

**Application for The Thomson Reuters Information Science Doctoral  
Dissertation Proposal Scholarship**

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# **Motivations and Expectations for Asking Questions Within Online Q&A**

## **Overview of the proposal**

During the past few decades, advanced information technologies and systems have emerged to help people seek information and the Internet and the World Wide Web have become important tools for people to seek information to solve a specific problem, as well as to browse general resources to fulfill their every day life information needs. Since the advent of the Internet and the Web, the number of online resources for information seekers has substantially increased (Levy et al., 1996). These resources provide new ways to “seek and distribute information and communicate with others” (Rice & Haythornthwaite, 2009, p.92), and include online Q&A services which allow people to identify their information need, formulate the need in natural language, and interact with one another to receive answers to satisfy their information need.

Unlike traditional information retrieval (IR) systems and other online sources (e.g., search engines) in which people use queries to obtain information from systems, online Q&A services enable computer-mediated interpersonal communication with other people through new information and communication technologies (ICT). These Q&A sites encourage social interactions and relationships for seeking and sharing information. Thus, a successful interaction within online Q&A assumes that the asker clarifies what he or she wants to know and an answerer (or answerers) understand the asker’s information need, and respond back to the asker’s question in order to satisfy his or her information need.

## **Problem Statement**

As online Q&A has rapidly grown in popularity and impacted people’s information seeking behaviors, a rich body of research has emerged to understand various aspects of online Q&A services, mainly focusing on the two areas: (1) user-based studies and (2) content-based studies (Shah, Oh, & Oh, 2009). One of the major aspects of user-based studies is to investigate user motivations and behaviors (Gazan, 2012). However, this research has only focused on what motivates people to answer questions (see Nam et al., 2009; Oh, 2012). There are very few studies that attempt to address why people visit online Q&A sites in order to ask a question to fulfill their information needs.

The fact that online Q&A facilitates human-to-human interaction poses a key difference from search engines that facilitate a keyword-based search (e.g., Google), and Rosenbaum and Shachaf (2010) argue that users' social interactions play a significant role in seeking and sharing information within the dynamic of an online Q&A community. Since social interactions within the question-answering processes comprise a critical feature of an online Q&A environment, Gazan (2012) argues that Rosenbaum & Shachaf's work (2010) provides "theoretical grounding for the idea that information exchange on [online Q&A] sites may not be motivated by classical notions of information retrieval and topical relevance" (p.2304). As online Q&A services are structured to provide information unique to an asker's situation and context, it is essential to investigate the ways in which people use online Q&A to address their information needs by a "person in situation oriented" approach (Vakkari, 1997).

Given that online Q&A provides a unique context affecting a users' information seeking process, this work will to investigate different motivations that lead people to interact with others within an online Q&A service by asking a question. In addition to examining motivations behind asking a question, the proposal will look into expectations that the askers have with respect to the responses they get for their questions. As Hsu et al. (2010) argue, "an individual's motivation to perform a certain activity is a function of the expectation that he or she will be able to perform the activity and obtain the desired outcomes, and the personal value of all outcomes associated with that activity" (pp. 284-285). Therefore, it can be argued that motivation and expectation are interrelated in achieving a specific goal or desirable outcome. For this reason, it is also important to investigate what online Q&A users expect to receive with respect to the responses to their question, as well as how users' motivations and expectations are related to each other when asking a question within online Q&A.

### **Research Questions**

This proposal will study motivations and expectations that engage people to interact in order to ask a question seeking contextual information unique to their situation within online Q&A. To do this, the proposal will attempt to address the following research questions:

*RQ1. What motivates people to interact with others to ask a question that addresses their information need within online Q&A services?*

*RQ2. What are an asker's expectations from others to fulfill his or her information need when asking a question within online Q&A services?*

*RQ3. How do the motivations of asking a question relate to the expectations of information content within each type of online Q&A service?*

## **Methodology**

This study will use a sequential mixed method design (Creswell, 2002, 2003), which partially mixes quantitative and qualitative research, and conducts data collection and analysis sequentially. The sequential exploratory mixed method design in the this study will employ a quantitative approach using an Internet-based survey (first phase), log data to collect objective, quantitative information about online users' questioning behavior patterns for in-depth interviews (second phase), and in-depth interviews (third phase). In the first phase in this study, an Internet-based survey will be conducted in order to collect the quantitative data that provides the "big picture" (Hodgkin, 2008, p.296) of online Q&A users' motivations and expectations for asking questions within online Q&A. The purpose of the quantitative research phase in the study is to identify motivational and expectation-based variables within an online Q&A context, generalize online users' motivations behind asking a question and expectations for responses to their question within online Q&A sites, and attempt to select participants representing different cases of questioning behaviors for the next two phases in the research design. In the second phase, log data will be conducted to collect participants' questions asked within online Q&A, as well as their motivations and expectations for each question prior to conducting in-depth interviews.

