Notes
– Interplay and blending of the physical and digital space
– It will be a *complex* interplay, more than in traditional HCI
– Coherence needed, it’s a new kind of space
– Architects & interior designers needed → multidisciplinary teams
– Good idea to start with existing work practices, consider context

Questions
– Which terms are we using? Which pairs of opposite to use?
– How to design hybrid digital/physical systems? Is it just a digital enhancement of real rooms? Or something completely new?
– How many things do need to be digital at all? Does everything need to be digitally enhanced? Which parts plays which role?
– How to coherently design the interplay of physical and digital space? May stories and other design practices help?

Do not forget the data, consider it, too!
Technology

Notes

– Many problems with new technologies, security issues
– Need for software frameworks → huge effort needed
– Typical setup: large tables + N wall displays + mobile devices
– People bring in different personal devices (mostly tablets)

Questions

– Are there any standard “gold” setups? What types of new technology would we need?
– Different devices suggest different usage. Which ones are well suited for which tasks?
– How does technology influences our workflows, style of working and creativity?
– How can we achieve developing appropriate SW solutions? Will there ever be software (middleware) standards?
– Which role do models and MDSD play?
– Where are the printers in all these collaborative rooms?
Collaboration

- **Notes**
  - Typically co-located, but will be increasingly remote
  - Issues: sharing, access, privacy, roles (e.g. facilitator), number of users
  - There always seem to be several phases (to be supported):
    - e.g. brainstorming phase, negotiation phase, risk analysis or
    - Inspiration Gathering, Idea Generation, Idea Refinement or
    - Create - discuss - collect – expand - ...

- **Questions**
  - How can we design a seamless transition between individual and group work (tightly & loosely coupled work)?
  - How can we support several phases of interaction?
  - How do we support remote collaboration best?
  - How do we care for different roles of users, access rights?
Application Domains

- Notes
  - Important to consider existing work practices!
  - Museums, Education: Learning environment
  - Police (interesting!), Medicine
  - Design, Metadesign, Creativity & Brainstorming (looks like the killer app of most researchers ;-)
  - Industrial applications: car industry, oil companies
  - Control rooms (obviously): energy/power plant control, air traffic control → safety related work

- Questions
  - Why don’t we see more games as an application domain?
  - What are the demands of each application? e.g. safety, reliability, precision, inviting creativity → the environments & technology should not look identically!
Notes

- Gestures: physical movements of several parts of the body (discussion about pointing gestures)
- Touch/multi-touch; Pen Input [Inscription] marks, sketches, drawing, painting...
- Tangible Interaction ... and multiple inputs
- Naturalness of gestures vs. power
- Caring for single or multiple users?
- Usability evaluations are limited!
- Several layers of experience

Questions

- Which input modality should be favored, which combination?
- How can we develop appropriate usability tests?
- How can we ensure that our techniques are really serving their purpose?
Social and Privacy Aspects

- **Notes**
  - People are afraid of touching large (public displays)
  - Tension between private and public displays
  - Proxemic interaction, different interaction zones
  - Different roles of participants
  - Acceptance for people

- **Questions**
  - How can we invite people to interact?
  - How can we ease their hesitations and fears?
  - How can we cleverly design switching between public & private?
  - Can we even improve human-to-human interaction with these technologies?