

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

Details:

Show me:

- Meeting rooms
- Empty now
- Rest rooms
- Stairwell
- Elevators
- Printers
- MyTeam

Site Services

- Unassigned rooms

IT Support

- Service requests
- Assets (floor 3S)

My Availability:

4 (High)

Using Computer
Probably in Office

Search by:
Name(first last) [Submit]
Internet email address [Submit]

Input room number for search: [Submit]

Select information type:

- BluePages - personnel
- GrapeVine - location

Set Alert

GrapeVine Location Details:

Building: [Text Box]
Floor: [Text Box]
Area: [Text Box]
Last update: [Text Box]

Zoom In **Zoom 4x**

MySpace: Contact List

The screenshot displays a software interface for a contact list, titled "MySpace: Contact List". The main area features a floor plan with several icons representing contacts. A vertical sidebar on the left shows floor numbers 1 through 4, with floor 2 highlighted. Below the floor plan are search filters and controls:

- Search by:** Name(first last) and Internet email address, each with a "Submit" button.
- Input room number for search:** A text field with a "Submit" button.
- Select information type:** Radio buttons for "BluePages - personnel" (selected) and "GrapeVine - location".
- Zoom In** and **Zoom 4x** buttons.
- Set Alert** button.

On the right side, there are several sections:

- Show me:** A list of checkboxes for "Meeting rooms", "-- Empty now", "Rest rooms", "Stairwell", "Elevators", and "Printers".
- MyTeam:** A checked checkbox with the text "5 colleagues on floor 2" and "2 colleagues on floor 3".
- Site Services:** A checkbox for "Unassigned rooms".
- IT Support:** Checkboxes for "Service requests" and "Assets (floor 35)".
- My Availability:** A small profile picture, the text "My Availability:", a red "4 (High)" status indicator, and the text "Using Computer" and "Probably in Office".

E-card: One-click communication

Microsoft Internet Expl...

Sameer Patil
at [redacted]
Floor 2
On the computer
Sameer's time 3:50 PM

Availability:
2 (Low)

Doing Email
Probably in Office
Talking near computer for 3 minutes



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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

	None (1)	Low (2)	Mid (3)	High (4)
Location	No Info.	Building	Floor	Room
Calendar	No Info.	Busy	Titles	Details
IM	No Info.	Online	Status	Details
Availability	No Info.	Available	Scale	Details



Scenarios

	Business Hours	After-hours
At Work		
Working from Home		



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)



Outline

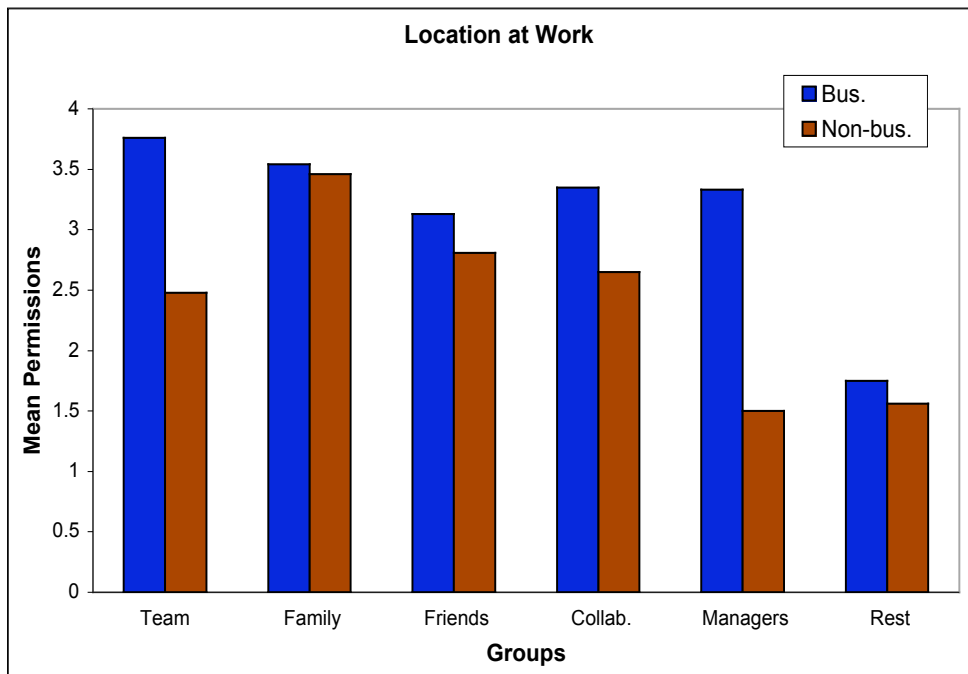
- MySpace
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Strong preference for Grouping

