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Short Talks: Tangibly simple, architecturally complex: evaluating a tangible presentation aid
Conference Extended Abstracts on Human Factors in Computer Systems April 2002

Tangibly Simple, Architecturally Complex

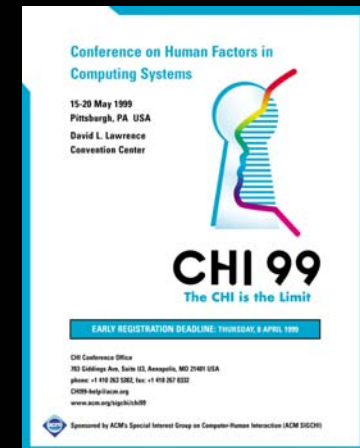
Elizabeth Churchill

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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



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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



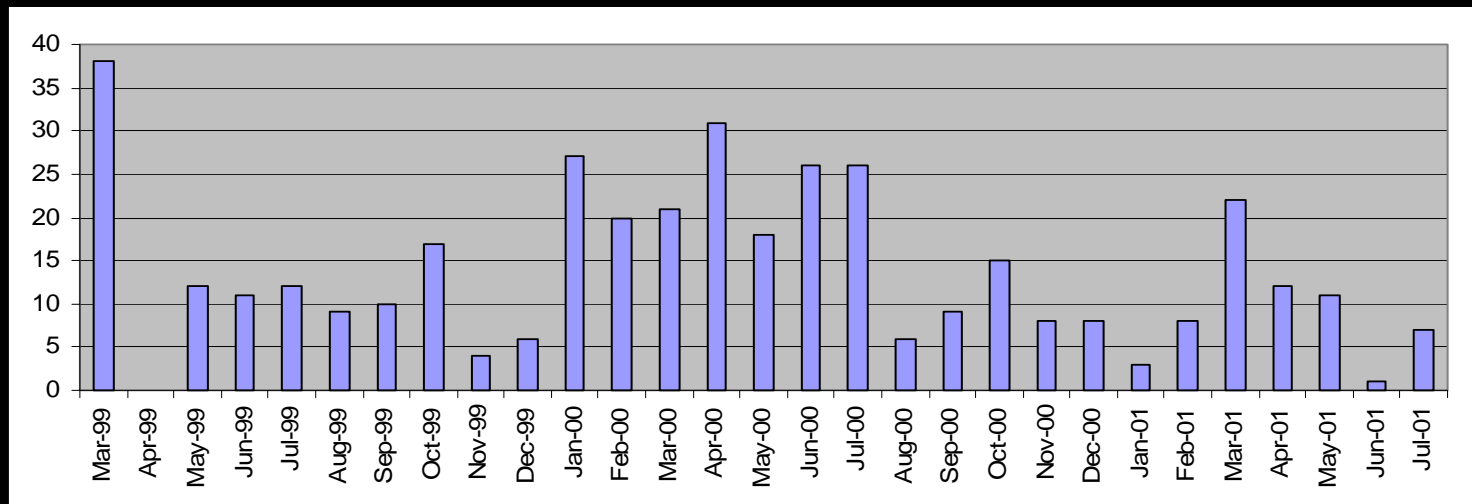
- What is using the Palette really like?
 - Expert walkthrough
- What was the idea behind the Palette?
 - In depth interview with one of the designers
- Is the Palette *actually* being used?
 - Logged usage data
 - Interviews and detailed walkthroughs with 11 people (7 users, 3 non-users, 1 card creator)
 - 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

