The Socio-technical Design of a Library and Information Science Collaboratory

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Research aims

This research investigates:

- How students, researchers and practitioners evaluate and choose data collection instruments
- What motivates individuals to share data collection instruments with others who they may or may not know

This research will:

(1) Identify socio-technical factors that impact the design & use of a collaboratory (a socio-technical platform) within a social science field

(2) Design a collaboratory based on these factors

Theoretical background

Several research areas are relevant to the study, for example:

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Context</th>
<th>Traditional science</th>
<th>e-Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td></td>
<td>Scientific collaboration</td>
<td>Scholarly communication</td>
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<td></td>
<td></td>
<td>Scientific collaboratories</td>
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<td>Organization</td>
<td></td>
<td>Scientific disciplines</td>
<td>Invisible colleges</td>
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<td></td>
<td></td>
<td>Virtual communities</td>
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</tbody>
</table>

Factors that may impact the design and use of a collaboratory

An in-depth synthesis of previous research identified six categories of factors that appear to impact the design and use of a collaboratory.

<table>
<thead>
<tr>
<th>Level of focus</th>
<th>Aspects of Science</th>
<th>Progress</th>
<th>Social</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td></td>
<td>Career</td>
<td>Personal</td>
<td>Cost of participation</td>
</tr>
<tr>
<td>Group</td>
<td>Disciplinary and scientific advancement</td>
<td>Community</td>
<td>Cost to develop and sustain</td>
<td></td>
</tr>
</tbody>
</table>

Research design

The design of the prototype collaboratory emerged from three activities:

- A review of relevant research literature [1] identifying factors that appear to impact the design and use of a collaboratory
- An empirical study: interviews with LIS students, academic faculty members and professionals
- Use cases that highlight potential ways individuals could interact with the collaboratory to facilitate their research. Results from these activities were aggregated into a prototype collaboratory has been designed from the results of the activities above.

Future research: The prototype will be evaluated to determine the feasibility of a collaboratory for LIS.

Preliminary results

Preliminary analysis of the interview data indicates that the respondents are positive to the idea of sharing data collection instrument with others. Some respondents already share instruments with people who contact them, and vice versa: some respondents contact researchers asking to use their instruments. However, in general, LIS is not seen as a discipline with a particularly collaborative culture. The respondents believe that a shift to a collaborative culture will develop over time.

Benefits of sharing that were reported include: an increased potential for creating and using higher quality instruments; enabling additional advancements in LIS research, e.g., by comparison of results; saving time and effort; and increased learning through studying other people’s instruments.

Incentives for sharing discussed by the respondents are primarily to get citations and acknowledgements in publications in which their instruments have been used. Many respondents state that they would feel very flattered if someone wanted to use their instrument.

Disincentives for sharing include concerns about instruments being used erroneously; not getting credit for one’s instruments; and people getting ahead of competition by using existing instruments and thus saving time.