- 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



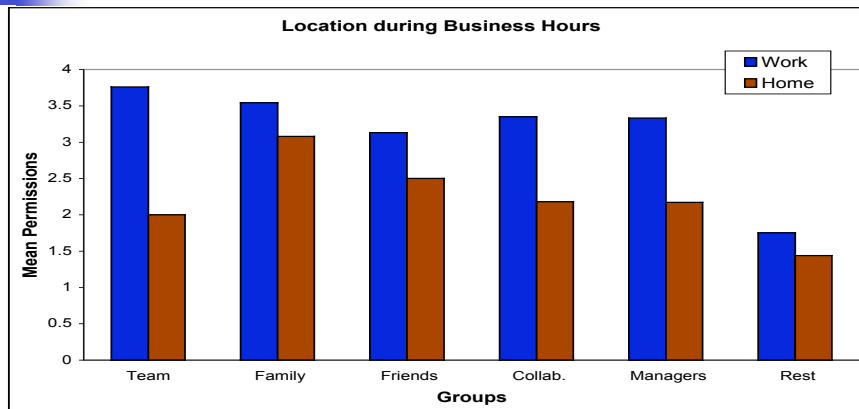
- Concentric Circle Pattern
 - Lower permissions away from the core
- "Team" and "Family" get similar (high) permissions
- "Rest" group is granted very low permissions (1 or 2)



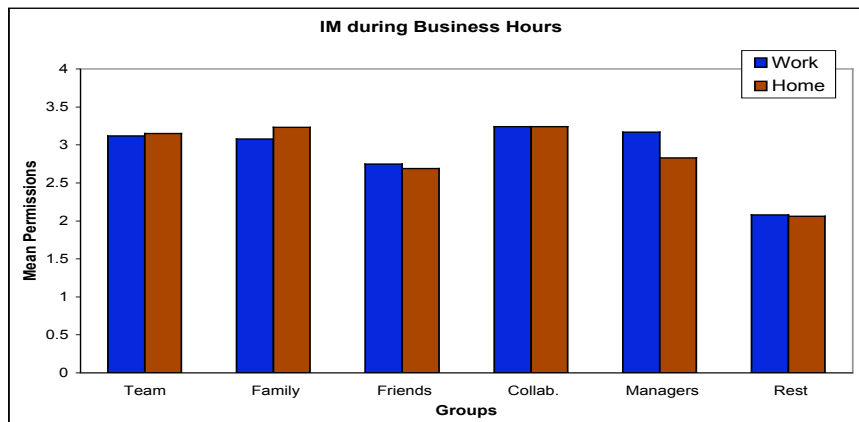
Aspects of Awareness

- 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

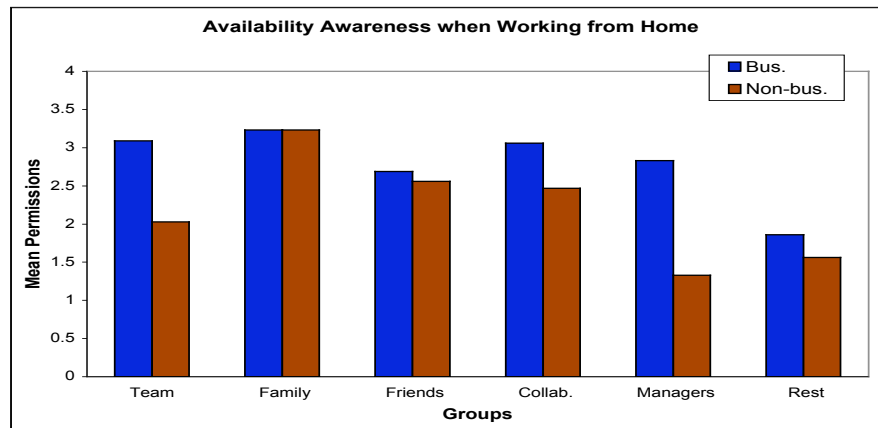
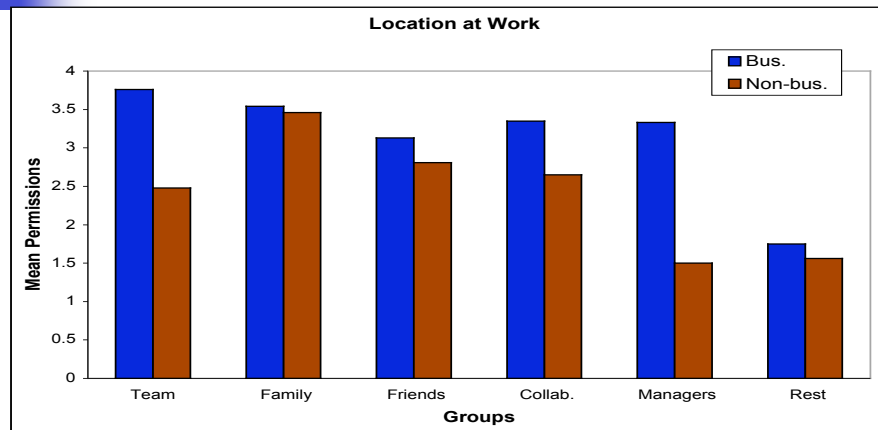


- Large changes for location



- 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



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Questions/Discussion

- For More Information:

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