SFWRENG 4HC3 6HC3 /COMPSCI 4HC3
Human Computer Interfaces
19 – Groupware

SFWRENG 4HC3 6HC3 | COMPSCI 4HC3

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Today

- Case Study in:
  - Groupware / Computer Supported Cooperative Work

HCI Case Studies

GROUPWARE

This section based on “Collaborative Software” from: http://www.usabilityfirst.com and Chapter 20 of course text

CSCW

- Computer supported cooperative work
- Still used but scope is much broader… perhaps "groupware" is better?
  - Not always cooperative
  - Not always work
  - Devices that are not traditionally called 'computers'
- Also related to CMC: computer-mediated communication

What is groupware?

- Examples of groupware include:
  - Google docs
  - Cacoo.com
  - Video conferencing software
  - Email
  - Desktop sharing
  - Social networking applications
- Other examples?

Why Groupware?

- to facilitate communication: make it faster, clearer, and more persuasive
- to enable communication where it wouldn't otherwise be possible
- to enable telecommuting
- to cut down on travel costs
- to bring together multiple perspectives and expertise

Source: http://www.usabilityfirst.com

Why Groupware?

- to form groups with common interests where it wouldn't be possible to gather a sufficient number of people face-to-face
- to save time and cost in coordinating group work
- to facilitate group problem-solving
- to enable new modes of communication, such as anonymous interchanges or structured interactions
- …

Source: http://www.usabilityfirst.com

Issues for cooperative working

- Social activity is fluid and nuanced which makes it technically difficult to construct systems.
- Members of organizations usually have differing and multiple goals, and conflicts and their resolutions may actually be an important part of cooperative working.
- Exceptional situations are a commonplace part of normal working. Job roles are often informal.
- People like to know who else is in shared workspaces. People use this awareness to guide their own work.

Issues for cooperative working

- People learn to cooperate by observing and participating in communication and information exchange.
- How CSCW is used is a result of negotiation within the groups themselves.
- CSCW relies on a critical mass of people if it is to be effective.
- Co-evolution is an important factor in CSCW. We learn to adapt to the configuration of a technical system and we adapt the system to suit our needs.
- Incentives are centrally important. People will not cooperate unless there is something in it for them.

Grudin's Eight challenges for CSCW

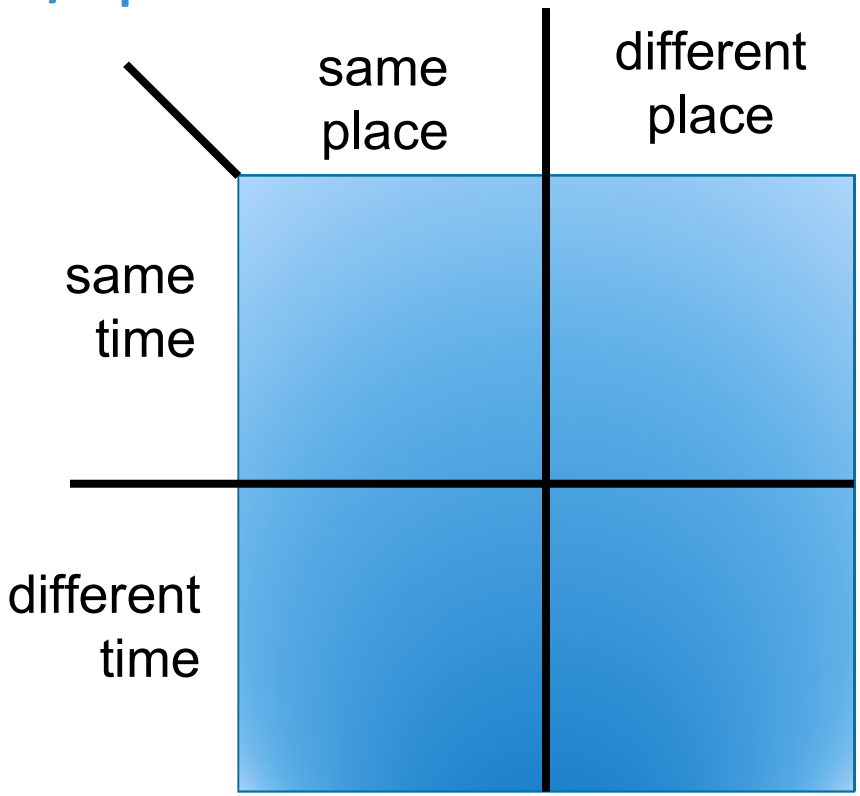
1. The disparity between who does the work and who gets the benefit
2. Critical mass - CSCW needs a critical mass of people to participate
3. Social, political and motivational factors - Work is not a just a rational activity, but a socially constructed practice, with all the shifting, conflicting motivations and politicking that this implies.
4. Exception handling in workgroups - work is social, and is supported by informal procedures as well as formal ones.

