Explaining Social Recommendations to Casual Users: Design Principles and Opportunities

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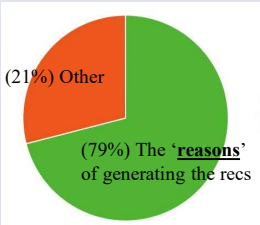
Introduction

- The need to design and build explainable recommender interfaces is increasing rapidly.
- Explanations have been shown to be useful for obtaining system transparency and trust [1].
- Little is known about how to design explanation interfaces for **casual (non-expert) users** to achieve different explanatory goals.
- We conducted an international (across 13 countries) online survey of 14 active users of a social recommender system.
- This study captures user feedback in the field and frames it in terms of design principles and opportunities.

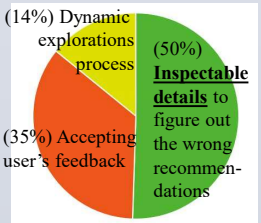
Initial Analysis

Survey Question:
How can an explanation function help you perceive system…

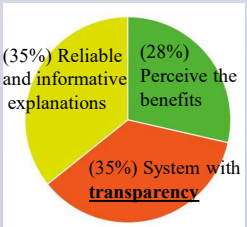
1. Transparency



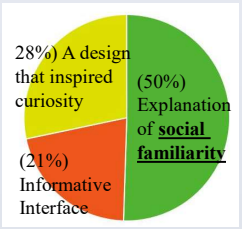
2. Scrutability



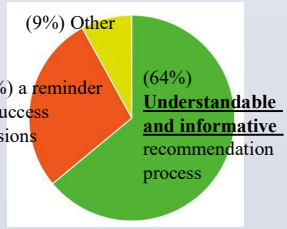
3. Trust



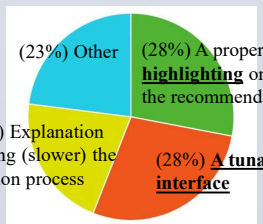
4. Persuasiveness



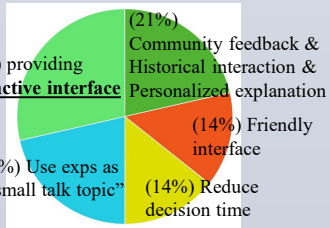
5. Effectiveness



6. Efficiency



7. Satisfaction

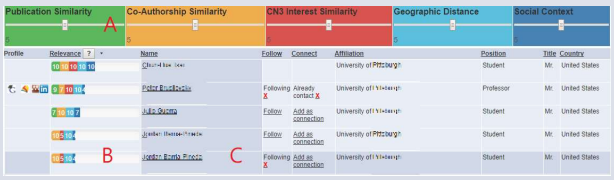


Methodology: International Online Survey

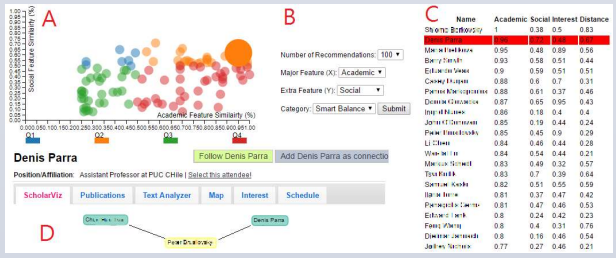
- We conducted an online survey to collect necessary demographic information and self-reflection about how to design an explanation function in **seven explanatory goals** [2].
- We targeted the users who had created an account and casually (not frequently) interacted with the Conference Navigator system [3].
- We sent out 89 letters, and a total of 14 participants (7 female) replied to create the pool of participants for the user study.
- The participants were from 13 different countries; their ages ranged from 20 to 40 (M=31.36, SE=5.04).

Discussion & Design Opportunity

- The explanatory goals are not independent of each other but are context-dependent.
- The user always prefers a visualized explanation, but this may not be reflecting on better usability.
- The tunable/inspectable interface can be used as explanation functions.
- The explanation is not always beneficial, e.g., it may prolong (delay) the decision process.



Design Sample 1: The design of the Relevance Tuner: (a) Relevance Slides; (B) Stackable Score Bar; (C) User Profiles. The user can inspect the recommendations with multi-relevance dimensions while controlling the weightings.



Design Sample 2: The design of Scatter Viz: (A) Scatter Plot; (B) Control Panel; (C) Ranked List; (D) User Profile Page. The user can select (or inspect) the recommendations with two relevance dimensions in the scatter plot.

References

1. Pu, Pearl, and Li Chen. "Trust-inspiring explanation interfaces for recommender systems." *Knowledge-Based Systems* 20.6 (2007): 542-556.
2. Tintarev, Nava, and Judith Masthoff. "Explaining recommendations: Design and evaluation." *Recommender Systems Handbook*. Springer, Boston, MA, 2015. 353-382.
3. Tsai, Chun-Hua, and Peter Brusilovsky. "Providing Control and Transparency in a Social Recommender System for Academic Conferences." *Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization*. ACM, 2017.