Dual Roles in Information Mediation at Work: Analysis of Advice-receiving and Advice-providing Diary Surveys

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ABSTRACT
In everyday work, people often turn to their colleagues for information. Those colleagues play the role of information mediators by intervening in the information seeking and use of others. This study investigates how people initiate the information mediation process, how they influence one another's subsequent information behavior, and how they benefit from the process, from the perspectives of both the information seeker and the information mediator. To examine the dynamics of the information mediation process, an online diary survey was conducted in a real-world workplace setting, followed by in-depth interviews. This paper reports on a preliminary analysis of 450 diary entries in which participants reported the work tasks that required advice from colleagues as well as the extent of the advice provided. Analysis of the diary data revealed the types of tasks, types of advice, and relationship between task and advice types. The results suggest that people perceive tasks differently depending on whether they play the role of information seeker or information mediator, while their perception of advice seems to be independent of their role in the information mediation process. These typologies serve as a basis for further analyzing reciprocal influences between information seekers and mediators.

Keywords
Workplace information behavior, interpersonal information seeking, information mediation, diary study.

INTRODUCTION
It has long been established that people rely on their colleagues to seek information in everyday work (Auster & Choo, 1994; Yuan, Carboni, & Ehrlich, 2010). A few researchers have characterized those colleagues as information mediators, who advise and intervene in the information seeking process of others (Ehrlich & Cash, 1994, 1999; Kuhlthau, 2004). Traditionally, librarians have been viewed as professional information mediators whose primary responsibility involves guidance in searching for information (Kuhlthau, 2004). In the process of daily work, information mediation is performed not only by those professionals, but also informally by anyone within the organization even though their job descriptions do not explicitly include those responsibilities. It is embedded in everyday interactions between colleagues, as they play the dual roles of information seeker and mediator.

In the workplace, information mediation is a social process in which information seeking strategies are developed and negotiated. Often, information seekers turn to their colleagues for advice on how to find and make use of information. The colleagues then guide the seekers to move onto the next stage in the course of information seeking and use. In the process of providing advice, those colleagues transfer perspectives and judgments of information credibility to the seekers, potentially influencing their subsequent information behavior. Once they receive advice, though, the seekers do not automatically accept it. Their acceptance depends on how much they trust the colleagues and their advice. The present study explores these dynamics in the process of information mediation from the perspectives of both information seekers and mediators.

Understanding the dynamic and interactive process of information mediation becomes more critical as organizations adopt social media, such as corporate blogs, wikis, and other rating and recommending mechanisms. These tools provide people with various communication channels through which they can intervene in each other’s information seeking processes while unknowingly influencing each other. While previous studies have contributed to our understanding of who information mediators are and what they do (Ehrlich & Cash, 1994, 1999; Kuhlthau, 2004), we examine (1) how people enter into the information mediation process, (2) how they influence each other’s subsequent evaluation of information and decision-making, and (3) how they benefit from the process.

To examine the context of information mediation, we analyzed the work tasks which required advice in seeking or using information as well as the intentions in deciding who to turn to for advice. To examine the reciprocal influence underlying the information mediation process, we analyzed the extent of advice, level of acceptance of advice, and changes in subsequent information behavior, relative to trust perceptions including interpersonal trust and trustworthiness of the advice. To examine the outcome of the information mediation process, we analyzed both
positive and negative values that it produces depending on
cost (e.g., time) and benefit (e.g., usefulness of advice)
functions.

These research objectives require capturing naturalistic, in-
the-moment experiences of both information seekers and
mediators, as well as collecting in-depth narratives of those
experiences. We therefore conducted the study within a
real-world workplace setting using a two-phase multi-
methods design: (1) online diary survey and (2) interviews.
In this paper, we report the preliminary findings from the
online diary survey, focusing on our analysis of task and
advice.

