Let’s Search Together! : Collaborative Web

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Collaboration

Often we need more than one hand

Sometimes more than one brain

“Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations”
James Suroewicki
Collaboration in WWW can be used:

Collaborative tagging, Favorite assignments

Nederland, netherlands, holland, dutch Rotterdam, wielrennen, cycling, duck le grand depart, tour de france, Reklame, caravan, Funny Fotos
Collaboration

Collaborative work needs to be managed efficiently

Kasparov won against the world

http://spectrum.ieee.org/computing/hardware/multicore-is-bad-news-for-supercomputers
Collaboration

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversity of opinion</td>
<td>Each person should have private information.</td>
</tr>
<tr>
<td>Independence</td>
<td>People's opinions aren't determined by the opinions of those around them.</td>
</tr>
<tr>
<td>Decentralization</td>
<td>People are able to specialize and draw on local knowledge.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Some mechanism exists for turning private judgments into a collective</td>
</tr>
</tbody>
</table>
Collaborative Search:

- Identify Information need
- Search process
- Save/Bookmark
- Annotate/Organize

How to support users by collaborative searching?
- Ideas
- Tools (Web 2.0)

7 minutes
What are the typical collaborative search tasks?

- Watched over someone’s shoulder as he/she searched the Web, and suggested alternate query terms.
- E-mailed someone links to share the results of a Web search.
- E-mailed someone a textual summary to share the results of a Web search.
- Called someone on the phone to tell them about the results of a Web search.

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Around 90% of Microsoft employees are engaged in collaborative search activities.

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Software support for Co-located search (CoSearch).

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<table>
<thead>
<tr>
<th>Qualitative criteria</th>
<th>5 point Likert scale (5=strongly agree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was CoSearch easy to use?</td>
<td>3</td>
</tr>
<tr>
<td>Were the colors useful?</td>
<td>4.5</td>
</tr>
<tr>
<td>Was the query queue useful?</td>
<td>4</td>
</tr>
<tr>
<td>Were color tabs useful?</td>
<td>4</td>
</tr>
<tr>
<td>Mobile view useful?</td>
<td>4</td>
</tr>
<tr>
<td>I would use CoSearch at work and in the school</td>
<td>4</td>
</tr>
<tr>
<td>I would use CoSearch at home</td>
<td>3.5</td>
</tr>
</tbody>
</table>
WeSearch: Collaborative Sensemaking (Hardware support)

WeSearch: Collaborative Sensemaking

<table>
<thead>
<tr>
<th>Qualitative criteria (7 point Likert scale)</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>The system was easy to use</td>
<td>6</td>
</tr>
<tr>
<td>High awareness af others' activity</td>
<td>5</td>
</tr>
<tr>
<td>Export record for later view was useful</td>
<td>6</td>
</tr>
<tr>
<td>Prefer clip cutting instead of clip search</td>
<td>6</td>
</tr>
</tbody>
</table>
Spatial distributed Search (SearchTogether)

- (a) integrating messaging
- (b) query awareness,
- (c) current results
- (d) recommendation queue
- (e)(f)(g) search buttons
- (h) page-specific metadata
- (i) toolbar
- (j) browser

Spatial distributed Search (SearchTogether)

<table>
<thead>
<tr>
<th>Qualitative criteria (5 points Likert scale)</th>
<th>Collective tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>SearchTogether helped to complete the joint task</td>
<td>3.9</td>
</tr>
<tr>
<td>SearchTogether is more effective than other tools</td>
<td>4.1</td>
</tr>
</tbody>
</table>

- 38% of all result lists were the consequence of using history
- 70 positive and 9 negative ratings
- 22 of 36 recommendations were viewed by the recipients
Improvement Through Collaborative Ranking

Choose Your Category of Expertise or Interest
Computers

Choose Your Query in the selected category to Rank Results
Java coding

Java Programming Examples
Description: pdf Javadoc HTML - Java Code Conventions (from Sun Microsystems) ... Source Code • Example Output - Logging Demo (1) - Java SDK 1.4 Logging API ...
URL: http://www.idevelopment.info/data/Programming/java/PROGRAMMING_Java_Programming.shtml

Ranking Options
- Highly Relevant
- Relevant
- Not Relevant
- Don’t Know
- This result is selected Now! Choose Your Ranking Options

Free Java Tutorials & Guide | Java programming source code
Description: Free java guide website to learn Java programming through examples. Beginner's tutorials of plsql and sql with java source code.
URL: http://www.freejavaguide.com

Improvement Through Collaborative Ranking

- Shopping queries gained the most from the collaborative ranking. Business queries from Google ranking

Hardware support for Co-located (TeamSearch).

- Circles are categories: people, location, year, event
Hardware support for Co-located(TeamSearch).

Qualitative criteria (7 points Likert scale)                     Collective tokens | Parallel tokens
--- | --- | ---
I worked closely with the other members of my group to accomplish this task. | 5.75 | 4.88
Members of the group communicated with each other effectively. | 5.75 | 5.00
The group worked effectively as a team on this task. | 5.75 | 4.81

Quantitative criteria

<table>
<thead>
<tr>
<th></th>
<th>Collective</th>
<th>Parallel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimal set of photos (ideal 5)</td>
<td>6.5</td>
<td>7.5</td>
</tr>
<tr>
<td>Query rate</td>
<td>0.056 q/s</td>
<td>0.11 q/s</td>
</tr>
<tr>
<td>Distribution balance queries per member (standard deviation)</td>
<td>5.78</td>
<td>9.09</td>
</tr>
</tbody>
</table>
Smalltalk, what should be the properties of a perfect collaborative system?