VR/AR Conceptual Hackathon

Amplify the Social Experience

Amplify the social experience for visitors to the Goethe-Museum!
Create means for awareness and social interaction between the visitors of the physical museum and the online visitors.

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#weimARVR

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Goethe-Nationalmuseum
mit Goethes Wohnhaus
Frauenplan 1
99423 Weimar

Goethe-Nationalmuseum mit Goethes Wohnhaus
- Goethes Wohnhaus
- Lebensfluten – Tatensturm

Goethe- und Schiller-Archiv

Herzogin Anna Amalia Bibliothek

Museen

Schlösser und Gärten

Einrichtungen

Goethe-Nationalmuseum

Das Goethe-Nationalmuseum ist das bedeutendste Museum zur Präsentation und Erforschung der Lebensleistung Goethes. Es umfasst das historische Wohnhaus am Frauenplan mit Garten, in dem ein Teil von Goethes kunst- und naturwissenschaftlichen Sammlungen sowie seine Privatbibliothek zu sehen sind. Zwei Museumsanbauten aus dem 20. Jahrhundert dienen zur Präsentation weiterer Sammlungsbestände in einem als Schaudepot eingerichteten Studiensaal sowie einem naturwissenschaftlichen Kabinett.

Die Ausstellung »Lebensfluten - Tatensturm« erschließt Goethes Leben und Wirken für die Besucher. Darüber hinaus befindet sich im Goethe-Nationalmuseum derzeit die Benutzerabteilung der Direktion Museen und insbesondere der Graphischen Sammlungen der Klassik Stiftung Weimar.

Einen Überblick über Goethes Sammlungen und Goethes Nachlass bietet der Menüpunkt Sammlungen. Der literarische Nachlass Goethes wird im Goethe- und Schiller-Archiv aufbewahrt.

→ Besucherinformationen

Bildergalerie (8 Bilder)

Klicken Sie auf das Bild für Großansicht und Diashow.

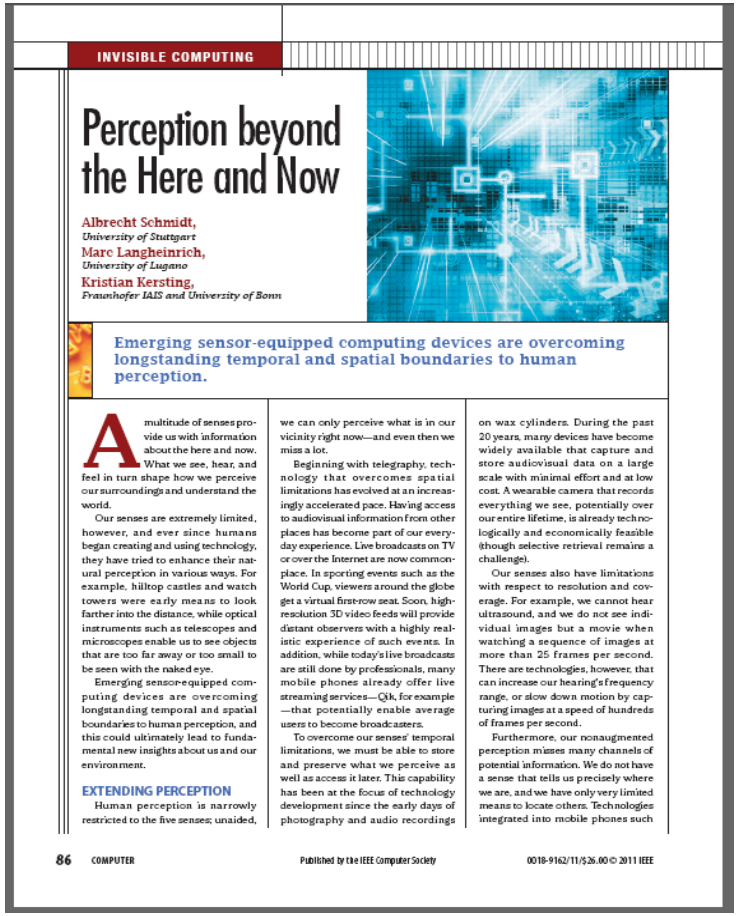
Task: Amplify the social experience for visitors to the Goethe-Museum!

- Create means for awareness and social interaction between the visitors of the physical museum and the online visitors.
- This includes, concepts for:
  - a web based visitor experience that links to VR and the physical place
  - A VR museum experience
  - An extension of the traditional museum visit to the physical place

- Create an overall concept (horizontal prototype) and highlight one specific solution detail (vertical prototype):
  - Develop ideas and make visual mock-ups
  - Describe a system architecture and outline the technical solution
  - Presentation (6 minutes)
  - One page flyer

Breaking boundaries

- Temporal boundaries
  - People visiting at different time
  - Short time frame (e.g. across time zones)
  - Longer time frames (e.g. generations)
- Spatial boundaries
  - With in the physical space
  - Between remote access to the web or to VR and the physical space



INVISIBLE COMPUTING

Perception beyond the Here and Now

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Fraunhofer IAIS and University of Bonn

Emerging sensor-equipped computing devices are overcoming longstanding temporal and spatial boundaries to human perception.

A multitude of senses provide us with information about the here and now. What we see, hear, and feel in turn shape how we perceive our surroundings and understand the world.