METHODS

Research Site

This study was conducted at an R&D department of a large
Midwestern manufacturing company. The department
consists of over 500 employees featuring a population of
scientists, technicians, and engineers working on a variety
of projects. It has long been identified that scientists and
engineers tend to be strongly motivated and heavy
consumers of information (Fidel & Green, 2004; Hertzum
& Pejtersen, 2000). This R&D department was chosen as a
research site because most of its projects are collaborative
in nature, with different divisions and hierarchical levels
working together to complete projects.

Phase 1: Online Diary Surveys

Diaries enable participants to record events, thoughts,
feelings, and behaviors using their own words (Poppleton,
Briner, & Kiefer, 2008). Diaries also help them recall
memories of those details during subsequent interviews.
This phase of the study is designed to capture events
surrounding the information mediation from the
perspectives of both information seekers and mediators.
With this aim, two sets of diaries were developed: (1)
advice-receiving diaries for recording activities during
which participants get advice from their colleagues in
seeking or using information; and (2) advice-providing
diaries for recording activities during which participants
give advice to their colleagues in seeking or using
information.

86 individuals who agreed to participate in the study were
signaled via corporate email twice a day, at noon and 4PM,
for two weeks from February 6 to 17, 2012, excluding
weekends. Each participant was asked to record advice-
receiving diaries for one week and advice-providing diaries
for the other week. In order to control any order effect,
about half of the participants started with advice-receiving
diaries (N=42), while the rest started with advice-providing
diaries (N=44). Before collecting the survey data, we
administered a background questionnaire that asked for
basic demographic information including job roles,
department, and work tenure.

Both sets of diaries consisted of open-ended, Likert-type,
and multiple-choice questions. They first asked the
participants to think about situations during the past four
hours in which they turned to their colleagues (or their
colleagues turned to them) for work-related advice or
information and to choose the one that took the most time.
In the advice-receiving diaries, the participants were then
asked to report the characteristics of the task, including its
urgency and complexity, names of up to five people they
turned to, method they used to find and communicate with
each person, reason they chose each person, characteristics
of the advice received, action taken as a consequence of
receiving the advice, credibility of the advice received, and
value of the advice-receiving experience. In the advice-
providing diaries, they were asked to report characteristics
of the task, including its complexity, name of the person
they assisted, method used to communicate with the person,
perceived reason for why they were chosen, extent of the
advice they provided, their level of expertise in the topic,
their confidence and trust in the advice, and the value of
the advice-providing experience.

Phase 2: Interviews

Following the diary surveys, semi-structured interviews
were conducted with 45 participants from February 21 to
March 9, 2012. For each interview, a maximum of four
diaries were selected based on the reported time taken for
the conversation and word count of their description of the
advice received or provided in the diaries. Before starting
the interviews, the bull’s eye method (Kahn & Antonucci,
1980) was conducted to collect the diagrammatic
representation of the participants’ relationship with each
individual they included in both the advice-receiving and
advice-providing diaries. The participants were then asked
to recount the episode from the first of the selected diaries,
providing additional details about the tasks for which they
received or provided advice in seeking or using information.
While the diary questions were designed to collect
contextual data regarding the information mediation event,
the interview questions focused on the intentions and
influences associated with the information mediation
practices.

Data Analysis

After removing incomplete and inappropriate records, the
data set consists of a total of 450 diaries, 206 advice-
receiving and 244 advice-providing, submitted by 75
participants. About half of them started with advice-
receiving diaries (N=35), while the rest started with advice-
providing diaries (N=40). On average, each participant
submitted 2.8 advice-receiving (SD=1.8) and 3.3 advice-
providing (SD=2.1) diaries. For the analysis, we coded the
responses to the two open-ended questions regarding the
specific tasks on which the participants needed or provided
advice and the advice they received or provided. Using
content analysis, coding schemes to these questions were
developed iteratively. A small proportion of the statements,
12 (2.7%) out of 450 statements on task and 37 (6.8%) out
of 546 statements on advice, were excluded from coding
due to insufficient details.
In the remainder of this paper, we report the preliminary findings from analysis of the diary data, focusing on the types of tasks and advice, complexity of the task, and relationship between the types of tasks and advice. Findings related to other sets of variables, such as trust and value, will be reported in another paper.

