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TU/e technische universiteit eindhoven

Personalization & Privacy: Empirical Study of Disclosure Behavior

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Presentation
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Presentation Overview

- PhD Project - User Profile Management
- Music Recommender Study
 - Set up
 - Preliminary Results
 - Conclusions
- Discussion / questions

PhD Project - User Profile Management

- Personalised applications require information about the user
- Various processes involved: Capturing, Storing, Combining, Using etc.
- What sensitivities do people experience with regard to user profiling?
- What expectations/perceptions do users have of system with regard to their privacy? (now & future)
- What factors contribute to users trust in personalised systems?
- Develop services that exploit benefits of personalization, without threats to privacy

The Study - Background

- Privacy difficult to study
 - Abstract personal experience
 - Attitudes and behaviour not in line
- Studying privacy by triangulation
 - Combination of different research methodologies
 - Focus on actual behaviour and underlying attitudes
 - Better understanding of both privacy perception and experience
- Actual use personalised application under specific conditions

Music Recommender Study - Set Up

- Music Recommender application
 - 2 types of personal info (balanced)
 - Personality Traits
 - Music Preferences
 - 3 situations for both types of info (fixed)
 - Default: Local use of info
 - Choice*: Collaborative filtering
 - Choice*: Show profiles to others
- Within-subject design

* Options: No disclosure, Anonymous disclosure, Disclosure incl. identity



Music Recommender Study - Set Up

- Methodology
 - Observation (logging): actual use of application without reference to privacy
 - On-line questionnaire: reasons, general attitudes
 - In-depth interview: in depth explanations

Short Test Of Music Prefs (STOMP)

For the following items, please indicate your basic preference level for the genres listed using the scale provided:

Classical	<input type="text"/>
Blues	<input type="text"/>
Country	<input type="text"/>
Dance/Electronica	<input type="text"/>
Folk	<input type="text"/>
Rap/hip-hop	<input type="text"/>
Soul/Funk	<input type="text"/>
Religious	<input type="text"/>
Alternative	<input type="text"/>
Jazz	<input type="text"/>
Rock	<input type="text"/>
Pop	<input type="text"/>
Heavy Metal	<input type="text"/>
Soundtracks/theme songs	<input type="text"/>

1	2	3	4	5	6	7
Strongly dislike			Neither like, nor dislike			Strongly like



Ten Item Personality Measure (TIPI)

Here are a number of personality traits that may or may not apply to you. Indicate next to each statement the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

I see myself as:

Extraverted, enthusiastic	<input type="text"/>
Dependable, self-disciplined	<input type="text"/>
Open to new experiences, complex	<input type="text"/>
Conventional, uncreative	<input type="text"/>
Calm, emotionally stable	<input type="text"/>
Critical, quarrelsome	<input type="text"/>
Anxious, easily upset	<input type="text"/>
Reserved, quiet	<input type="text"/>
Disorganized, careless	<input type="text"/>
Sympathetic, warm	<input type="text"/>

1	2	3	4	5	6	7
Disagree strongly	Disagree moderately	Disagree a little	Neither agree, nor disagree	Agree a little	Agree moderately	Agree strongly