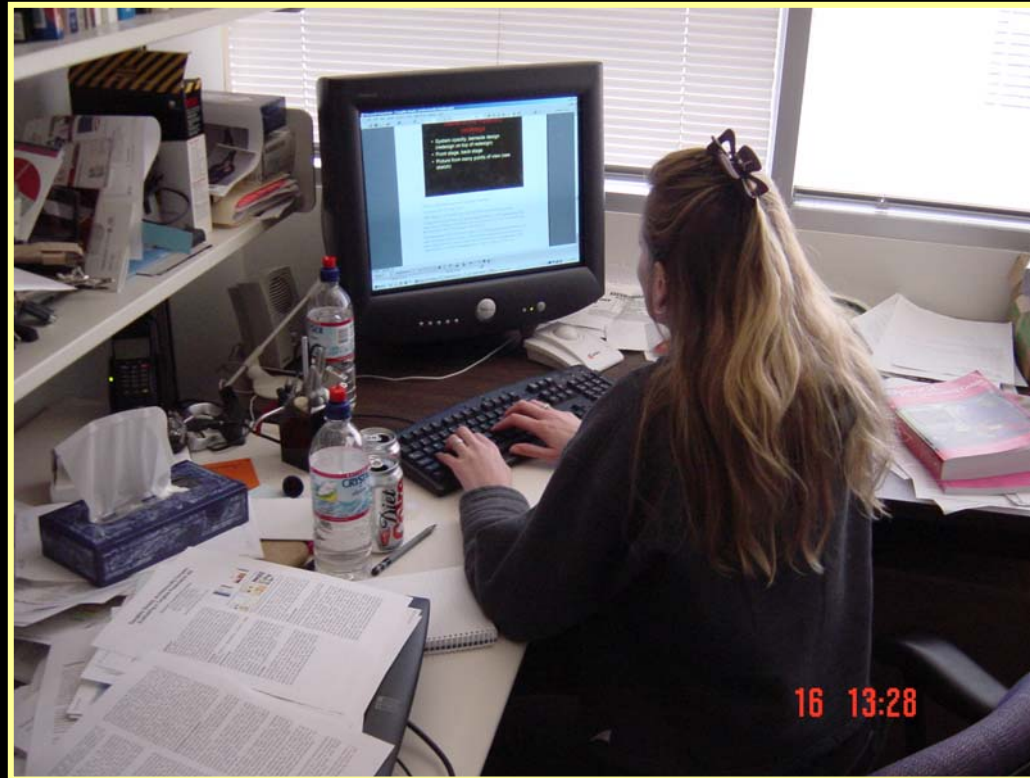
- Usually easy to create cards
- Easy to reorganize (overrides the linearity of presentation tools)
- Nice to swipe cards
- Easy to give to other people

