

# 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

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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.

Task type		Receiving (n=201)			Providing (n=237)			Example
		n	%	Rank	n	%	Rank	
Increase descriptive knowledge	Gain technical know-what	64	31.8	1	88	37.1	1	Understand the functionality of an ingredient
	Gain non-technical know-what	18	9	4	7	3	8	Enhance knowledge on the business part of the company
Increase procedural knowledge	Gain technical know-how	27	13.4	3	46	19.4	2	Develop a matrix of tests for a project
	Gain non-technical know-how	12	6	7	10	4.2	6	Understand how to build trust within a team
Assess value	Evaluate	8	4	8	6	2.5	9	Determine whether a presentation covered the right information
	Verify	8	4	8	5	2.1	10	Double check a test procedure the company uses
Determine actions	Decide	15	7.5	5	24	10.1	3	Select which sampling plan is best
	Solve	29	14.4	2	21	8.9	4	Encounter a problem with a piece of equipment during a test
	Plan	14	7	6	20	8.4	5	Set goals around a future team-building event
Obtain data		6	3	10	10	4.2	6	Need a statistical summary of data for a project

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

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 *solve* (14.4%), *gain technical know-how* (13.4%), and *gain non-technical know what* (9%). When providing advice, however, the next most frequent tasks were *gain technical know-how* (19.4%), *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

Advice Type		Receiving (n=272)			Providing (n=237)			Example
		n	%	Rank	n	%	Rank	
Knowledge Addition	Aggregation	5	1.8	10	15	6.3	6	Collect raw data and summarize it
	Background knowledge	9	3.3	9	9	3.8	9	Go through the background of a previous testing
	Experience sharing	10	3.7	7	12	5.1	7	Share one's approach to a similar problem reflecting on past situations
	Explanation/demonstration	52	19.1	2	50	21.1	2	Walk through an example of building a new report
Value Addition	Idea/opinion	72	26.5	1	58	24.5	1	Review and provide comments on a test analysis
	Suggestion	30	11	4	26	11	4	Provide a direction based on original scope of work
	Validation	20	7.4	6	4	1.7	10	Confirm the agenda for an upcoming meeting
	Solution	36	13.2	3	34	14.3	3	Identify options to prevent incident from occurring
Alternatives Suggestion	Referral to documents/files	10	3.7	7	10	4.2	8	Supply documentation of a team's future plan
	Referral to other people	28	10.3	5	19	8	5	Provide the name of a person and coach on how to bring up an issue

**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.

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