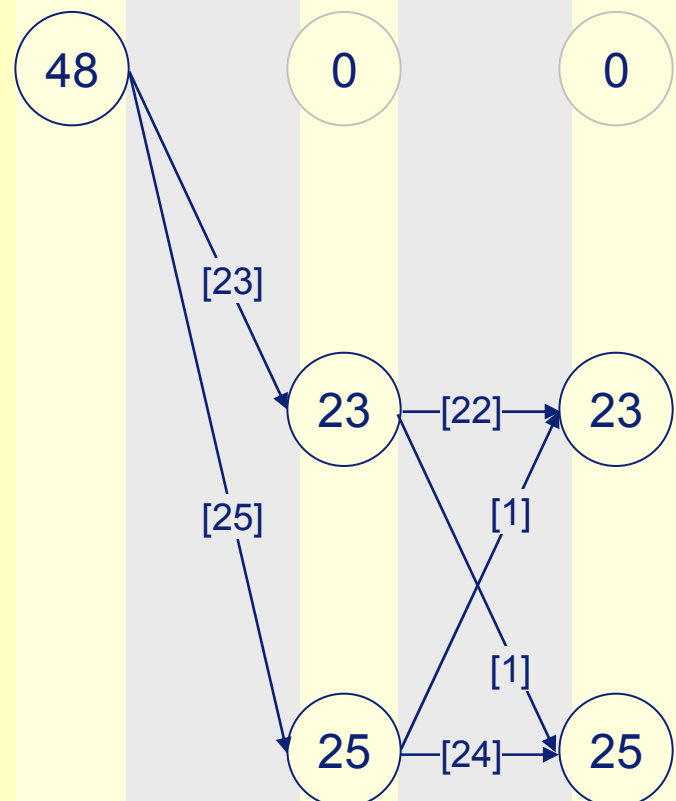
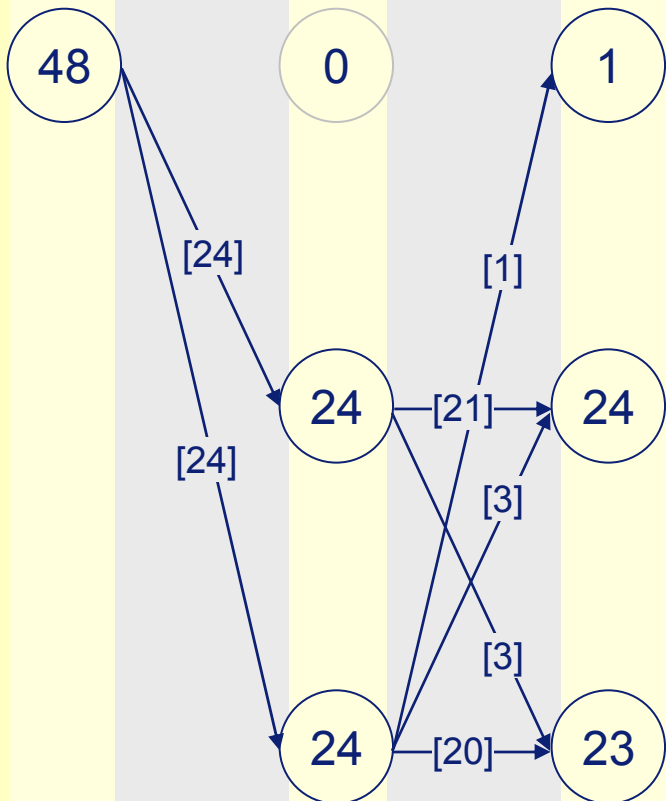


Music Recommender Study - Results

- Participants
 - 48 participants, mostly male
 - Age ranging from 18-50 (average 26)
 - Interested in music
 - 45% owns over 100 CD's
 - 75% owns over 200 MP3 songs
 - 66% listens frequently to music when using computer
 - 21 interviews conducted

Transition-point recommender source

Use Level	Music preferences			Personality Traits		
	Local use	Local use / compare	Local / compare / show	Local use	Local use / compare	Local / compare / show
No disclosure	48	0	1	48	0	0
Anony- mous disclosure	STOMP TEST			TIP INVENTORY		
Disclosure including identity info						



Music Recommender Study - Results

- Most participants stick to chosen level of disclosure
 - 44% chose ‘anonymous disclosure’ in all situations
 - 42% chose ‘disclosure incl. identity’ in all situations
 - 15% did vary between situations
- Based on disclosure behavior only small difference in sensitivity between:
 - personality traits & music preferences
 - collaborative filtering & showing directly to others

Music Recommender Study - Results

- Factors influencing disclosure behavior
 - Benefits in return for disclosure
 - Costs involved
 - (perceived) Sensitivity of the information
 - Which other people have access to information (size group, familiarity of people)
 - Amount & clarity of information about use of information and access by others
 - Relevance of the information to the goal/purpose

Music Recommender Study - Results

- Discrepancy between behavior and attitudes
 - No difference in disclosure, yet personality traits are considered more personal
 - 44% of participants worry about disclosing personality traits to other people, only 10% worry about music preferences
 - Lack of information or unclear information mentioned, but no action was undertaken

Music Recommender Study - Results

- Participants were not informed about the aim of the study and interest in privacy experience.
- No difference in disclosure between four situations, possibly similar level of privacy concern.
- In questionnaire and interviews people did distinguish between four situation, possibly more aware of privacy issues.
- Effect of sensitizing towards privacy needs to be investigated further
 - Analysis of qualitative data and relation with disclosure behavior.

Music Recommender - Conclusions

- More worries about personality trait disclosure than music preference, yet disclosure is equal.
- If users persist with initial disclosure, then initial trust towards systems is crucial and perhaps more important than factors like expected cost & benefits.
- The effect of drawing attention towards privacy may be important as well and is an important issue for system design.

Questions?



Thank You!

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