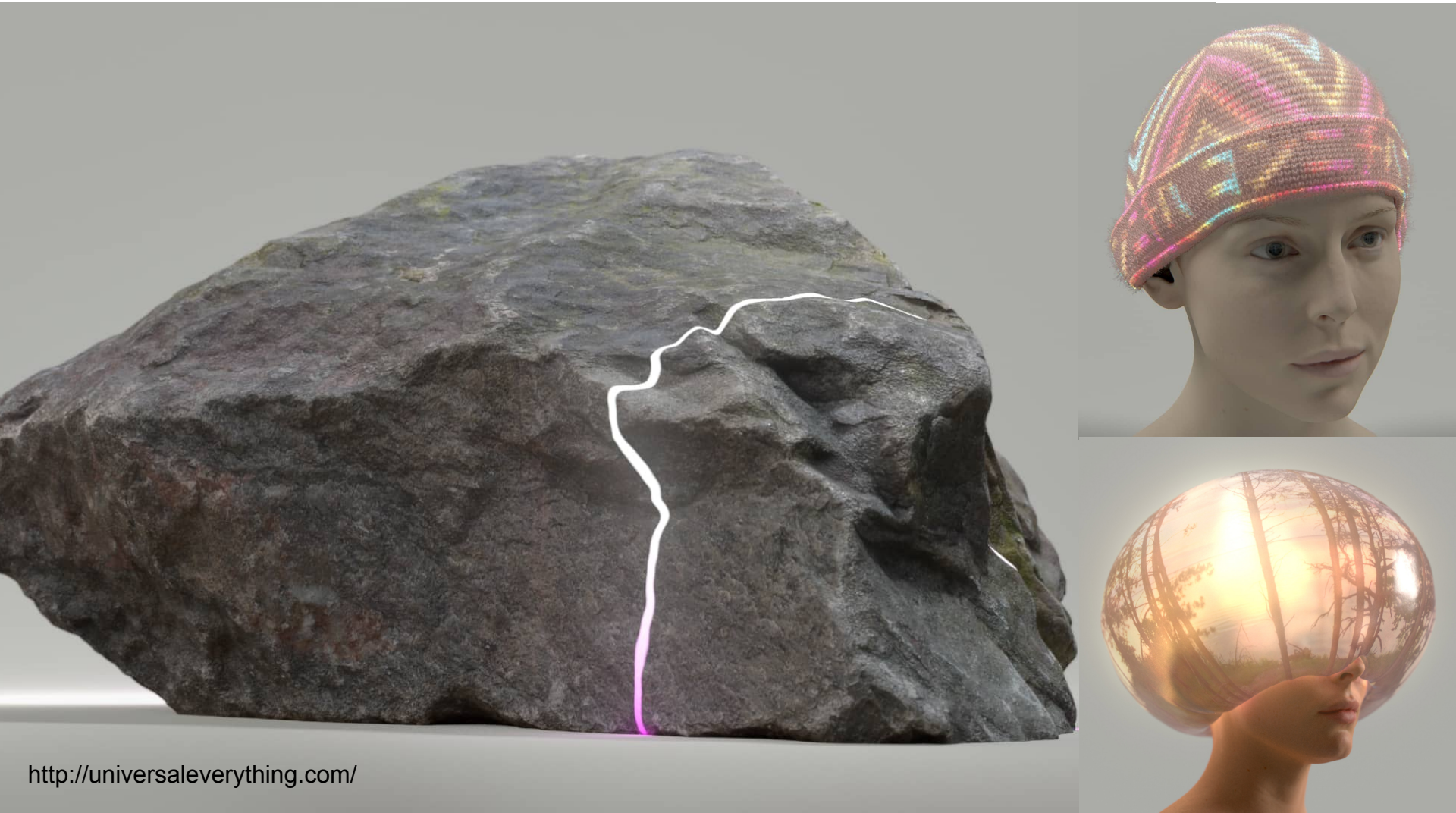
https://vimeo.com/128375543

Avakai – Smart Toy

https://vaikai.com/



Universal Everything – Displays of the Future



http://universaleverything.com/

Team Lab – Floating Flower Garden

https://www.teamlab.art/w/ffgarden

Revolights: Eclipse

https://revolights.com/pages/revolights

Schedule of the semester

24.04.2017 Kick off

RESEARCH PHASE
08.05.2017 Review Research, Report Make Munich (6./7.May make-munich.de)
15.05.2017 Deliverable 1: Research, Problem Framing

CONCEPT PHASE
22.05.2017 Review Concept
29.05.2017 Deliverable 2: Presentation Concept, Plan Prototyping

LOW-FIDELITY PROTOTYPING
12.06.2017 First Draft Prototype, User Testing Plan
19.06.2017 Presentation Results User Testing & Concept Iteration
26.06.2017 Deliverable 3: Low-Fidelity Prototype based on User Testing

HIGH-FIDELITY PROTOTYPING
03.07.2017 Review High-Fidelity Prototype
10.07.2017 Review High-Fidelity Prototype
17.07.2017 Review High-Fidelity Prototype, Presentation Draft
24.07.2017 Deliverable 4: Final Presentation

Your grades: 1 individual + 4 per team

- INDIVIDUAL GRADE: Participation in meetings

- PER TEAM: 4 deliverables: in time, complete

- PER TEAM: Conceptual work (deliverables 1,2)
  - Quality of research
  - Is your concept solving the problem you framed?
  - How innovative is your concept?

- PER TEAM: Prototyping (deliverables 3,4)
  - Does it make the idea experienceable?
  - Does it work? Is it self-explanatory?
  - How well was user feedback carried out and incorporated?

- PER TEAM: Presentation
  - How crisp could you bring your work across?
  - Presentation skills, material

Grading Scheme

95 – 100	70 – 73
1.0	**3.3**
90 – 94	67 – 79
1.3	**3.7**
87 – 89	64 – 66
1.7	**4.0**
84 – 86	60 – 63
2.0	**4.3**
80 – 83	0 – 59
2.3	**4.7**
77 – 79	
2.7	
74 – 76	
3.0	

Attendance

Your attendance is mandatory:

- More than 1 time absence: writing a paper (4-5 pages, template provided), more than 2 times: failed
- A doctor´s attest for every absence

Working in teams

Working in interdisciplinary teams is part of the challenge and approach of this course - as this is how you are going to work later on in the real world!

You decide about the individual constellation of your team – according to your personal experience and training.

Next step:

http://make-munich.de

Webrecherche

Techblogs:
engadget.com
ted.com

Zugriff auf Zeitschriften:
http://docweb.lrz-muenchen.de/

Literaturrecherche

Zugriff auf diverse Literaturdatenbanken (ACM, IEEE) über LRZ-VPN und –Proxy:
http://www.lrz-muenchen.de/services/netzdienste/proxy/browser-config/
Zugriff auf das ACM Portal und IEEE über LRZ-Proxy:
https://docweb.lrz-muenchen.de/cgi-bin/doc/nph-webdoc.cgi/000110A/http/portal.acm.org/portal.cfm
Zugriff auf Zeitschriften:
http://docweb.lrz-muenchen.de/