Grudin's Eight challenges for CSCW

5. Designing for infrequently used features
6. The underestimated difficulty of evaluating groupware - Group applications are inevitably more difficult to evaluate.
7. The breakdown of intuitive decision-making
8. Managing acceptance: a new challenge for product developers

Kinds of groupware

- One way we can classify groupware is in terms of the time/space matrix



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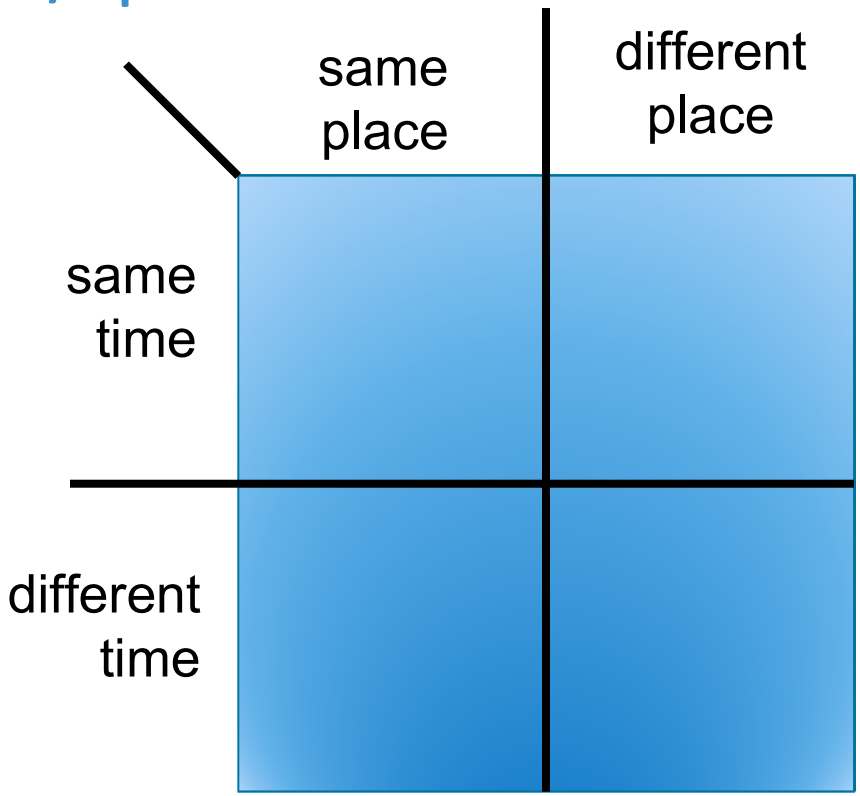

When?
Where?

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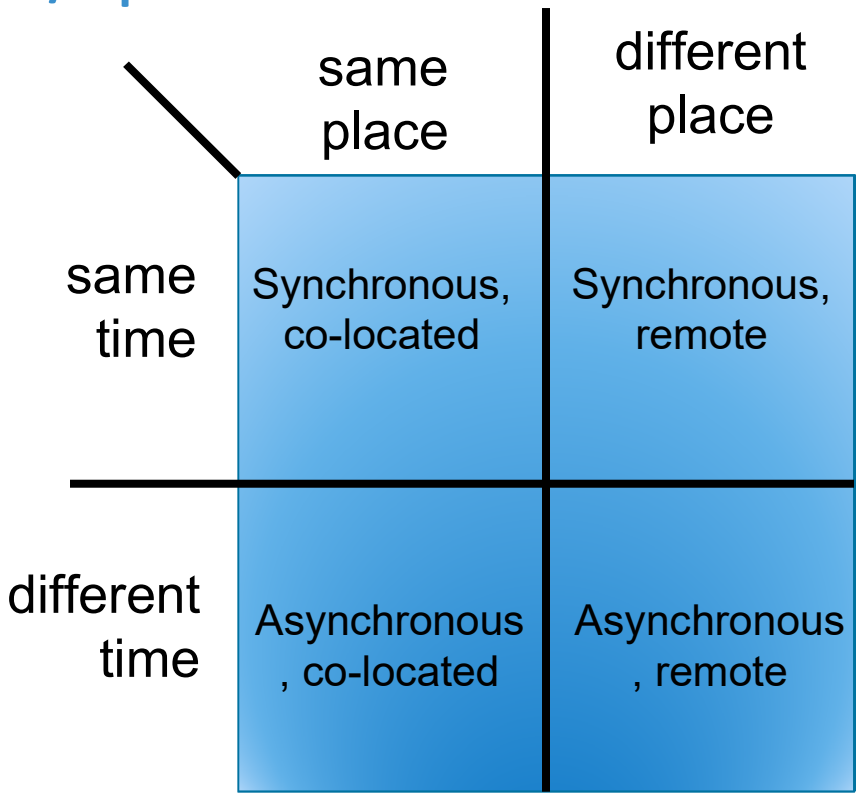

