Who Gets to Know What When:

Configuring Privacy Preferences for an Awareness Application

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Motivation

- Privacy - Awareness Tradeoff
  - Understanding the point of balance
  - Empowering the users
- Privacy Configuration Burden
- Can we define effective defaults?
Outline

- MySpace
- Description of Study
- Findings
- Implications
MySpace

- Interactive visualization of the physical workspace
- Awareness of people, places, equipment
- Aspects of awareness:
  - Location, Calendar, IM, Availability
MySpace: Screenshot
MySpace: Contact List
E-card: One-click communication
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Study

- 45 minutes - 1 hour
- N = 36
  - 24 regular employees, 12 interns
- No previous experience with MySpace
- Compensation: $5 Cafeteria Gift Certificates
Study: Steps

- Demo
- 10 Representative Tasks
- Choosing Configuration Mode
- Configuring Permissions
- Post-study Questionnaire
  - MySpace, Inherent Privacy & Trust
- Brief, semi-structured exit Interviews
Configuration Modes

- Global
  - Single set of permissions
- Team
  - "My Team" vs. "Rest"
- Groups
  - User-defined groups
- Individuals
  - User-defined contacts

More Control
More Effort
## Permission Levels

<table>
<thead>
<tr>
<th></th>
<th>None (1)</th>
<th>Low (2)</th>
<th>Mid (3)</th>
<th>High (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>No Info.</td>
<td>Building</td>
<td>Floor</td>
<td>Room</td>
</tr>
<tr>
<td><strong>Calendar</strong></td>
<td>No Info.</td>
<td>Busy</td>
<td>Titles</td>
<td>Details</td>
</tr>
<tr>
<td><strong>IM</strong></td>
<td>No Info.</td>
<td>Online</td>
<td>Status</td>
<td>Details</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>No Info.</td>
<td>Available</td>
<td>Scale</td>
<td>Details</td>
</tr>
</tbody>
</table>
## Scenarios

<table>
<thead>
<tr>
<th></th>
<th>Business Hours</th>
<th>After-hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>At Work</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Working from Home</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Experimental Conditions

- No Disclosure
- Disclosure but No Feedback
  - List of all pieces of context available to mySpace
- Disclosure and Feedback
  - List of all pieces of context available to mySpace
  - Feedback & confirmation of permissions in tabular form

Random assignment
(Controlled for gender and employment status)
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Strong preference for Grouping

- 25/36 picked "Groups" mode
  - 3 more indicated preference for groups
- Balancing control with effort
  - Flexibility to create a 1-person group
- 3-5 Groups (Mode = 4)
  - May be higher in actual use
  - Common groups:
    - Team, Family, Friends, Collaborators, Managers, "Rest"
Group differences

- Concentric Circle Pattern
  - Lower permissions away from the core
- "Team" and "Family" get similar (high) permissions
- "Rest" group is granted very low permissions (1 or 2)
Aspects of Awareness

- Sensitive to different extents
  - Indicated by magnitude of change between work/home or bus/non-bus hours
- Location appears most sensitive
- IM appears to be least sensitive
Magnitude of change

- Large changes for location
- Relatively little change for IM
Business vs. After hours

- More privacy desired after-hours from "work contacts" regardless of whether at work or home
- Surprising because organization culture of "flexible hours"
Effect of Disclosure & Feedback

- Disclosing a detailed list of all pieces of personal context did not result in more conservative permissions
- More sharing of availability awareness with team with disclosure
  - Similar trends for other aspects/groups
- No observed effect of feedback
  - Non-concurrent, tabular interface not effective?
Other Findings

- No major effects of: gender, nationality, employment status, inherent attitudes, place (work vs home)
- Hierarchical relationships may involve higher privacy concerns
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Implications for Design

- Grouping for "control"
  - Beyond mere "organization"
- Given enough control, users are comfortable disclosing high-levels of information appropriately
  - Team ~ Family during business hours
- Sensitivity varies
  - More control over "sensitive" aspects
  - Incorporate IM within other apps.
- Boundaries are important
  - Opportunities for "automation"
Implications for Design

- Getting defaults right can be greatly helpful
  - Reduced burden
  - Appropriate starting point of balance
- Templates could reduce burden
  - "Work", "Home", "Team", "Family"
- Transparency may build trust
  - Disclosure, feedback and visibility
Limitations and Future Work

- Lab-setting
  - To what extent permissions reflect real preferences
- Evolution of settings
  - If & how permissions change over time
- Sample
  - Bias: Education, Proficiency with computers
  - Size

Longitudinal and Comparative studies are needed for further exploration
Acknowledgements

- Jeff Elliott
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Questions/Discussion

For More Information:
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