**FINDINGS**

**Characteristics of Participants**
Among 75 participants, 37 were male and 38 were female. They were spread out across age groups, with higher concentrations (78.7%) in the middle to older age groupings (35-44, 45-54, and 55-64). The mean duration of work tenure at the company was 10.9 years (SD=9.28). Their job roles were aggregated to seven main categories: scientists (50.7%) including product developers, sensory scientists, and chemists; technicians (10.7%); managers (9.3%); project managers (9.3%); regulatory/legal specialists (8%); administrative/clerical workers (6.7%); and engineers (5.3%).

**Analysis of Task**
To understand the context of information mediation, we analyzed the work tasks for which advice was received or provided. Table 1 shows the categories and prevalence of the different types of tasks reported. The table also illustrates each type using an example from the data. The tasks were categorized into five main types: (1) increase descriptive knowledge or know-what; (2) increase procedural knowledge or know-how; (3) assess value; (4) determine actions; and (5) obtain data. Descriptive and procedural knowledge were further categorized into technical and non-technical knowledge. Technical knowledge includes the knowledge of mechanical or scientific issues, while non-technical knowledge involves that of business, cultural, or managerial issues.

In both advice-receiving and advice-providing situations, the most frequent task subtype was gain technical know-what (31.8% and 37.1% respectively). When receiving advice, the next most frequent tasks were gain non-technical know-what (29.2% and 31.8% respectively). When providing advice, however, the next most frequent tasks were gain technical know-how (13.4%) and gain non-technical know-how (14.4%). When providing advice, however, the next most frequent tasks were gain technical know-how (9.3%), decide (10.1%), and solve (8.9%).

Once they described a task, participants were asked to rate its complexity on a 7-point Likert scale with 1 being “not at all complicated” and 7 being “very complicated.” Overall, the participants perceived the tasks as more complicated when they provided advice ($M=4.29$, $SD=1.63$) than when they received advice ($M=3.83$, $SD=1.61$). When seeking advice, they found solve ($M=4.38$, $SD=1.57$) to be the most complicated task subtype, while finding evaluate ($M=2.88$, $SD=1.13$) to be the least complicated. When giving advice, however, they perceived evaluate ($M=5.17$, $SD=1.33$) was perceived to be the most complicated task, while finding decide ($M=3.63$, $SD=1.74$) to be the least complicated. A possible explanation of this disparity in the perceived complexity of the evaluating task is that, when information

<table>
<thead>
<tr>
<th>Task type</th>
<th>Receiving (n=201)</th>
<th>Providing (n=237)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>%</td>
</tr>
<tr>
<td>Increase descriptive knowledge</td>
<td>Gain technical know-what</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Gain non-technical know-what</td>
<td>18</td>
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<tr>
<td>Increase procedural knowledge</td>
<td>Gain technical know-how</td>
<td>27</td>
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<tr>
<td></td>
<td>Gain non-technical know-how</td>
<td>12</td>
</tr>
<tr>
<td>Assess value</td>
<td>Evaluate</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Verify</td>
<td>8</td>
</tr>
<tr>
<td>Determine actions</td>
<td>Decide</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Solve</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Plan</td>
<td>14</td>
</tr>
<tr>
<td>Obtain data</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 1. Task types reported in advice-receiving and advice-providing diaries