Our senses are extremely limited, however, and ever since humans began creating and using technology, they have tried to enhance their natural perception in various ways. For example, hilltop castles and watch towers were early means to look farther into the distance, while optical instruments such as telescopes and microscopes enable us to see objects that are too far away or too small to be seen with the naked eye.

Emerging sensor-equipped computing devices are overcoming longstanding temporal and spatial boundaries to human perception, and this could ultimately lead to fundamental new insights about us and our environment.

EXTENDING PERCEPTION

Human perception is narrowly restricted to the five senses; unaided, we can only perceive what is in our vicinity right now—and even then we miss a lot.

Beginning with telegraphy, technology that overcomes spatial limitations has evolved at an increasingly accelerated pace. Having access to audiovisual information from other places has become part of our everyday experience. Live broadcasts on TV or over the Internet are now commonplace. In sporting events such as the World Cup, viewers around the globe get a virtual first-row seat. Soon, high-resolution 3D video feeds will provide distant observers with a highly realistic experience of such events. In addition, while today's live broadcasts are still done by professionals, many mobile phones already offer live streaming services—Qik, for example—that potentially enable average users to become broadcasters.

To overcome our senses' temporal limitations, we must be able to store and preserve what we perceive as well as access it later. This capability has been at the focus of technology development since the early days of photography and audio recordings on wax cylinders. During the past 20 years, many devices have become widely available that capture and store audiovisual data on a large scale with minimal effort and at low cost. A wearable camera that records everything we see, potentially over our entire lifetime, is already technologically and economically feasible (though selective retrieval remains a challenge).

Our senses also have limitations with respect to resolution and coverage. For example, we cannot hear ultrasound, and we do not see individual images but a movie when watching a sequence of images at more than 25 frames per second. There are technologies, however, that can increase our hearing's frequency range, or slow down motion by capturing images at a speed of hundreds of frames per second.

Furthermore, our nonaugmented perception misses many channels of potential information. We do not have a sense that tells us precisely where we are, and we have only very limited means to locate others. Technologies integrated into mobile phones such

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Albrecht Schmidt, Marc Langheinrich, Kristian Kersting, "Perception beyond the Here and Now," Computer, vol. 44, no. 2, pp. 86-88, Feb. 2011, doi:10.1109/MC.2011.54

Things to consider: User journeys

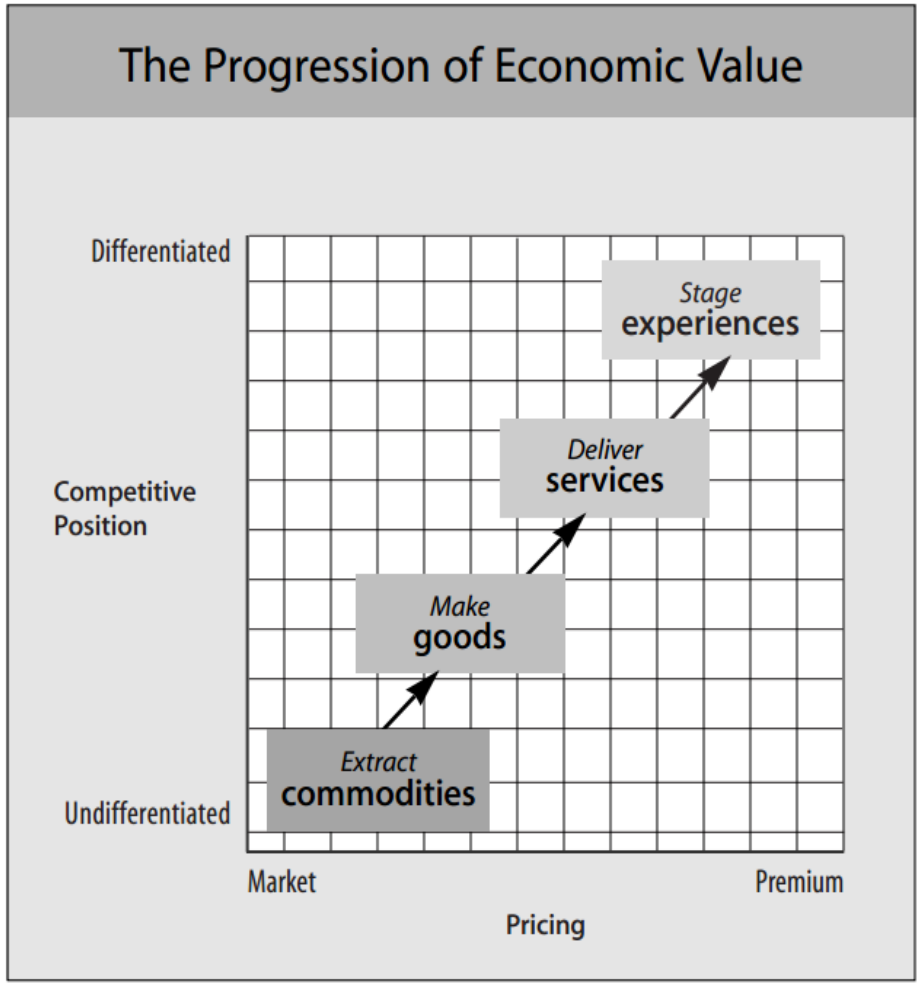
- Museum visit as part of a bigger experience (e.g. holiday, school year)
- Phases and transitions between phases
  - Before the visit (typically remote)
    - Preparation physical visit
    - Information gathering
    - Sharing of intent, bragging
  - Actual visit (typically on side)
    - Exploration
    - Implicit and explicit capture
  - After the visit
    - Reflection
    - Sharing of experience, bragging
  - Return visit?