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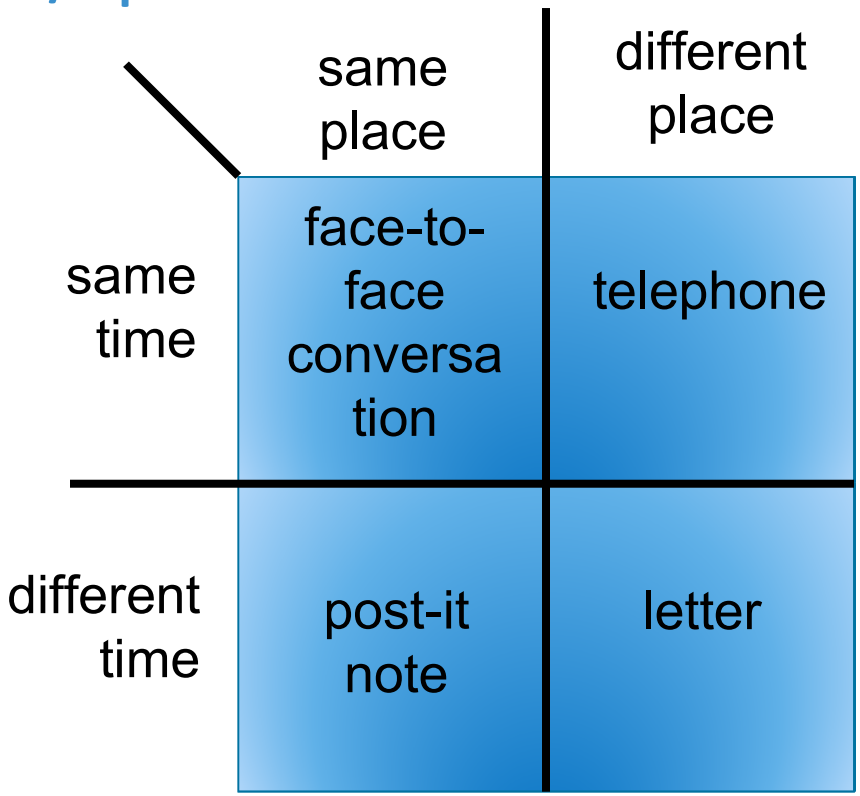