The benefits of paper

Observations: Cons

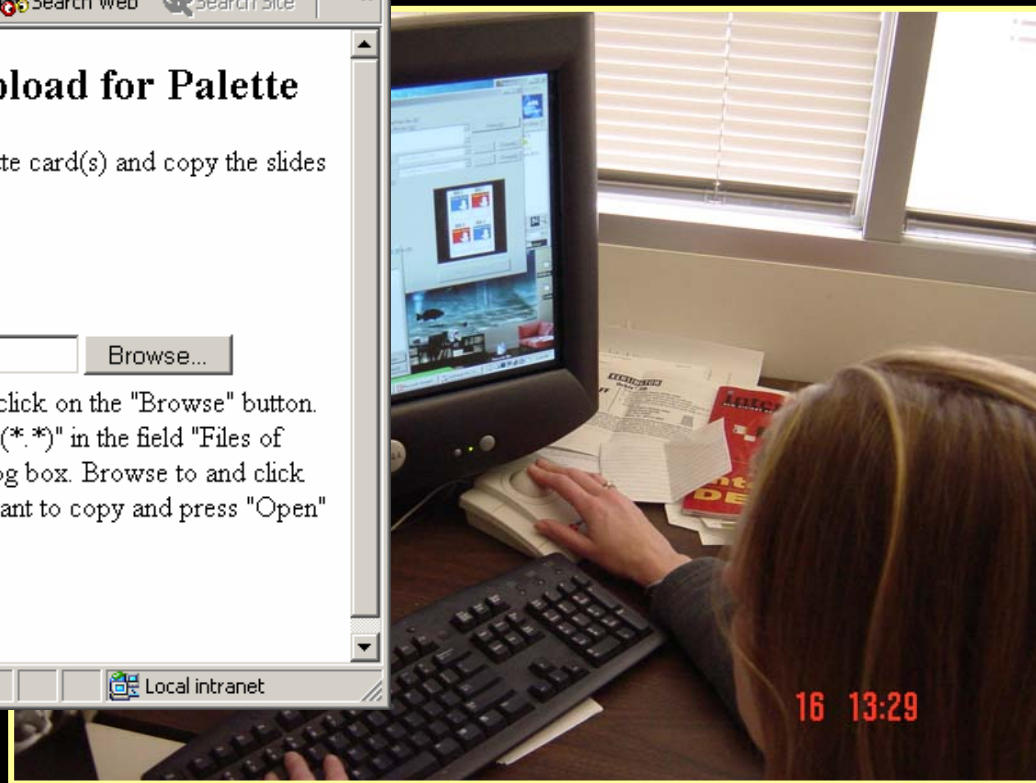
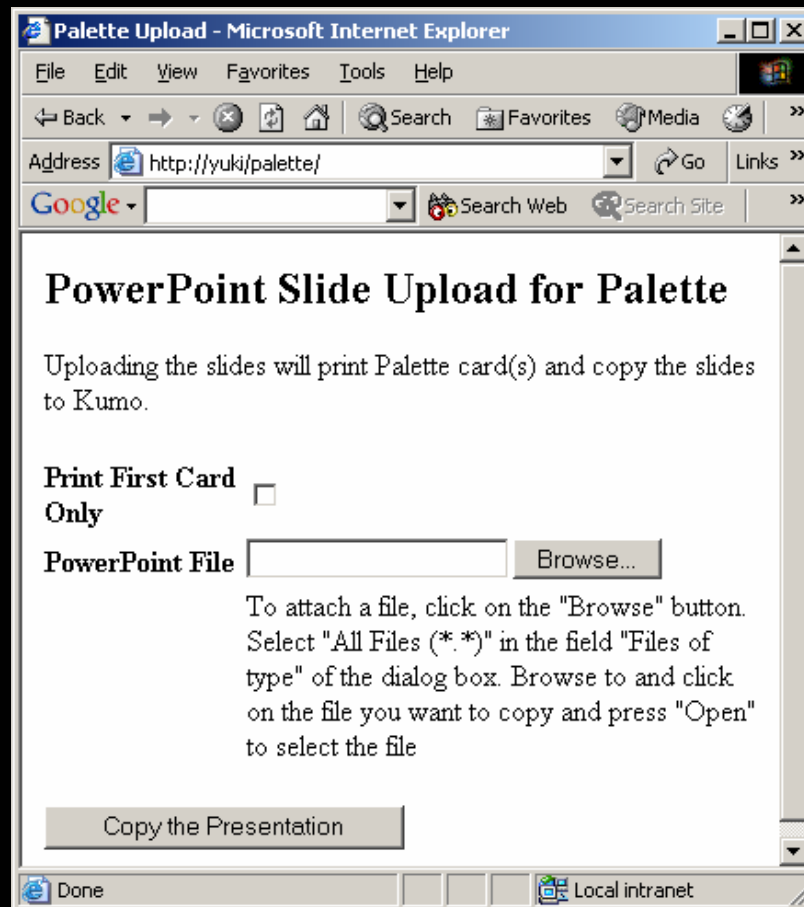
- Doesn't really fit into whole practice
 - making, giving, saving, changing presentations
- Different mental models
 - Card vs. slide in presentation
 - “What is my file called?”
- Many points of failure
 - Inheriting the vagaries of Powerpoint™
 - It's all great till it falls apart
 - No feedback for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