<table>
<thead>
<tr>
<th>Advice Type</th>
<th>Receiving (n=272)</th>
<th>Providing (n=237)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>%</td>
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<tr>
<td>Knowledge Addition</td>
<td>Aggregation</td>
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<tr>
<td></td>
<td>Background knowledge</td>
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<td></td>
<td>Experience sharing</td>
<td>10</td>
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<tr>
<td></td>
<td>Explanation/demonstration</td>
<td>52</td>
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<tr>
<td>Value Addition</td>
<td>Idea/opinion</td>
<td>72</td>
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<tr>
<td></td>
<td>Suggestion</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Validation</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Solution</td>
<td>36</td>
</tr>
<tr>
<td>Alternatives</td>
<td>Referral to documents/files</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Referral to other people</td>
<td>28</td>
</tr>
</tbody>
</table>

Table 2. Advice types reported in advice-receiving and advice-providing diaries
mediators provide advice, they feel strong responsibility for determining values due to concern about the influence that it will have on the seeker’s subsequent judgment. The high complexity rating may reflect people’s perceived responsibility.

**Analysis of Advice**

In the process of information mediation, the intervention is received or provided in the form of advice. Table 2 shows the categories and prevalence of the different types of advice reported along with examples from the data. Advice was categorized into three main types: (1) knowledge addition; (2) value addition; and (3) alternatives suggestion. Compared to the other advice types, value addition involves more of the information mediators’ judgment and personal opinion with an intention of influencing its recipients. In both advice-receiving and advice-providing situations, the most frequent advice type was value addition (58.1% and 51.5% respectively).

When comparing the prevalence of the advice subtypes, results for the two sets of diaries were similar. Participants reported that the most frequently received and provided advice type was idea/opinion (26.5% and 24.5% respectively) followed by explanation/demonstration (19.1% and 21.1%), solution (13.2% and 14.3%), and suggestion (11% and 11%).

In advice-receiving diaries, the participants were asked to report up to five people they turned to for advice on each task. In 27.6% of the advice-receiving episodes, they consulted more than two people to accomplish a task. To understand how information mediation evolves over time through the involvement of multiple people, we compared the prevalence of the advice subtypes from the first person to that of the advice types from the second through fifth persons. In the cases of consulting multiple people, knowledge addition decreased from 31.5% to 18.7%, while value addition and alternative suggestion increased from 55.8% to 64% and from 12.7% to 17.3%, respectively.

**Relationship between Task and Advice**

In order to map out the relationship between task and advice, we calculated the percentage of each advice subtype employed within each task subtype. We used the combined data from both advice-receiving and advice-providing diaries to understand the overall pattern of which advice subtypes correspond to which task subtypes. Even when analyzed separately, the pattern was almost identical between the two sets of the diaries.

An interesting pattern was observed when we distinguished between the task of gaining technical knowledge and that of gaining non-technical knowledge. For gaining technical knowledge, explanation/demonstration (32.8%) and idea/opinion (25.9%) were more frequently reported than other advice types. For gaining non-technical knowledge, suggestion (25%) was the most frequently reported advice type, followed by idea/opinion (23.2%) and referral to other people (14.7%), while referral to documents/files was not reported at all.

**CONCLUSION**

Our results, although preliminary, indicate that people interpret and perceive work tasks differently depending on whether they play the role of information seeker or information mediator. The role they fulfill, however, does not seem to affect perception of the advice provided. The contribution of this paper resides in developing typologies of task and advice from both sides of the dyadic relationship. Our results also indicate that information mediation occurs multiple times during the course of seeking information, especially when it requires an intervention based on value judgment. Another contribution of this paper is that it suggests the importance of studying the evolution of information mediation and the chain of connection among the multiple people involved.

We are now in the process of analyzing the rest of the diary data, focusing on the perceived trustworthiness of advice, the outcome of the information mediation experience, and factors affecting those two variables. We also plan to analyze the 45 in-depth interviews with the intent of developing a theoretical framework that describes the complexities of information mediation from the dual perspectives of receiving and giving advice. These next steps of data analysis will provide insights into how information seeking trajectories are guided and shaped by colleagues in everyday work.

**REFERENCES**