Things to consider: Technologies

- Provide experiences for alternatives
- In the Museum
  - users with no additional personal tech (e.g. projected AR, background sounds, labels)
  - personal mobile devices
  - rented devices (e.g. AR or audio guides)
- Remote
  - Remote but local (e.g. in town but not in the museum)
  - Remote a never there phyiscal
  - mobile phone
  - web browser
  - VR devices

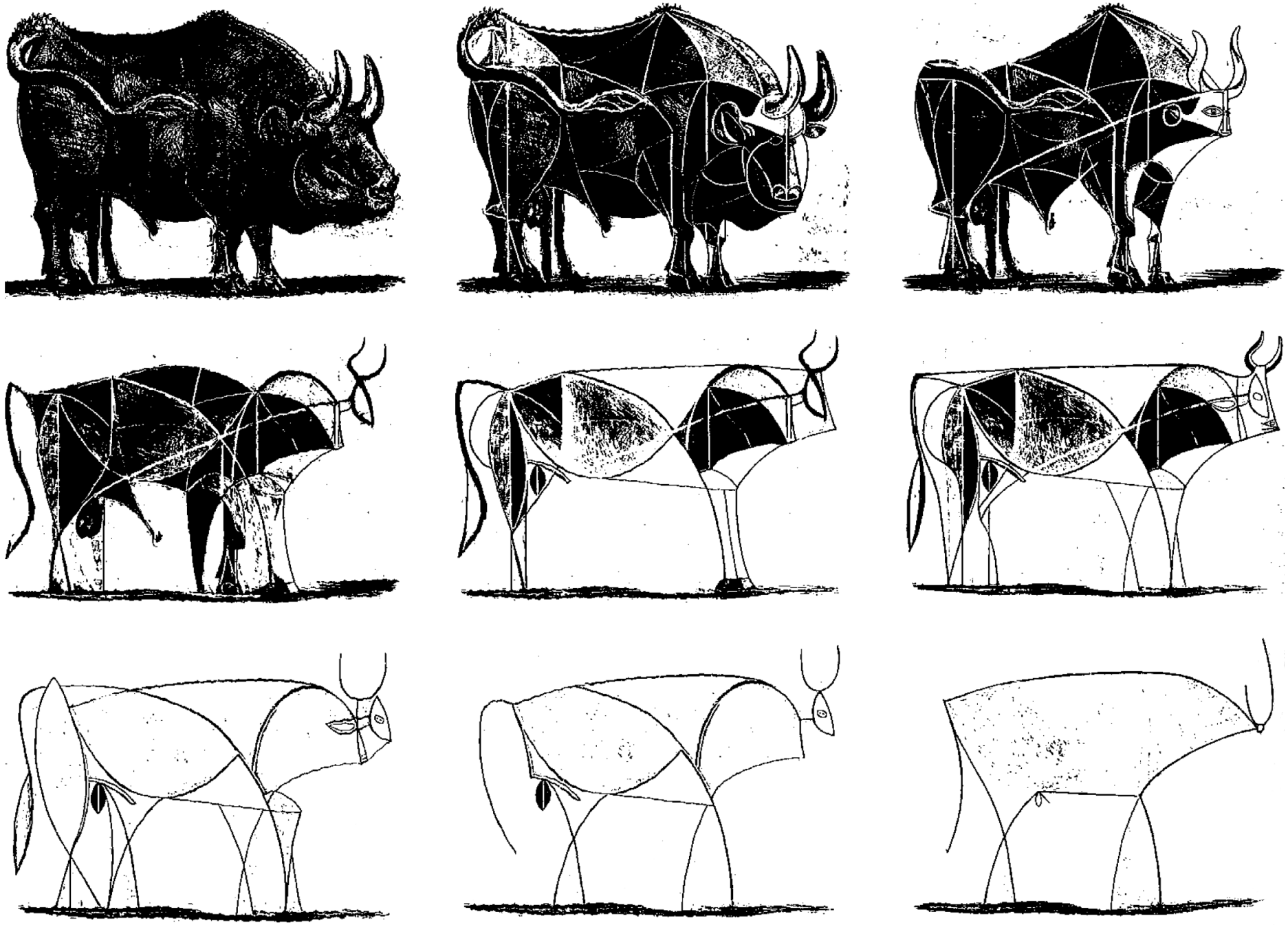
Inspirations / Random input

Experience as Value that is Staged

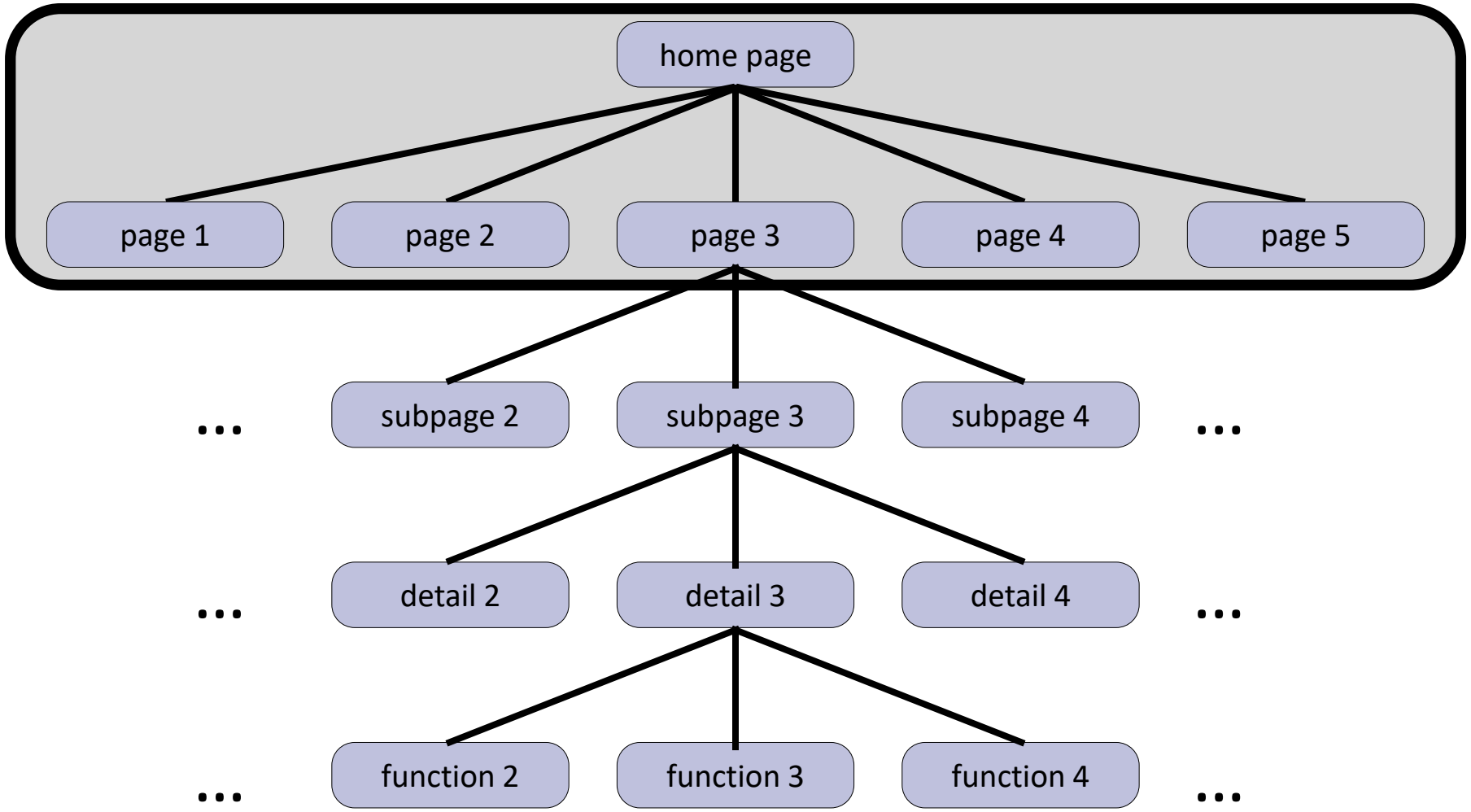


- Customers value the experience
- From function to emotion
- BUT no experience without functional technology

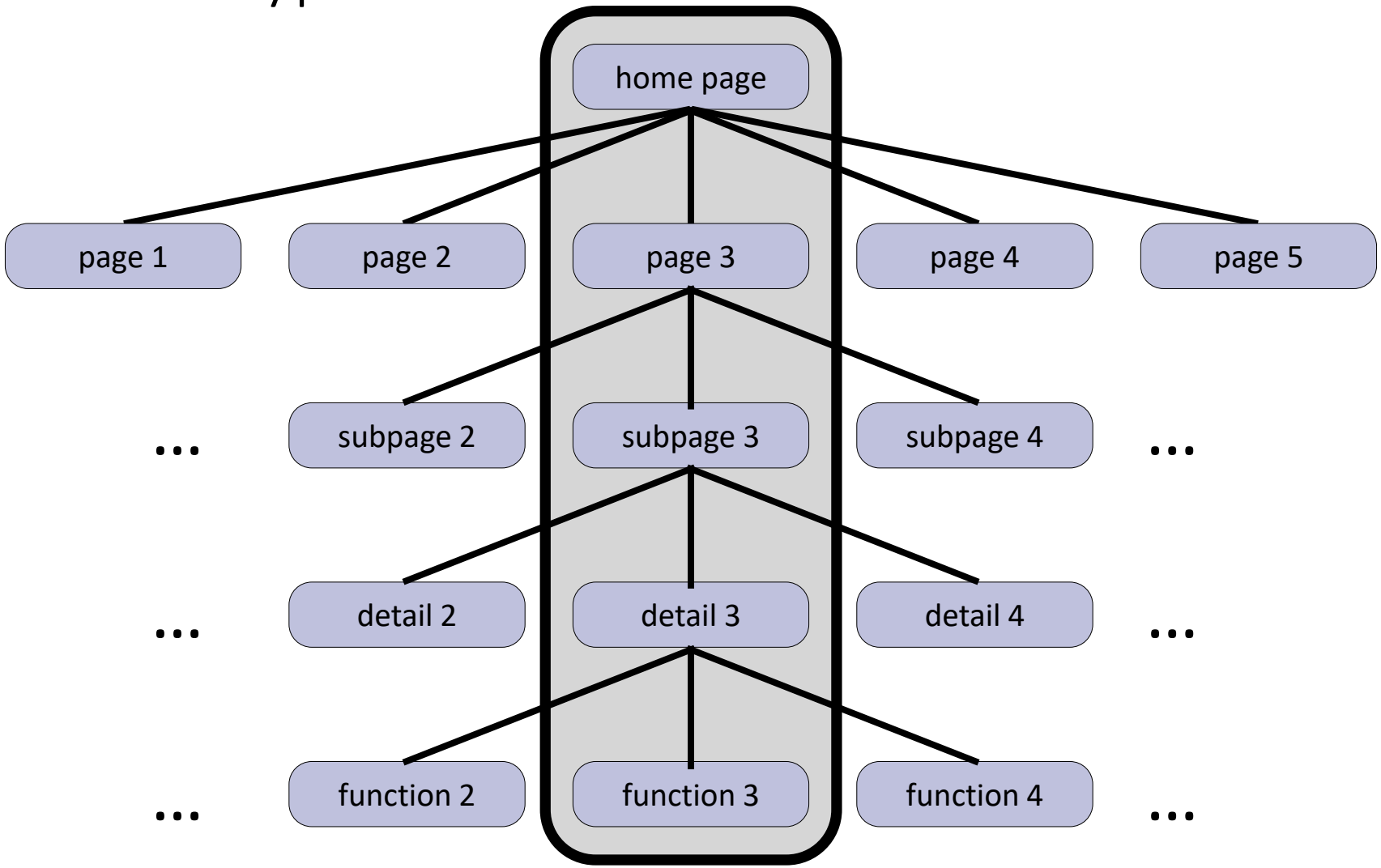
Aus: Pine and Gilmore. 1998.



