Social Navigation as a Model for Usable Security

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Background

- Bruce Schneier [15] has observed that “Security measures that aren’t understood and agreed to by everyone don’t work.”

- “The central concern here is that neither usability nor security can be added on to systems after the primary design work is done; rather, both need to be central aspects of the design effort.”
Overview

- Social Navigation
- Social Navigation and Security
- Example
- Discussion
Social Navigation

- Dourish and Chalmers – Running out of Space: Models of Information Navigation
  - Semantic navigation
  - Social navigation
  - Example
    - Tapestry system
    - “edit wear and read wear” Hill et al
Social Navigation

“I took the one less traveled by,
And that has made all the difference.” – Robert Frost
Application

Most visited

Collaborative Filtering

Recommendation Engine

Social Tagging
Overview

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Social Navigation and Security

- **Fundamental approach:**
  - Allow people to assess how a system matches their needs
  - Allow them to see the relationship between a system or information artifact and activities, either of their own or others.

- **Application = ‘space’**
- **People’s act = history of action displayed in the space**
- **Three approach:**
  - Show the history of a user’s action
  - Show patterns of conventional use
  - Show activities of others within a system
Overview

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Show Patterns of Use – two metaphor

- Good and Krekelberg’s study of potential security issues in the Kazaa peer to peer file sharing application
- Mander et al, ‘pile’ metaphor for the informal grouping of files
Show Patterns of Conventional Use (Folder)

- Tradeoff between security & sharing of personal data

- Clumsy user interface of Kazaa
  - Good and Krekelberg – users are unable to determine which files on their system were shared currently due to awkward treatment of folders by Kazaa interface.
  - No method to compare sharing level
Show Patterns of Conventional Use (Pile)

- Using Pile for Kazaa
  - Pile preview will increase user awareness on
    - Number of files being shared
    - Repercussion of selecting a folder to share
    - Types of files being selected for sharing.

- Design
  - Physical metaphor for shared or secure doc

- Extending the design to support social navigation
Overview

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- Example
- Discussion
Show activities of others

- System created – tidy
- More activity – messy
Overview

- **Social Navigation**

- **Social Navigation and Security**
  - Show the history of a user’s action
  - Show patterns of conventional use
  - Show activities of others within a system

- **Example**

- **Discussion**
Example

- Impromptu
Discussion

- Visualization based approach
  - Application as a space populated by user
  - Artifacts carry the evidence of activities over them

- Issues
  - How to cope with the varying level of trust on the recipient side?
  - Missing – Context
Thank you.