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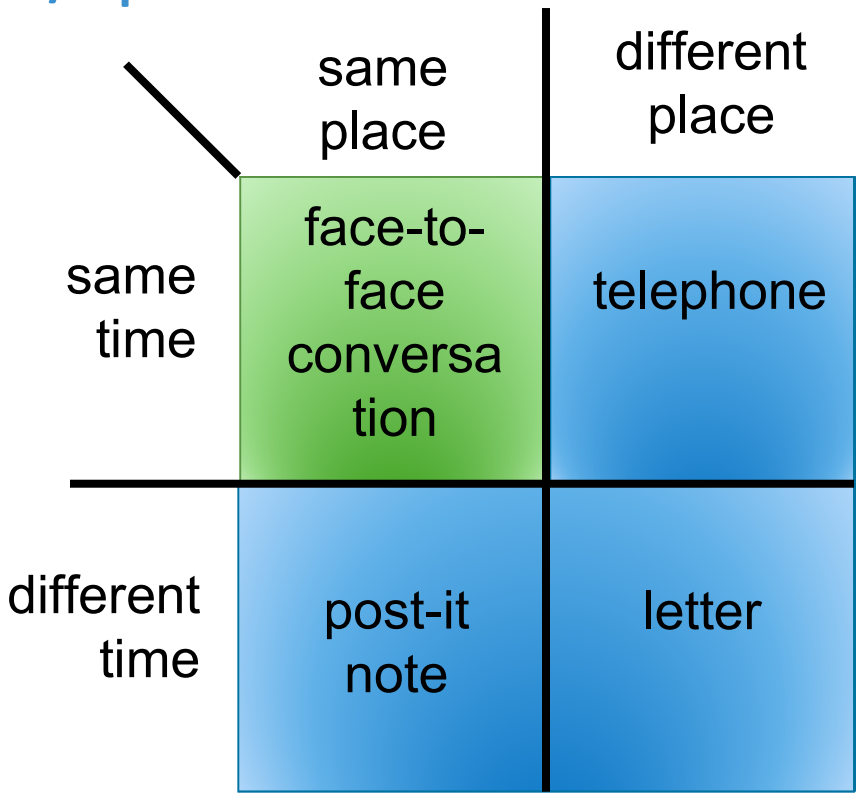

Matchmaker

Kinds of groupware

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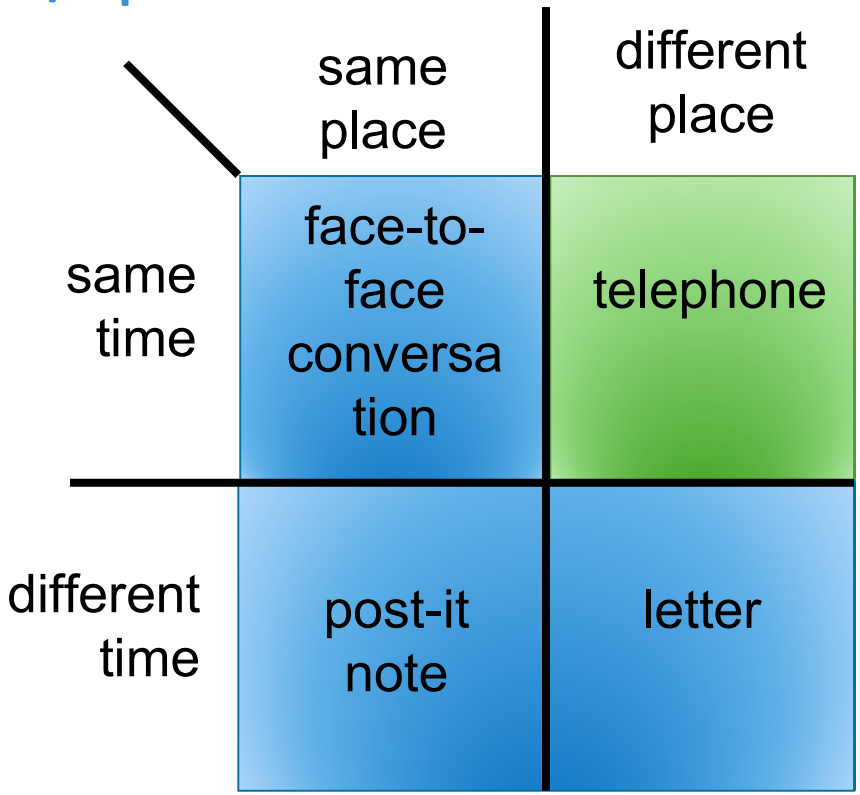

(Source: Dix, Finley, Abowd, Beale, *"Human-Computer Interaction")*


Cacoo
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Tour
Pricing
Support
Store
Create diagrams online
Real time collaboration!
Cacoo is a user friendly online drawing tool that allows you to create a variety of diagrams such as site maps, wire frames, UML and network charts. Cacoo can be used free of charge.
SIGN UP! Get a Free Account!
Susan
John