Horizontal prototype



verticale Prototype



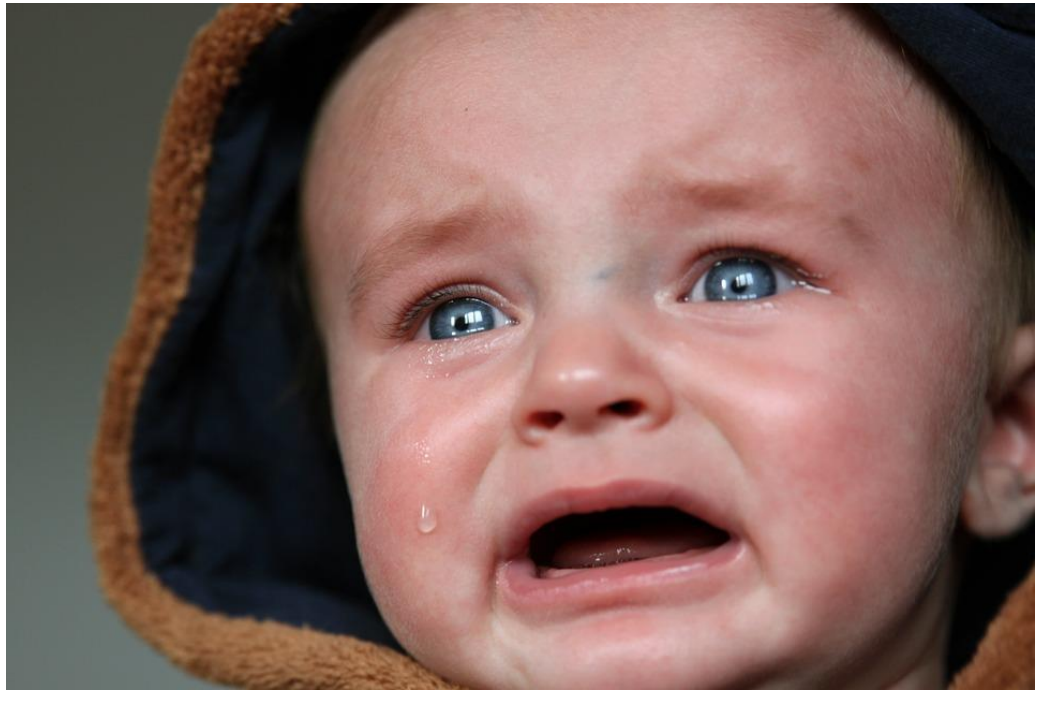
Emotions change abilities

Photo by Stevage (CC BY-SA 2.5)
https://en.wikipedia.org/wiki/File:Luna_Park_Melbourne_scenic_railway.jpg

