Getting Personal: Personalization of Support for Interaction with Information

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Adaptation and Personalization

- Personalization of IR is a subset of Adaptive IR
  - Adaptive IR may include adaptation of system features based on non-user factors
  - Personalization of IR is explicitly concerned with user-based factors
- Personalization may be the more interesting, more difficult, and more fruitful approach

Personalization: What's the Goal?

- To make the user's interaction with information as effective and pleasurable as possible
- To tailor the user's interaction with information to the user's characteristics, preferences, the specific circumstances of the interaction, and the user's goals

Implication of Personalization

- Systems are tailored to individuals (or groups)
- Inherent contradiction between goals of effective access for all, and effective access for one, or a few
- Resolution of this contradiction is a major problem for the personalization agenda

Personalization: The (Modeling) Past

- Taylor and the reference interview
- Dervin and sense-making
- Belkin; Belkin, Oddy & Brooks, ASK
- Wersig, et al., MONSTRAT
- Croft & Thompson, I^{3}R
- Vickery & Brooks, PLEXUS
- Distributed Expert-Based Information Systems

Personalization: The Problems with the (Modeling) Past

- Eliciting the information needed for the models

- Models are (relatively) static

- Models are inherently uncertain

- Interaction is not an intrinsic property of the modeling agenda

Personalization: The (Interactive) Past

- Studying the interaction between user of system, and intermediary
  - Taylor; Ingwersen; Belkin, Oddy & Brooks; Belkin, Seeger & Wersig
- Problems with this approach: Functionality may be correct, but ignores direct interaction with information
  - Nordlie addressed this problem to some extent

Personalization: The Present

- Depends upon group, as well as individual, behavior

- Based primarily on evidence from past and current interactions

- Studies (systems) typically address only one facet of personalization

Facets of Personalization

- *Relevance/usefulness/interest*
- *Task*
- *Problem state*
- *Personal characteristics*
- *Personal preferences*
- *Context/situation*

Relevance, etc.

- Implicit evidence (Kelly & Teevan)
  - Time on "page"
  - Click-through
  - Previous uses
  - Others like the interactant
- Explicit evidence
  - Relevance feedback (of various sorts)

Task

- "Everyday" or "leading" or "work" task
  - Complexity, difficulty, "type" (Bystrom, et al.)
- Information seeking task
  - Choice of strategies, sources (Bates, Pejtersen, berrypicking)
- Information searching task
  - Moves, shifts (Bates; Xie)

Problem State

- What has been done before
    - Previous searches
- Stage in the Problem Solving Process (Kuhlthau; Vakkari)
- What is being done now
    - Immediately past behavior in searching, other concurrent activities

Personal Characteristics

- Knowledge
  - of topic, of task
- Demography
  - gender, age
- Individual differences
  - Cognitive abilities
  - Affect

Personal Preferences

- For types of interaction
  - Mixed or single initiative
- For styles of interaction
  - Display, navigation
- For support for interaction
  - Active, passive
  - Integrated, separate
- For types of information
  - Genre, level

Context, Situation

- Location
  - Physical environment
  - Mobile, static
- Salience
- Urgency
- Time
  - of day, of week, of month, of season, …
- Other interactants
  - Group conditions
- Social norms

Overall Goals for Personalization

- Determining significant aspects of each facet
- Determining means for identifying these aspects
- Determining means for implementation of support
- Integrating all facets of personalization into single system frameworks

Progress toward these Goals

- A good number of studies of single facets
- Some evidence for significance of different aspects of facets
- Some work on identifying significant aspects
- Some work on implementing understanding of aspects in system support
- Only a very few studies on integrating several facets of personalization

The Future

- Personalization of support for interaction with information is clearly the next significant step for achieving effective and pleasurable interaction
- There is much to be done, with great opportunities for research
- The type of research which needs to be done is extremely difficult, and therefore likely to be a lot of fun
- This workshop will help put us on the right paths

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