

LFE Medieninformatik • Miriam Kranz

Applications for interactive public displays

Medieninformatik Hauptseminar
Sommersemester 2009
„Interactive Surfaces“





Outline

- **Introduction**
- **Application analysis**
- **Usability features**
- **Conclusion**

Introduction

Regular public displays



Distribution of centrally produced media content to a large audience

Interactive public displays



Media content can be manipulated, people become active consumers



Application analysis

- **CityWall**
- **PolarDefense**
- **Dynamo**
- **PlasmaPoster**

CityWall: explore images

Peter Peltonen et al. at Helsinki University of Technology and University of Helsinki



Application for large multi-touch displays installed in city centers

- Resize, rotate and move pictures
- Zoomable timeline



CityWall: explore images

- **Restricted interaction possibilities:**
 - Hands are only interaction tool
 - No possibilities to upload or download content
- **Study results:**
 - No instructions needed
 - Conflicts occurred
- **Identified usability features:**
 - Easy to understand
 - Conflict management

PolarDefense: interactive game

Matthias Finke et al. at University of British Columbia

Users interact with the game via SMS messages



Information display



Game display



PolarDefense: interactive game

- **Restricted interaction possibilities:**
 - Mobile phone is only interaction tool
 - No real possibilities to upload or download content
- **Study results:**
 - Animation drew attention to game
 - Instructions were easily understood
 - Mobile phone was an approved interaction tool
- **Identified usability features:**
 - Show interaction possibilities
 - Easy to understand
 - Avoid social embarrassment

Dynamo: collaborative work

Shahram Izadi et al. at University of Nottingham and University of Sussex



- Multiple users interact simultaneously on the same surface
- Share, display and exchange media

Dynamo: collaborative work

The screenshot shows the 'Dynamo' collaborative workspace interface. At the top, a 'public palette' contains icons for 'Create Note', 'Create Parcel', 'Browse Web', 'Web Cam', and 'Printer'. A 'sealed parcel' icon is labeled 'Parcel for Tom' with a text box: 'Hi Tom, here's the new proposal I've been working on... Any comments welcome. Just drop the latest version here when it's done. Ta Harry. Ta'. A 'telepointer' icon is labeled 'Parcel for Shoham' with a text box: 'Hi Shoham, here's the new proposal I've been working on... Any comments welcome. Just drop the latest version here when it's done. Ta Harry. Ta'. A 'carve regions' icon is labeled 'Parcel for Mia' with a text box: 'Hi Mia, here's the new proposal I've been working on... Any comments welcome. Just drop the latest version here when it's done. Ta Harry. Ta'. A 'private palettes' icon is labeled 'Parcel for Bob' with a text box: 'Hi Bob, here's the new proposal I've been working on... Any comments welcome. Just drop the latest version here when it's done. Ta Harry. Ta'. The main workspace contains a 'Dynamo Slideshow' window with the text 'DYNAMO information access and communications across heterogeneous displays in public spaces short talk for Lighthouse visit by Harry Brignull barrybr@cogs.susx.ac.uk (Dynamo Research Fellow)'. A 'Submission EQUATOR' window displays a project proposal. A 'SOCIALIZER' window displays a project proposal. A 'Google' window displays search results. A 'Web Cam' window displays a video feed of a person. A 'Parcel for Tom' window displays a map of Australia. A 'Parcel for Shoham' window displays a video feed of two people. A 'Parcel for Mia' window displays a video feed of a group of people. At the bottom, there are three user profile icons with 'Browse User', 'Email Me', and 'Edit Profile' buttons.



Dynamo: collaborative work

- **Plenty interaction possibilities:**
 - Interaction tools: keyboard, mouse, laptop, USB-Stick, camera,...
 - Possibilities to modify, upload and download content
- **Study results:**
 - Instructions for carve and drag were needed
 - Conflicts occurred
- **Identified usability features:**
 - Easy understanding of the application
 - Conflict management
 - Privacy control

PlasmaPoster: interactive community board

Elizabeth F. Churchill et al. at FX Palo Alto Laboratory



Interactive posterboards that facilitate informal content sharing between a group of people

- Content region
- Author information
- Overview thumbnails

PlasmaPoster: interactive community board



- **Interaction possibilities:**
 - Interaction tools: PDA's, web or hands
 - Possibilities to modify, upload and annotate content
- **Study results:**
 - Long term use
- **Identified usability features:**
 - Increases sense of community



Usability features

- **Attract attention:**
 - In modern cities peoples senses are overloaded with information
 - Passers-by need to notice the application
- **Show interaction possibilities:**
 - Users need to know how to interact with the system
- **Easy to understand:**
 - Applications are used for short period of time
 - Way of use can fit with existing practices



Usability features

- **Avoid social embarrassment:**
 - People fear failure and public exposure
 - Possible interaction tool: Mobile phone
- **Privacy control:**
 - Need to discern private from public information
- **Conflict management:**
 - Avoid conflicts
- **Increase sense of community**
 - People lose interest in an application with time
 - Build up a constant group of user



Conclusion

- **Summary:**
 - Multitude of different applications
 - Several usability features could be identified
- **Further research:**
 - Identification of additional features
 - Similar work on other types of applications
 - Development of further interaction techniques

Vielen Dank für ihre Aufmerksamkeit!





Sources

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