### **Phase 1 – An Internet-based survey**

The first phase of the study will focus on the quantitative data collection for identifying and generalizing characteristics of online Q&A users' motivations and expectations for asking questions and their relationships. To do so, an Internet-based survey will be conducted. This constitutes a useful data collection method because it can analyze significant phenomena based on a frequency by which each type of motivation and expectation within an online Q&A user's behavioral processes is identified. The survey will be based on the self-reporting questionnaire consisting of different formats of questions such as open-ended questions, as well as the Likert-scale based self-assessment questions. The survey questionnaire will consist of thirty four questions, which are also grouped by five categories: (1) demographic section, (2) general web and questioning behaviors, (3) motivational factors behind asking questions within online Q&A sites, (4) expectations from other users with respect to their response to the question asked within online Q&A sites, and (5) general experiences asking questions within online Q&A sites.

An Internet-based survey will be distributed via either the email link and/or private message depending on the available communication channel within online Q&A sites. For example, Yahoo! Answers allows users to provide their personal email link on their profile, which is publicly open and available, therefore the survey recruitment message with the survey link will be sent to Yahoo! Answers users who enable the email link to be displayed on their profile, while the recruitment message can be sent via the private message channel for WikiAnswers, Facebook, and Twitter users. In order to increase the response rate, the study will send an additional reminder email to those online Q&A users in the week following the first survey. To select potential participants for an Internet-based survey in the first phase, online Q&A users should have used one of online Q&A sites listed above in order to ask questions for 6 months prior to participation in the survey, and asked at least one question during this time period. A total of 200 participants who use different online Q&A sites will be targeted to recruit for the survey comprising the quantitative research portion.

#### Phase 2 – Log Data

This study will use log data in order to collect information about what questions people ask and when they ask them prior to conducting in-depth interviews. Since in-depth interviews attempt to investigate and examine specific situations or incidents where users ask a question within online Q&A, conducting log data collection with in-depth interview participants prior to conducting the interview could be useful to quantify what type of questions people tend to ask within online Q&A, and have the participants keep a diary of their motivations and expectations for asking questions during the data collection period. Log data allows the researcher to collect comprehensive records of users' every events and activities online (Bruckman, 2006), and to collect objective and quantitative information about online users' behavior patterns (Rieger, 2009).

For the second and third phase for qualitative research in this study, maximal variation sampling will be used in order to seek representative samples for multiple cases. Maximal variation sampling is a purposeful sampling where the researcher selects different sample cases, which "represent the complexity of our world" (Creswell, 2002, p.194). This sampling "yields detailed descriptions of each case, in addition to identifying shared patterns that cut across cases" (Hoepfl, 1997, p.54), which maximizes the diversity, close to the whole populations, in the study. Thus, identifying how many cases this study should be selected for qualitative research is dependent upon the data collection and analysis in the quantitative research phase. Thus, approximately 15-20 potential participants for qualitative research will be selected based on participants' responses to: (1) gender, (2) age, (3)

general web search behaviors, (4) history of online Q&A site use, (5) motivations and expectations for asking questions, and 6) their relationships when asking questions within online Q&A sites

### Phase 3 – In-depths Interviews

In this study, multiple case studies (Stake, 1995) based on online Q&A users' experiences of questioning with emphasis on their motivations behind asking questions, as well as expectations from other users with respect to their answers to the question will be used for conducting qualitative research. A case study can be served as "a holistic inquiry that investigates a contemporary phenomenon within its natural setting" (Harling, 2002, p.1) in order to explore specific real-time situations or incidents where people ask questions and address "why" questions (Benbasat, et al., 1987; Darke, et al., 1998) about asking questions within online Q&A sites.

In-depth phone interviews will be conducted with approximately 15-20 participants who will participate in collecting their log data in phase 2. Data collection for the interview in phase 3 is based on the principles of Critical Incident Technique (CIT) in order to study more specific situations or incidents of the users' questioning behaviors for seeking information, as well as their expectations from others based on their questions on the online Q&A sites. As the CIT is designed to examine complex sets of behavioral intentions (Urquhart et al., 2003) and a flexible set of procedures designed to collect data of participants' behaviors during actual situations (Miller et al., 2000), the CIT in the study will help collect information about specific situations or incidents where the users are motivated to ask questions for fulfilling their needs and understand their corresponding expectations from others to the given questions within online Q&A sites.

