Tangibly Simple, Architecturally Complex

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Overview

- An introduction to the Palette, a “tangible” interface
  - reported at CHI ’99 in Pittsburgh
- Palette becomes CardGear
  - Launched in 2000 in Japan
- Evaluation
  - By FXPAL in 2001
  - A series of questions
  - Four-step process of evaluation
- Issues in tangibility
The Palette

Video introduction
Why “tangible”? 

- It is paper
- It can be manipulated
- It can be annotated
- It is flexible
Life After Research …

- Many positive queries resulting from demos
  - Mostly educators
- Release 1/27/00 by Fuji Xerox
- Modest sales through 2002
  - 54 Seats through direct sales to businesses
- Licensed to third party
  - Bundle with bar code reader
  - Exploring new marketing strategy
Our questions

• What is using the Palette really like?
  – Expert walkthrough

• What was the idea behind the Palette?
  – In depth interview with one of the designers

• Is the Palette actually being used?
  – Logged usage data
  – Interviews and detailed walkthroughs with 11 people (7 users, 3 non-users, 1 card creator)
  – Interview and debugging walkthrough with administrator

• How is the Palette being used?
  – Interviews with users
  – Interview with administrator
Usage data

- 404 Palette presentations (~3 per week)
- Presentations ranged from 10 to 40 slides
- Estimate 20 people used the Palette more than twice
  - 13 regular users, 5 infrequent users, 2 visitors
  - Most presentations given in the Lab
  - 3 “Road Trips”
Observations: General

• Methods of use
  – All cards vs. First card only
• Seldom reuse cards
• Decline in use over time
  – Still used when support provided
Observations: Pros

- Usually easy to create cards
- Easy to reorganize (overrides the linearity of presentation tools)
- Nice to swipe cards
- Easy to give to other people

*The benefits of paper*
Observations: Cons

- Doesn’t really fit into **whole** practice
  - making, giving, saving, changing presentations
- Different mental models
  - Card vs. slide in presentation
  - “What is my file called?”
- Many points of failure
  - Inheriting the vagaries of Powerpoint™
  - It’s all great till it falls apart
  - No feedback for users
- Most common reason for non-uptake
  - Peripheral paraphernalia (Scanner, Printer)

➤ Overall “distributed system” is brittle
Getting at the Whole Practice

• Edit, Save, Copy, Re-edit
Presentation
Getting at the Whole Practice

PowerPoint Slide Upload for Palette

Uploading the slides will print Palette card(s) and copy the slides to Kumo.

Print First Card
Only

PowerPoint File

To attach a file, click on the "Browse" button. Select "All Files (*)" in the field "Files of type" of the dialog box. Browse to and click on the file you want to copy and press "Open" to select the file.

- Find and upload presentation to Intranet
Getting at the Whole Practice

- Powerpoint file sent to Palette server process
  - Generates card file (Word™)
  - Applies many defaults (card layout, card size, card printer, folder where Powerpoint™ file copied in Presentation Room)
  - Sends card file to printer (Manual Feed Tray)
  - Deletes card file
Getting at the Whole Practice

- Check card stock in tray, Load tray
- Pick up Cards
Getting at the Whole Practice

- Check Palette Controller
- Restart if someone killed it
- Click ‘Hide’ button so someone not likely to kill it
Getting at the Whole Practice

• Swipe card
Life of a Slide

1. Slides as Edited Object
   - New Slide
   - Save

2. Slides in File
   - Slides in File
   - Convert
   - Print

3. Slides On Presentation PC
   - Slides in Card File
   - Print

4. Slides as Cards
   - Handle
   - Print

5. Slides as Notes
   - Scan

6. Slides as Controls
   - Project

7. Slides as Presented
Views of Palette’s workings

• Users to System: opaque
• Designers to System: “barnacle” design (inflexibility brought on by continued patching and redesign over legacy components)
• Administrator: Front stage, back stage

“Small” change to presentation practice required in fact many underlying things to changes
Presentation housekeeping

- Many copies
- Changing servers
- Palette turned out to be a one-use tool
- Last minute editing
- No support outside of building without lugging stuff around
Lessons from Feedback

- **Source of brittleness**
  - Multiple components relied upon that are **SHARED PUBLIC RESOURCES**
- **Requires more feedback about process**
  - Informative, expressive egg-timers
- **Single copies of files with sensible names**
  - Rapid access in conference room
  - vs. Accessibility to edit
Issues in “tangibility”

• Gulf of understanding
  – correspondence between physical and digital entities
  – appeal of direct manipulation

• Hidden dependencies
  – Don’t care what happens when it all works
  – But inform people what is happening when ‘debugging’
  – Dependency on printers, scanners, networks, processes in moments of stress
Issues in “tangibility”

• At what cost tangibility?
  – Set out to design a presentation appliance
  – Appliance implies encapsulation and independence
  – In fact, support of complex tasks requires a system of dependent parts
  – These are hidden from user
  – Interdependencies make brittleness

Does tangibility = system opacity?
How much should tangibility try to do?
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