Getting at the Whole Practice



- Edit, Save, Copy, Re-edit
Presentation

Getting at the Whole Practice



- Find and upload presentation to Intranet

Getting at the Whole Practice



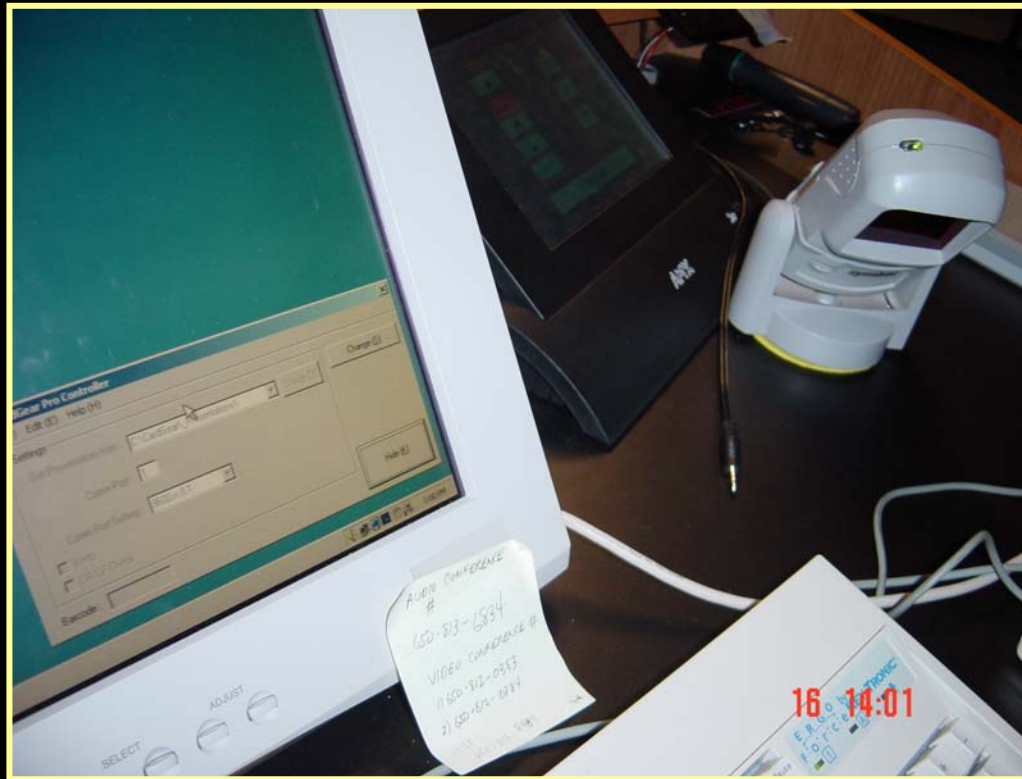
- Powerpoint file sent to Palette server process
 - Generates card file (Word TM)
 - Applies many defaults (card layout, card size, card printer, folder where Powerpoint TM file copied in Presentation Room)
 - Sends card file to printer (Manual Feed Tray)
 - Deletes card file

