

# Using Informal Interfaces to Support Human-Human Communication

James A. Landay  
March 11, 1998  
ILP

# Computers Support Human-Human Communication (HHC)

Design ideas

E-mail

Reports

Presentations

# Traditional Software Interfaces

- ✓ Force translations to formal representations
  - \* warp human-human communications

?

# Traditional Representations

- ✓ Rigid and unambiguous
  - \* hard to mix (e.g., few tools support rough sketches)
  - \* warp perceptions of the viewer
- ✓ Increase time
  - \* encourage precision
- ✓ Inhibit creativity
  - \* "tunnel vision"

?

# Informal Communications Styles

- ✓ Speaking
- ✓ Writing
- ✓ Gesturing
- ✓ Sketching

Informal UIs allow users to work naturally

?

# Application Areas

- ✓ Architectural design
- ✓ UI design
- ✓ Informal presentations

?


### Outline

- ✓ Informal user interfaces
- ✓ Sketching user interfaces
- ✓ Creating informal presentations


### Early Stage UI Design

- ✓ Brainstorming
  - \* put designs in a tangible form
  - \* consider different ideas rapidly
- ✓ Incomplete designs
  - \* do not need to cover all cases
  - \* illustrate important examples
- ✓ Present several designs to client

### Sketching of UIs



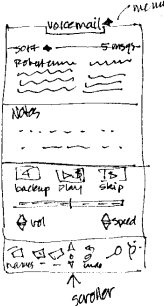
### Sketching of UIs



### Drawbacks of Current Tools

- ✓ Require specification of details
  - \* give specific instance of a general idea
    - e.g., exact widgets, fonts, alignments, colors
  - \* designers focus on unimportant details
  - \* evaluators focus on wrong issues
- ✓ Take too much time to use
  - \* poor support for iterative design

### Paper Sketches

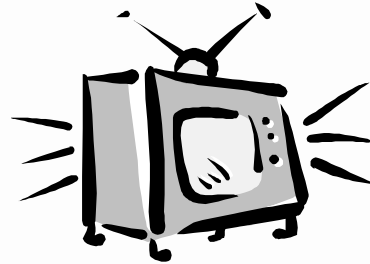


- ✓ Advantages:
  - \* support brainstorming
  - \* do not require specification of details
  - \* designers feel comfortable sketching
- ✓ Drawbacks:
  - \* do not evolve easily
  - \* poor support for annotations
  - \* force manual translation to computer
  - \* do not allow end-user interaction

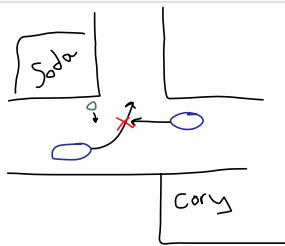
## Designing UIs with SILK

- 1) Designer sketches ideas rapidly with electronic pad and pen
  - \* SILK recognizes widgets
  - \* easy editing with gestures
- 2) Designer or end-user tests UI
  - \* widgets behave
  - \* specify additional behavior visually
- 3) Semi-automatically transforms to a "finished" interface

## Video



## Informal Presentations



- ✓ Typical uses
  - \* research group meetings, lectures, brainstorming...

## Informal Presentations

- ✓ Characteristics
  - \* very interactive
  - \* early results that aren't "written in stone"
  - \* less time to create
- ✓ Importance
  - \* help people "bat" ideas around
- ✓ Opportunity
  - \* apply our expertise in tools for early creative design

## Problems with Existing Tools

- ✓ Colored pens on overheads
  - \* miss the many advantages of computers
- ✓ Electronic presentation tools
  - \* show wrong level of commitment to ideas
  - \* slow for illustrating rough ideas
  - \* hard to use dynamic capabilities of computers

## Designing Informal Presentations on the Electronic Desk



### Designing Informal Presentations on the Electronic Desk

A hand-drawn diagram of a presentation interface. It shows a window with "Soda" written inside, a cursor pointing to a red "X" on a line, and another window with "Cory" written inside. Below the windows are three buttons labeled "STEP / F10", "REV", and "FF", and a progress bar.

### We Are Building Informal Presentation Tools

- ✓ Quick sketching of slides & diagrams
- ✓ Easy creation of rough dynamic presentations
  - \* use a sketched visual language
- ✓ Take advantage of two-handed manipulation
- ✓ Also support authoring of 3D presentations
  - \* e.g., animations of chemical reactions for lectures
- ✓ Integrated with an existing presentation tool

### Questions We Will Answer

- ✓ What is an appropriate visual language?
  - \* can you keep it simple, yet expressive? 2D & 3D?
- ✓ How important is recognizing sketched objs?
- ✓ How do you mix the formal & informal?
- ✓ What are appropriate table-based or whiteboard-based interactions?
- ✓ Must it be domain specific to be tractable?
- ✓ How effective are informal tools?

### "Informal Interfaces Can Improve Human-Human Communication"

Come see some Informal UIs in 534 Soda  
this afternoon with:  
Richard Davis, James Lin, Chris Long, &  
Mark Newman