### Significance of the Study

Understanding users' motivations behind asking a question as well as their expectations with respect to the responses is a critical endeavor that could provide a general framework conceptualizing different contexts of information needs (e.g., affective, social, personal, and cognitive states) that drive people into social interactions for seeking information within an online Q&A context. Focusing on an online Q&A user's behavioral processes by incorporating an asker's motivations and expectations will enable us to not only understand the contexts of use of online Q&A services to socially interact, as well as seek and share information, but also improve online Q&A service quality that helps provide satisfactory answers.

Moreover, one of the main elements of study of online Q&A is to measure information relevance and quality. To do so, previous studies attempting to analyze information quality in online Q&A have paid attention to

textual (e.g., length of the answer's content) and non-textual features (e.g., information from the answerer's profile) (see Shah & Pomerantz, 2010 for details of criteria employed for predicting information quality). Even though the recent research has also focused on new criteria (e.g., politeness, novelty, timeless, etc.) that can be employed to assess the quality of information (Kim & Oh, 2009; Liu et al., 2008; Shah, Oh, & Oh, 2008; Shah & Pomerantz, 2010) in order to analyze how information satisfies an asker's need, there is still a lack of consideration of how the situational context behind asking a question affects quality judgments.

As Agichtein, Liu, and Bian (2009) suggest, personalized approaches for evaluating the quality of information tailored to an individual information seeker can result in improvements of the assessment of information quality in online Q&A. Mai (2013) argues, "for the quality of information to be assessed, it must mean something to somebody in some context" (p.765). Therefore, findings from this work can help not only in identifying why and how users are engaged in information seeking within an online Q&A context to satisfy their information needs, but also in developing more comprehensive personalized approaches to deriving information relevance and satisfaction, including the motivations and expectations of users when seeking information. Since online Q&A users may want to "have what we can call the best textual means to his end" (Wilson, 1968, p.21), understanding the motivations behind and expectations of asking a question has applications for building on a framework of how people assess information, which includes not only question content, but also users' contexts (i.e., motivations, expectations) established by asking a question in a given situation.

#### **Plan of the Work**

<b>Proposal</b>	July-August 2013	<ol style="list-style-type: none"> <li>1. Submitting dissertation proposal to the committee</li> <li>2. Scheduling dissertation proposal defense</li> </ol>
<b>Data Collection</b>	August	<ol style="list-style-type: none"> <li>1. Conducting an Internet-based survey with approximately 200 online Q&amp;A users</li> </ol>
	September	<ol style="list-style-type: none"> <li>1. Selecting approximately 20 participants for log data and in-depth interviews</li> <li>2. Installing a log data tool for collecting participants' log data</li> <li>3. Conducting in-depth interviews</li> </ol>

<b>Data Analysis</b>	October - December	<ol style="list-style-type: none"> <li>1. Analyzing data for quantitative research <ul style="list-style-type: none"> <li>- Descriptive analyses</li> <li>- Linear regression</li> <li>- Exploratory factor analysis</li> </ul> </li> <li>2. Analyzing data for qualitative research <ul style="list-style-type: none"> <li>- Within-case approach</li> <li>- Across-case approach</li> </ul> </li> <li>3. Sequentially integrating qualitative findings with those of quantitative research</li> </ol>
<b>Dissertation manuscript</b>	January 2014	<ol style="list-style-type: none"> <li>1. Finalizing discussion of results and conclusion</li> <li>2. Submitting a draft to the dissertation chair</li> </ol>
	March	<ol style="list-style-type: none"> <li>1. Submitting semi-final dissertation draft to the committee</li> </ol>
	April	<ol style="list-style-type: none"> <li>1. Scheduling dissertation defense</li> <li>2. Final dissertation defense</li> <li>3. Submitting a dissertation</li> </ol>

#### **Budget**

<b>Phase I</b>	500 dollars	20 of the survey participants will be randomly selected and received an electronic gift certificate of 25 dollars
<b>Phase II &amp; III</b>	800 dollars	Approximately 20 survey participants will be selected for log data and in-depth interviews. Each interview participant will be received 40 dollars.
<b>Total</b>	1300 dollars	

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