Getting at the Whole Practice



- Check card stock in tray, Load tray
- Pick up Cards

Getting at the Whole Practice



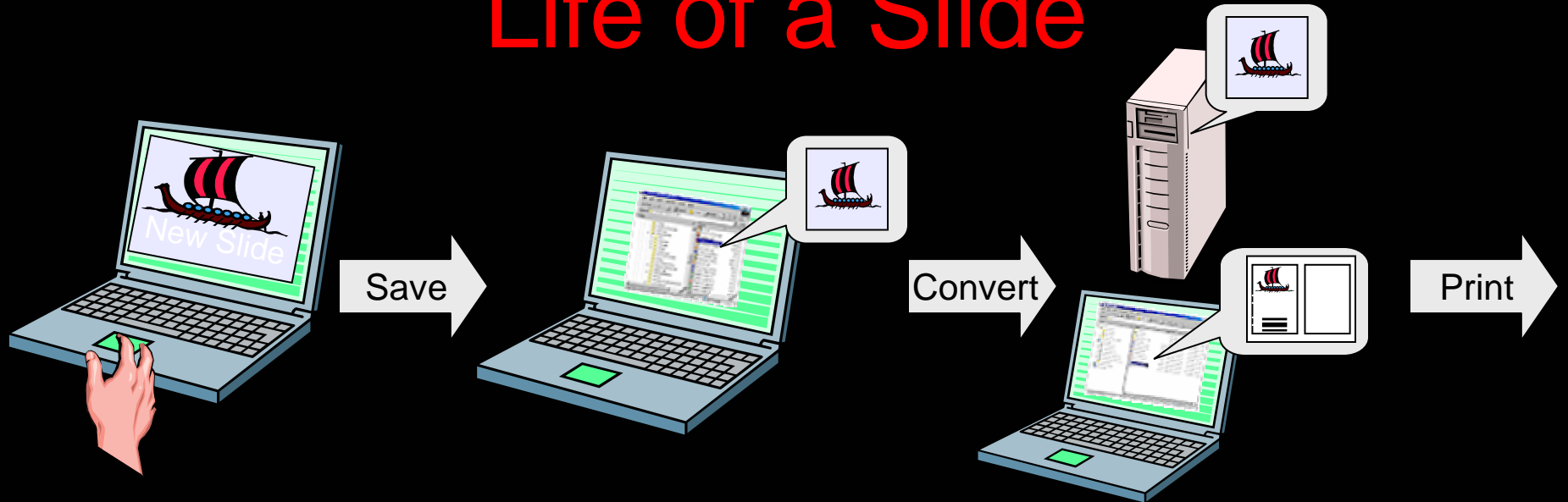
- Check Palette Controller
- Restart if someone killed it
- Click 'Hide' button so someone not likely to kill it

Getting at the Whole Practice



- Swipe card

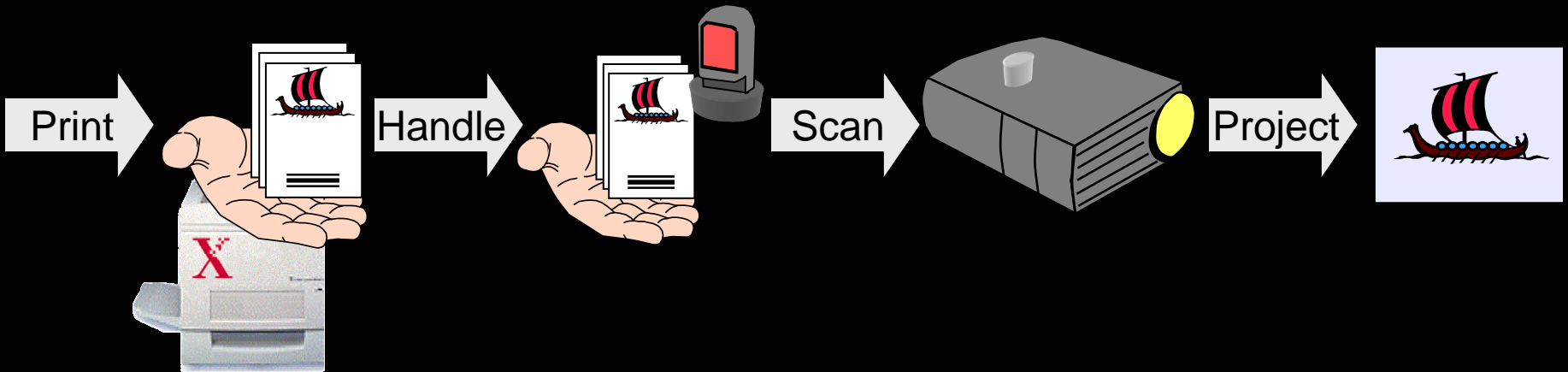
Life of a Slide



Slides as Edited Object

Slides in File

Slides On Presentation PC
Slides in Card File



Slides as Cards

Slides as Notes

Slides as Controls

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?

Acknowledgements and Contact info

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