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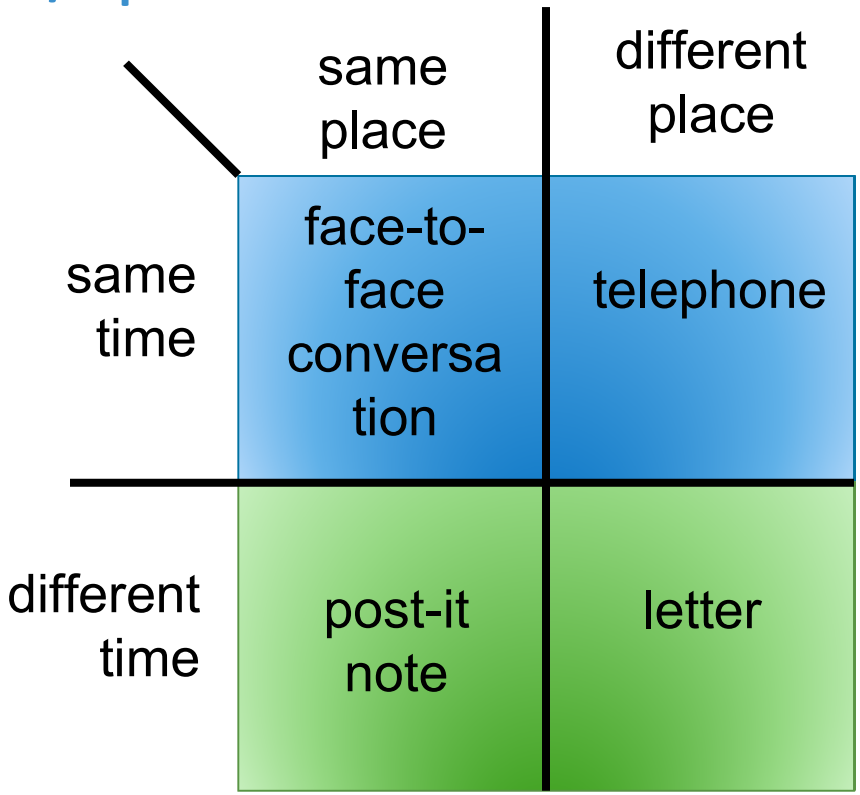


LINC:
An Inkable Digital Family Calendar

Carman Neustaedter [1]
A.J. Bernheim Brush [2]
Saul Greenberg [1]

University of Calgary, Canada [1]
Microsoft Research, USA [2]

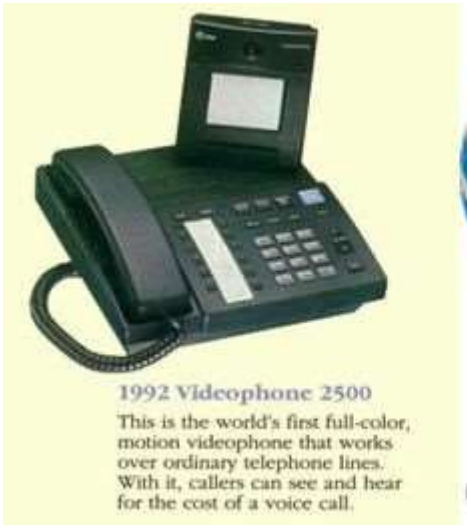
Design Challenges for Groupware

- All the normal usability principles apply

+

- Networking technology & synchronization
- Size of groups: 1,000,000 or 5 people?
- Pace of interaction – rate of conversation
  - System responsiveness becomes more important
- Simultaneous support for different user roles
- "Critical Mass" effect

Adoption: Interoperability
The 1990's Videophone



at&t

MCI

Source: http://www.usabilityfirst.com


16:34
Samantha
Call in progress
00:34
Sprint
HTC


End
End


Skype™ - tkeating
File Account Call Chats View Tools Help
Tom Keating
1 new event
Call cheaply to mobile phones and landlines
Seasonal offers on phones. Visit Store
Rich Tehrani
Add Callers
Do More
Rich Tehrani
This is High Quality video.
For the best video qualit...
Menu
Video started
Call Duration 00:51
Stop My Video
Call with Rich Tehrani 9,234,229 p...

