Questions?

• Projects?
  – Deadline: Feb 13

• Literature review?
  – Deadline: Feb 11
Research techniques used in this book

• Ethnographic studies
  – Dairies (what they say they are doing)
  – Interviews
  – Videos (what they are really doing)

• Controlled experiments
  – Reviewing a scientific paper

• Importance of population selection
  – IMF: knowledge workers in a technology reach environment
  – Reading study: representative sample of readers
The social role of paper

DanTech
- Paper as a collaboration tool (+)
- Paper as tangible reminder (+)
- Paper as an anchor (-)
- Paper as institutional memory (-)

UKCom
- Paper as a source of flexibility (+)
- Paper as a source of privacy (+)
Paper in knowledge work

• Omnipresent
  – 51% of tasks paper only,
  – 35% paper with electronic support

• Key tasks
  – Support authoring work
    Provides simultaneous access to many piece of information at once
  – Support reviewing work
    Clear separation between reviewers and author’s work
  – Support planning work
    Physical organization such as piles, layout...
    Annotations help one construct and organize thoughts
  – Support collaborative activities
    Shared understanding of what others are doing
  – Support social conventions
    “Delivering papers is to important to leave to e-mail”
Reading

• Many form for reading
  – To identify
  – To skim
  – To remind
  – To answer questions
  – To self inform
  – To learn
  – To cross reference
  – To edit or review
  – To support listening
  – To support discussion
  – …
Using paper while reading

• People prefer paper while reading because it provides
  – Flexible navigation through a document
  – Flexible cross-referencing of more than one document
  – Flexible annotation mechanism
  – Flexible interleaving of reading and writing

• Visual aspect?
  – Contrast, sharpness…
Reading: Navigation

Paper
• Fast and transparent
  – Two handed,
  – Concurrent
  – Relying on sensory feedback
  – Rapid bookmarking

Digital documents
• Slow and distracting
  – One handed
  – Serial
  – Need of visual feedback
  – Slow bookmarking
Reading: getting the overall picture

Paper
- Large information space
  - Easy to organize
    - Ad hoc layout
  - Easy to glance at
  - Immediate access to information

Digital documents
- Small information space
  - Organization require interactions
    - Rigid layout
  - Difficult to glance at several documents
  - Often require interactions
Reading: Annotations

Paper
- Preserve the original
- Slow you down
- Transparent

Digital documents
- Preserve the original
  - Acrobat and Xlibris
- Slow you down
- Might be cognitively expensive
  - Acrobat?
  - Exception: Xlibris
Reading: Taking notes

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<td>– Xlibris</td>
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<td>– Acrobat?</td>
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<td>• Mostly sequential</td>
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<td>– Require interactions</td>
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<td>• Might be cognitively expensive</td>
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Paper affordances for reading

• Tangibility
• Spatial flexibility
• Tailorability
• Manipulability
### Reading: paper or digital?

- Many form for reading
  - To identify ✓
  - To skim ✓
  - To remind ✓
  - To answer questions ✓
  - To self inform ✓
  - To learn ✓
  - To cross reference ✓
  - To edit or review ✓
  - To support listening ✓
  - To support discussion ✓
  - ...

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Reading for next class

• MPO: Chap 5