User-heterogeneity in Collaborative Search-Teams

Presentation of a PhD-Project
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Outline

• Collaborative Information Seeking
  - Definition
  - Trigger and Examples
  - State of the Art

• User-heterogeneity

• Goals

• Preliminary Thesis

• Research Questions

• Next Steps
“ [...]a group of participants intentionally working together in an interactive manner for a common goal [...]”
(Shah 2010, S.96)

“ [...] the activities that a group or team of people undertakes to identify and resolve a shared information need [...]”
(Poltrock et al. 2003, S. 239)
Collaborative Information Seeking – Triggers and Examples

- Situations which call for CIS instead of individual searches are usually complex and involve searching through several sessions.
- Examples for CIS- Triggers are:
  - Complex Tasks
  - Lack of Expertise
  - Lack of immediately available information

- Examples for areas in which CIS occurs:
  - Emergency Department/Hospital (Reddy et al. 2008)
  - Scientific Research Teams (Spence et al. 2005)
  - Military Context (Sonnenwald & Pierce 2000)

- CIS is a relatively young research field – many aspects are still understudied.
Collaborative Information Seeking - State of the Art

- Variety of tools for collaborative Information Seeking (CIS)
  - Usefulness? Users prefer established and familiar tools for CIS, i.e. Email, telephone, smart phone ...
  - Tools for CIS are inadequately evaluated

- Surveys and Experiments on CIS in different Domains, i.e. Healthcare, Military context ...
  - Main subjects: approaches and appearance

- Surveys and Experiments on CIS-triggers
  - Which factors trigger CIS?
Collaborative Information Seeking - State of the Art II

• Open questions in CIS Research:

  • What tools are required to enhance existing methods of collaboration, given a specific domain?
  • How to evaluate various aspects of collaborative information seeking, including system and user performance?
  • How to measure the costs and benefits of collaboration?
  • What are the information seeking situations in which collaboration is beneficial? When does it not pay off?
  • How can we measure the performance of a collaborative group?
  • How can we measure the contribution of an individual in a collaborative group?
  • What sorts of retrieval algorithms can be used to combine input from multiple searchers?
  • What kinds of algorithmic mediation can improve team performance? (Shah 2012)
User-heterogeneity

- People working or searching together in teams are not a homogenous mass but individuals.

- So far there exist no studies in regards to user-heterogeneity in collaborative search teams.

- Assumption: depending on inter alia personal traits people behave variably in teams, i.e. have a different affinity to team-work and team-building, behave differently in teams, have different ways to communicate with each other and so on.
Goals

• Identify influences connected with personality on team performance and collaborative search
• Deviate Search strategies from the findings
• Deviate recommendations and support measures for the design of collaborative search
• Development of a model which implements searcher-heterogeneity in regards to search role and preferred search strategy
Research questions

• How do Teams organize collaborative search?
  • Which Search Strategies are carried out?
  • Which resources are used?
  • What kind of processes can be examined?

• How is Collaborative Search shaped?
  • Which keywords are used?
  • How do people discuss and compare search results?
  • How can the quality of search results be measured?
Research questions II

• Is it possible to examine a certain behavior in CIS which is connected with the personality of searchers?
  • Do there exist roles or personas which are carried out during CIS?
  • If there are such roles how do they, in connection with personality traits, shape their search?
  • In which way interact different personalities during CIS?

• Do the findings lead to a new model of CIS?
  • Is it possible to integrate user-heterogeneity in this model?
  • Is it possible to expand existing models and integrate CIS-structures?
Preliminary Thesis

- There exist differences in the search behavior of individuals when they search collaboratively.
- Personality of searchers does have an influence on the search behavior.
- Personality of searchers does have an influence on team performance.
- Attitude and affinity towards Teamwork have an influence on search performance in collaborative search scenarios.
Future Plans

• Online Survey of CIS in academic and collegiate teams
  • Survey to collect basic data in regards to frequency and implementation of CIS and personal trait influences on teamwork

• User Study
  • Examination of CIS in collegiate teams

• Diary Study
  • Still open
References


Poltrock, Steven; Grudin, Jonathan; Dumais, Susan; Fidel, Raya; Bruce, Harry; Mark Pejtersen, Annelise (2003): Information Seeking and Sharing in Design Teams. In: GROUP '03 Proceedings of the 2003 international ACM SIGGROUP conference on Supporting group work.