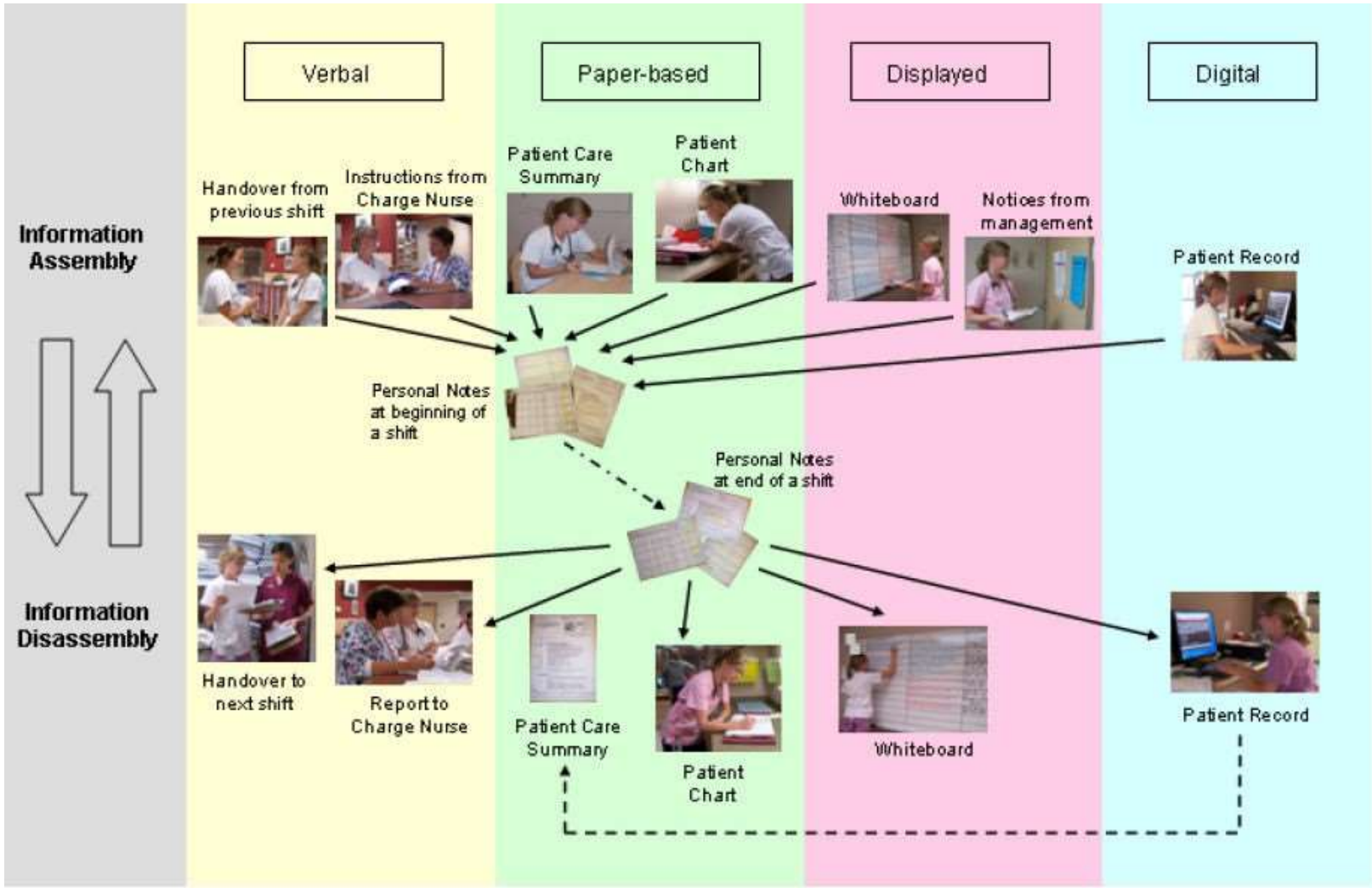
Adoption: Perceived Benefit

- Requires benefit for the group + benefit (or at least no extra work) for individual
- For example: Office Calendar
  - Benefit for group scheduling if everyone keeps it up to date
  - Personal benefit to not doing so because software is difficult to use, prefer paper calendar, ...
- Other examples: Google Wave
- Solutions:
  - Social pressure
  - Ensure (perception of) personal benefit

Abuse: The “Commons” Problem

- Taking inappropriate advantage of anonymity
- Sabotaging group work
- Violating privacy

Example: Information Flow over Shift Change



Charlotte Tang and Sheelagh Carpendale. Supporting Nurses' Information Flow by Integrating Paper and Digital Charting. In Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW), pages 43-62, 2009.