Very basic understanding

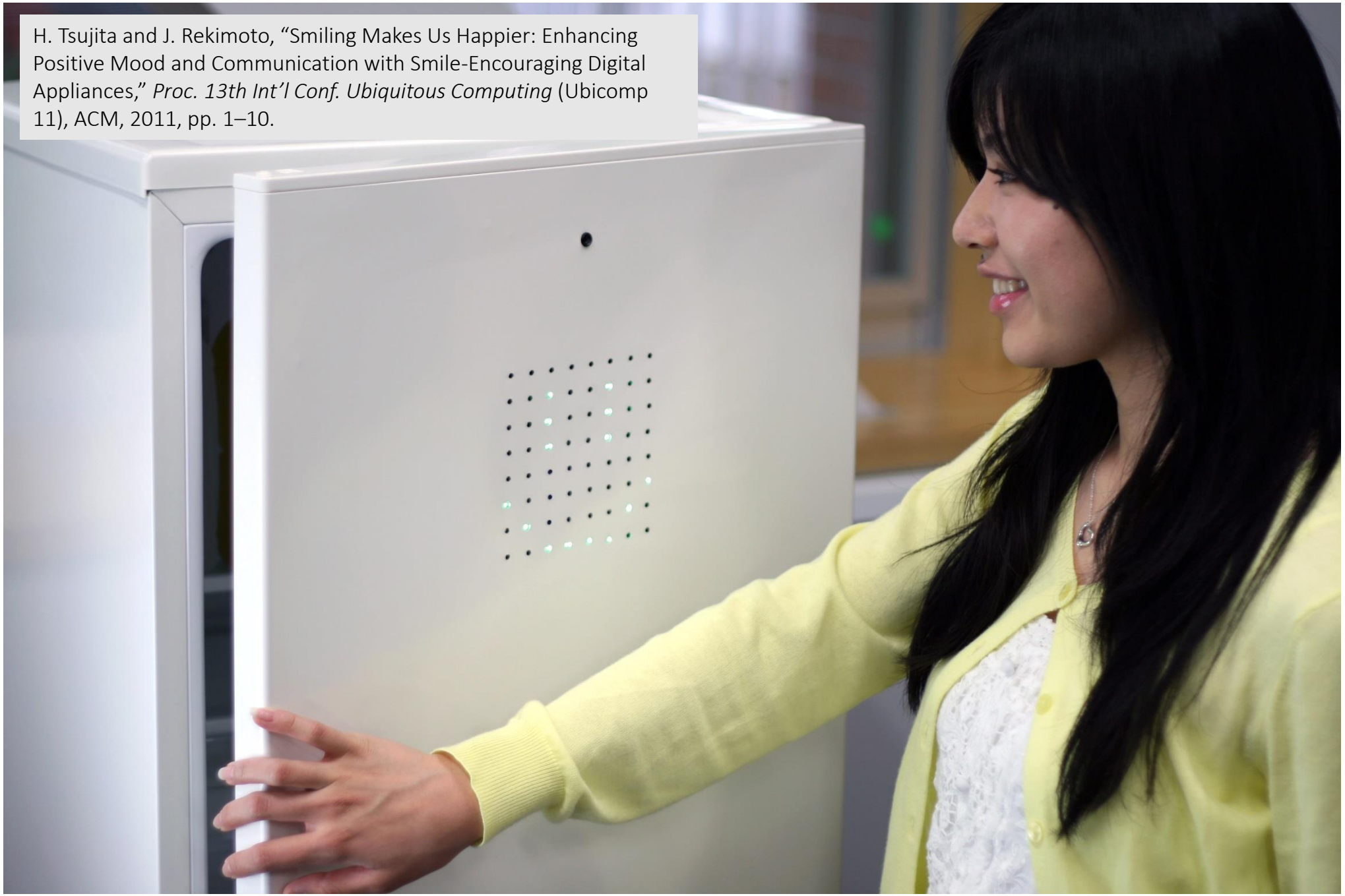
We are sad because we cry…

We cry because we are sad…



Emotion
Various theories

- James-Lange: emotion is our interpretation of a physiological response to a stimuli
  "we are sad because we cry..."
- Cannon: emotion is a psychological response to a stimuli
- Schachter-Singer: emotion is the result of our evaluation of our physiological responses, in the light of the whole situation we are in
- Emotion clearly involves both cognitive and physical responses to stimuli



H. Tsujita and J. Rekimoto, “Smiling Makes Us Happier: Enhancing Positive Mood and Communication with Smile-Encouraging Digital Appliances,” *Proc. 13th Int’l Conf. Ubiquitous Computing* (Ubicomp 11), ACM, 2011, pp. 1–10.

