

Social Aspects of HCI - designing for collaboration and communication

Overview

- Conversation with others
- Awareness of others
- How to support people to be able to:
 - Talk and socialize
 - Work together
 - Play and learn together

Conversation with others

- Various mechanisms we follow to hold a conversation
 - Mutual greeting

A: Hi there

B: Hi!

C: Hi

A: All right?

C: Good, How's it going?

A: Fine, how are you?

C: OK

B: So-so. How's life treating you?

Conversational rules

- Turn-taking to coordinate conversation
 - A: Shall we meet at 8 ?
 - B: Um, can we meet a bit later ?
 -
 - A: Shall we meet at 8 ?
 - B: Wow, look at him ?
 - A: Yes, what a funny hairdo !
 - B: Um, can we meet a bit later ?
- Back channeling to signal to continue
 - Uh-uh, umm, ahh

More conversation rules

- Farewell rituals
 - Bye then, see you, see you later
- Implicit and explicit cues
 - e.g looking at watch, fidgeting with coats and bags
 - Explicitly says “Oh, I have to go now”
- Breakdowns in conversation
 - What ? Huh ?
 - What happens with email, phone ?
- “Repairing” the conversation
 - Ahhh! I though you meant that one: so it's this one

Design implications

- How to support conversations when people are 'at a distance' from each other
- Many applications have been developed:
 - Email, videoconferencing, videophones, computer conferencing, instant messaging, chat rooms, collaborative virtual environments, media spaces
- How effective are they ?
- Do they mimic or extend existing ways of conversing ?

Synchronous Computer-Mediated Communication

- Conversations are supported in real time through voice and/or typing
 - Video conferencing, chat rooms, Multiplayer games
- Benefits
 - Non-verbal communication
 - Shy people
- Problems
 - Video lacks bandwidth, shadows, jitter
 - Bad behavior is not accountable – hiding behind avatar

G3 mobile phones

- Will technical problems disappear ?
- Can you establish eye contact in small image ?
- Will people find it socially acceptable to talk to someone in the palm of their hands ?



The VP-210" VisualPhone: a mobile video phone developed by the Japanese company Kyocera Corporation
Source: <http://www.kyocera.co.jp/news/1999/9905/0003-e.asp>

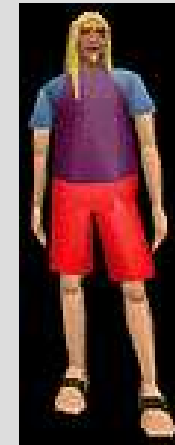
Asynchronous communication

- Communication takes places remotely at different times
 - Email, newsgroups, blogs
- Benefits
 - Read anyplace, anytime
 - Multicasting
 - Easier to express things
- Problems
 - Flamming
 - Spamming
 - Message overload
 - Lack of non-verbal cues :-)

New communication technologies

- Move beyond trying to support face-to-face communication
- Provide novel ways of interacting
- Examples:
 - SMS texting on mobile phones
 - Online chatting
 - Collaborative virtual environments
 - Multiplayer games
 - Media spaces
 - Extend the world of desks, chairs, walls and ceilings
 - Check out : Diamond Age- Neal Stephenson, Hyperion series by Dan Simmons

Collaborative virtual environments



The rooftop garden in BowieWorld, a Collaborative Virtual environment (CVE), supported by Worlds.com. Users take part by “dressing up” as an avatar. There are 100s of avatars to choose from, including penguins and real persons. Once an avatar has entered a world they can explore it and chat to other avatars.

Source: www.worlds.com/bowie

Video Window System (Bellcore, 1989)

- A shared space that allowed people 50 miles apart to carry on a conversation as if in the same room
- 3 x 8 ft “picture” window with video and 4 channel audio
- Problems
 - People in same room tend to talk more
 - Move closer to window to strike a conversation
 - Public broadcasting

Collaborative software development

- Prof. Daniela Damian
- <http://www.cs.uvic.ca/~danield>
- Class together with Australia



Network Music Performance

- Gigapop – Ajay Kapur (now in UVic), Perry Cook, Princeton University



Coordination support

- Shared calendars
 - Personal, public
 - Flexibility vs correctness
- Project management systems
- Turning technology inside out
 - Desensitized by emails
 - Writing on whiteboard deadline and tasks from online systems
 - Post-it notes
 - Hand-written TODO lists

Awareness of others

- Involves knowing who is around, what is happening and who is talking with whom
- Peripheral awareness
 - Keeping an eye on things happening in the periphery of vision
 - Overhearing and overseeing allows tracking of what others are doing without explicit cues
- Media spaces

Clearboard (Ishii et al, 1993)

- ClearBoard - transparent board that shows other person's facial expression on your board as you draw



Babble (IBM, Erickson et al, 1999)

Circle with marbles represents people taking part in conversation in a chatroom.

Those in the middle are doing the most chatting.

Those towards the outside are less active in the conversation.

The screenshot shows the Babble 1.04 chatroom interface. The window title is "Babble 1.04 for Tom at Minneapolis (snowfall@us.ibm.com) on k12-7.w...". The menu bar includes "Babble", "Edit", "Users", "Topic", "Options", and "Help".

- User List:** A list of users on the left side, each with a colored circle next to their name: (Amy) (green), cals (green), Dan@lotus (teal), Jason [Sorry, (red), John in the lab (orange), Mark in the lab (blue), Tom at Minnea (green), and Wendy in the l (pink).
- Social Proxy:** A central circle containing several colored marbles representing the users. The marbles are arranged in a circle, with some in the center and some towards the edge.
- Topic List:** A list of topics on the right side, including "Active...", "Commons Area", "Amusing Wendy", "ANNOUNCEMENTS", "Auto-Gone discussio", "Babble And Workflo", "Babble and XML", "Babble Chat Feature", "Babble Design Issu", and "Babble Drawings".
- Current Topic:** A text area at the bottom showing the current conversation. The text includes: "conflict with design that is beautiful. It just takes more work [of course].", "====Thursday 27Aug98 2:28:38 PM EDT From: Wendy in the lab Anyone know what the thing on the side of the monitor is on the iMac? (It's a kind of rectangle with another piece of plastic with a teal-lined hole coming over the rectangle, kind of like a tab)??", and "====Thursday 27Aug98 2:39:00 PM EDT From: John in the lab It is the cable port."

Ethnographic studies

- Field study (chapters 9, 12)
- Studies of how people carry out their work in different settings
- See interview on page 138
 - Evaluation studies
 - Discover studies
 - Study of how people read digital documents
 - At least 10 different ways
 - Expand from evaluation and usability testing to informing design

Key points

- Social mechanisms like turn-taking, conventions, etc. enable us to collaborate and coordinate our activities
- Keeping aware of what others are doing and letting others know what you are doing are important aspects of collaborative working and socializing
- Many collaborative technologies (groupware or CSCW) systems have been built to support collaboration, especially communication and awareness