Session Control

- Session control:
  - What spaces are available
  - Who can enter and exit the system
  - When
- Issues of:
  - Facilitation (including side conversations)
  - Privacy
  - Interruption management

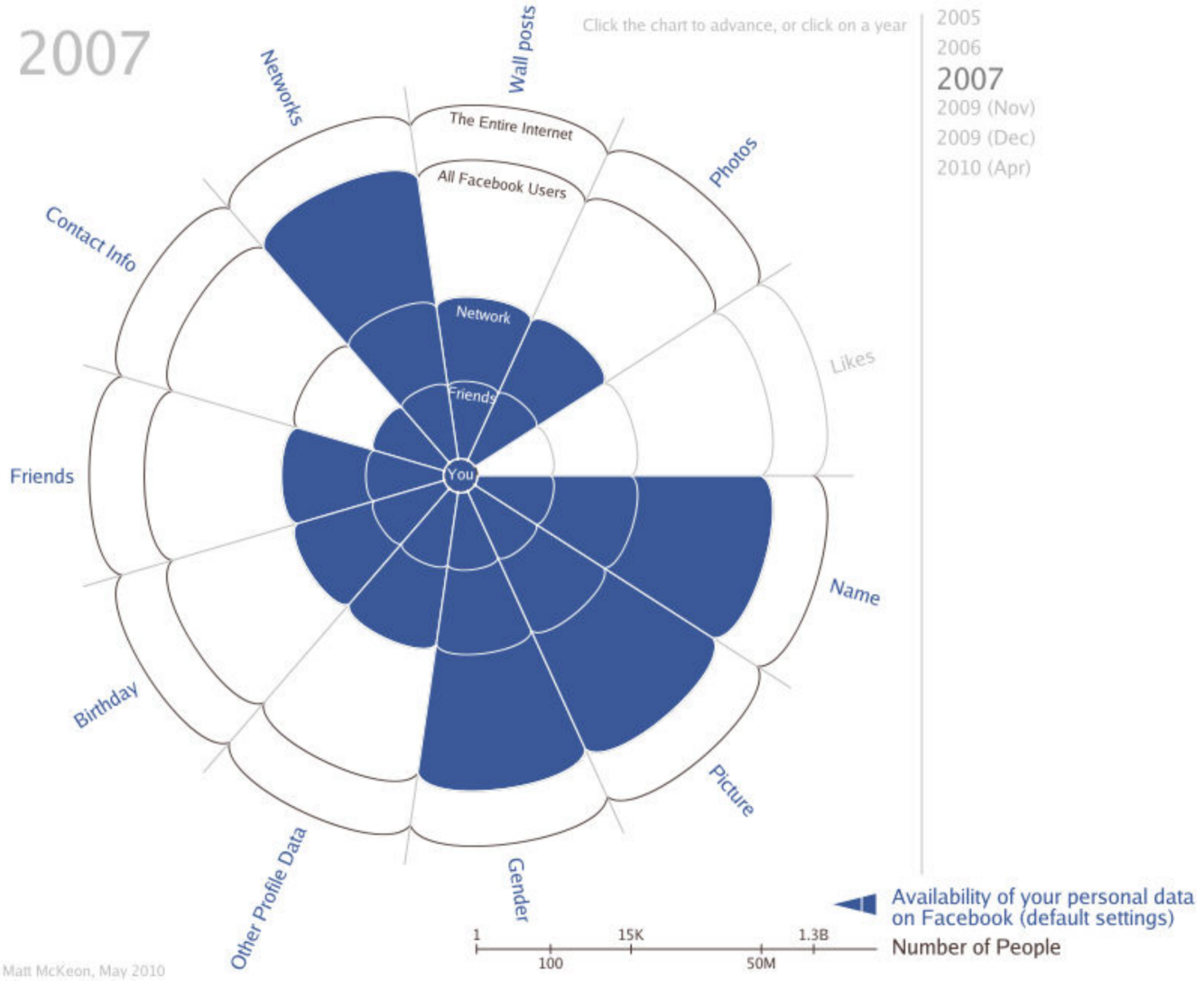
Floor Control

- Access to shared artifacts (e.g. shared whiteboard)
  - Simultaneous (generally preferred)
  - Turn-taking
- Management of disruptive individuals
- Hybrid solutions:
  - Shared and private space
    - Recall – tabletop territories
  - Proximal interaction

Privacy Options

- Privacy & Anonymity
  - Anonymity can be crucial to fair and open discussion
- Sharing, Identification, Accountability
  - More information leads to common ground
  - Useful for customization of interface
  - Accountability, reduction of abuse
- Control and Reciprocity
  - User-selected amount of control of privacy and anonymity
  - Requesting information requires sharing information

Evolution of Privacy on Facebook



http://mattmckeon.com/facebook-privacy/