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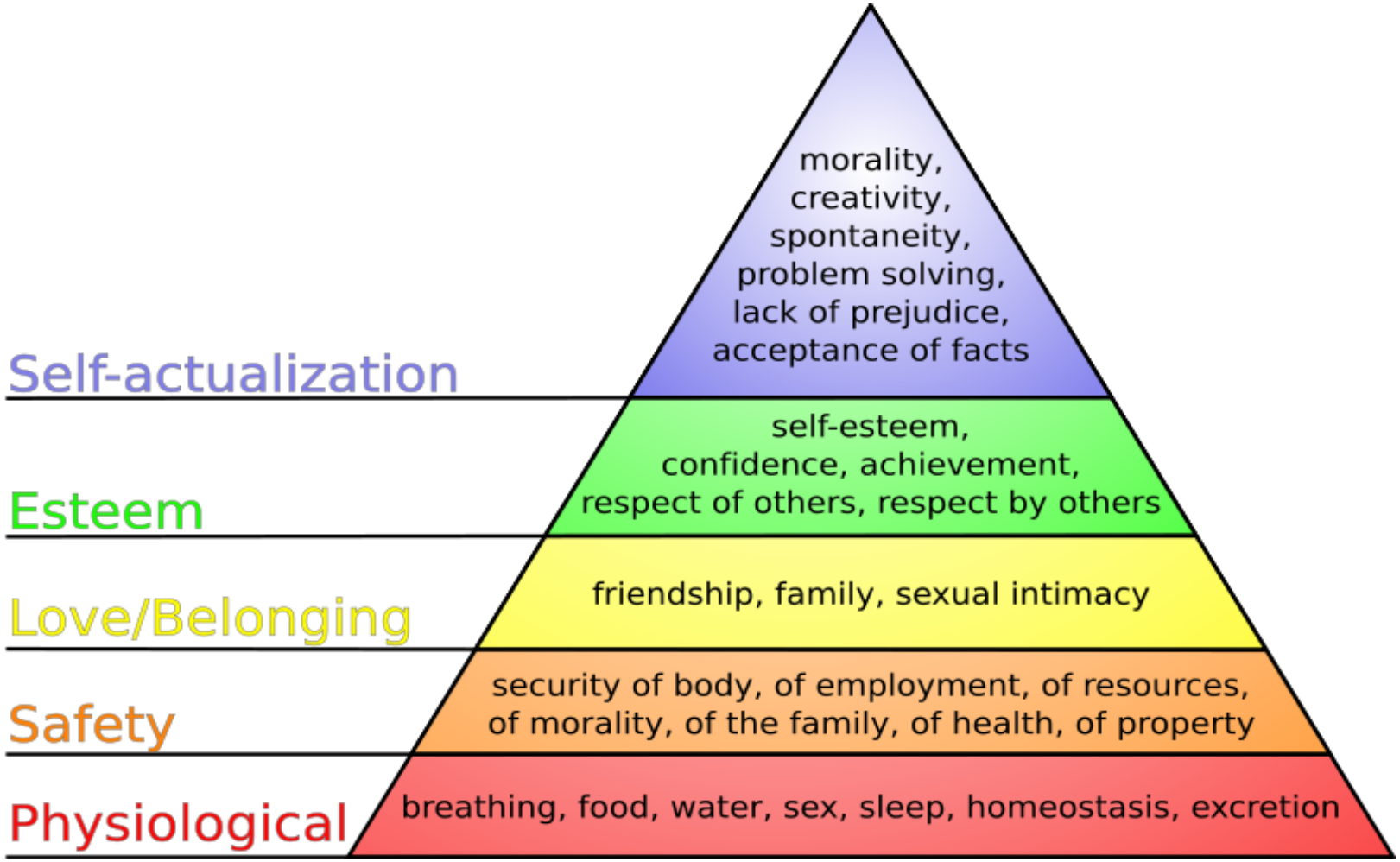
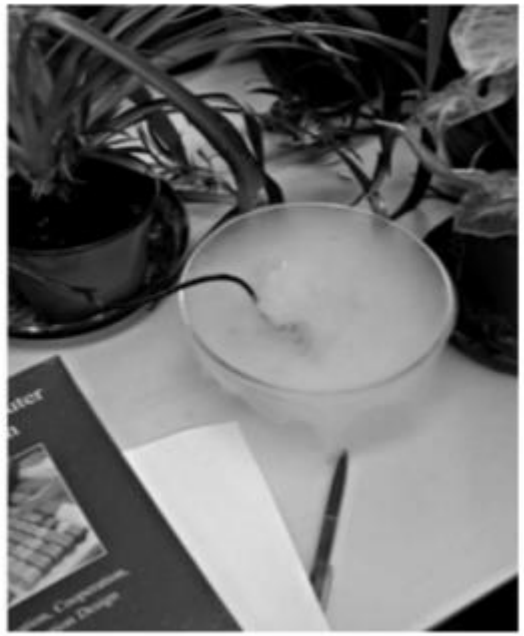
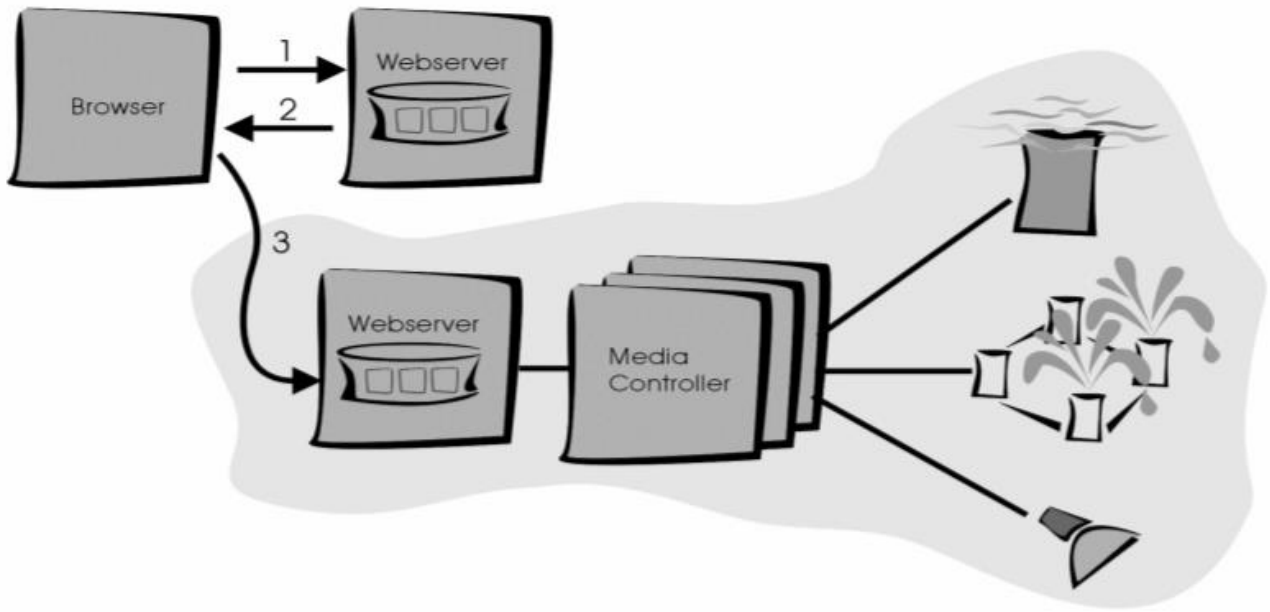
Design hints: “Long lasting constants”
Maslow’s Hierarchy of Human Needs







Hans Gellersen, Albrecht Schmidt (2001). Look who's visiting: supporting visitor awareness in the web. https://doi.org/10.1006/ijhc.2001.0514

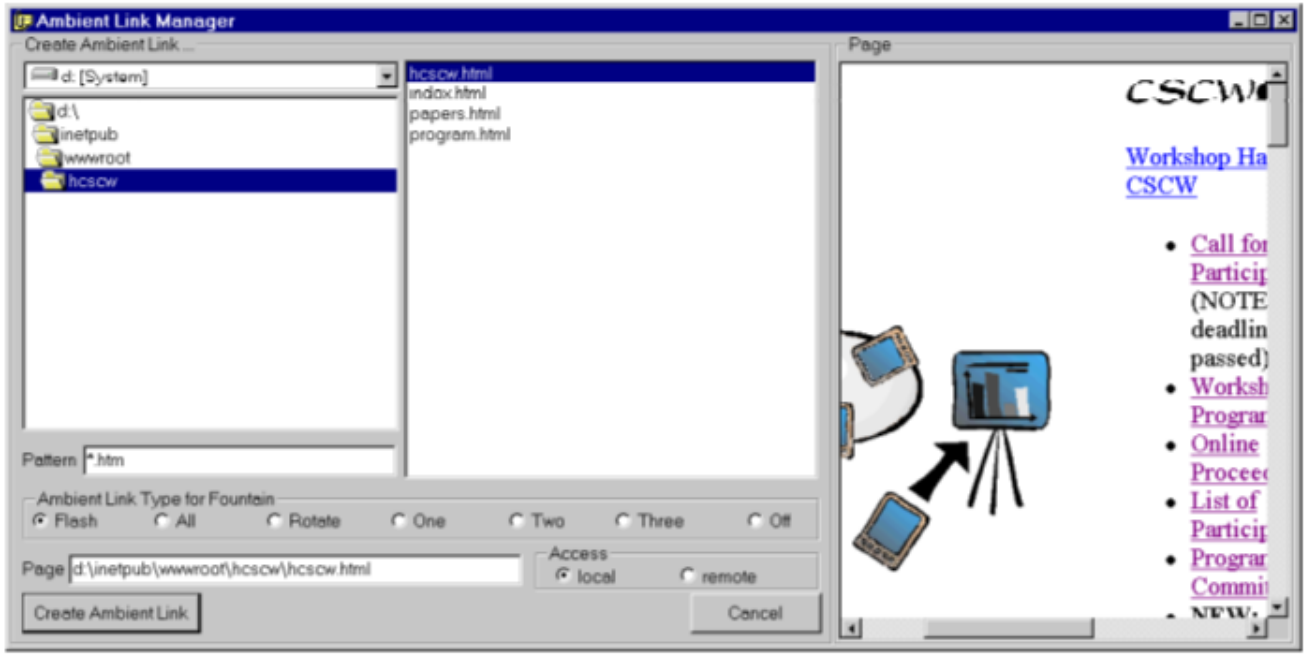


Figure 4: Ambient Link Manager

Figure 3: Patterns and Table Fountain

Schmidt A, Gellersen HW, Beigl M. Matching information and ambient media. InInternational Workshop on Cooperative Buildings 1999 Oct 1 (pp. 140-149). Springer Berlin Heidelberg.

Time plan

- Form groups (now) – 4 to 6 persons per group
- Lunch in groups
- All meet at the Goethe-Museum at 14:30
- Back at the lab at 17:00
  - 1 minute presentation by each group – “the big idea”
- Works… lab will be open (till the last one with a access card leaves)
- Presentations by 9 am
  - 10 Minutes per group

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UNDERSTANDING AND RESEARCHING THROUGH MAKING: A PLEA FOR FUNCTIONAL PROTOTYPES

Authors:
Albrecht Schmidt

Over the past 20 years, our community has embraced low-fidelity prototypes. We see many researchers using paper prototyping, mock-ups, and sketches to explore their ideas. It is easy to do and there are many good reasons for low-fidelity prototyping [1]; however, in exploring new routes in human-computer interaction, this is only the first step. In my experience, low-fidelity prototypes are helpful in killing bad ideas early in the design process but are insufficient in validating ideas and concepts—in particular, new interaction technologies beyond the classical (touch)screen. Many researchers, though, stop at the easy-to-do low-fidelity prototype and do not move to the next level: functional prototypes. Different forms of prototyping can help narrow the search space for a solution in different phases in the process (Figure 1). It is important to understand that the type of prototype we use strongly affects what type of user interaction is created and what type of feedback is received, as already shown in [2].

Insights

→ Making functional prototypes is a source of inspiration, understanding, and reflection.
→ The HCI community could

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