Motivations and Expectations for Asking Questions Within Online Q&A

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ABSTRACT
Online Q&A has rapidly grown in popularity, impacting people’s information seeking behaviors. Although research has paid attention to a variety of characteristics within online Q&A in order to investigate how people seek and share information, fundamental questions of user motivations and expectations for information seeking within online Q&A remain. Thus, this proposed research focuses on investigating different motivations that lead people to interact by asking a question within an online Q&A service, as well as what online Q&A users expect to receive with respect to the responses to their question. Findings from the proposed research will not only provide a general framework of conceptualizing different contexts of information needs that drive people into social interactions for seeking information within an online Q&A context, but also inform a more holistic framework to assess information which includes question content, as well as the users’ contexts (i.e., motivations, expectations) established by asking a question in a given situation.

Keywords
Online Q&A, Questioning, Motivation, Expectation, Uses and gratification, Evaluation.

INTRODUCTION
Online Q&A is a Web-based environment in which people identify their information need, formulate the need in natural language, and interact with one another to receive answers for satisfying their information need. In other words, Harper et al. [11] argue that online Q&A services are “purposefully designed to allow people to ask and respond to questions on a broad range of topics” (p.866). Online Q&A allows people to have human-to-human interactions for seeking and sharing information, while having the convenience of doing it virtually [29].

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. This research focuses mainly on two areas [29]: (1) user-based studies and (2) content-based studies. One of the major aspects of user-based studies is to investigate user motivation and behavior [10]. However, most of this research has focused on what motivates people to answer questions (see [22][23]). Very few studies address why and how people visit online Q&A sites 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 [25] 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 [10] argues that Rosenbaum and Shachaf’s work [25] 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 would be essential to investigate the ways in which people use online Q&A for their information needs by a “person in situation oriented” approach [34].

In this light, the main focus of the proposed research for understanding the online Q&A users’ situation and context in their information seeking is to investigate motivations that lead people to interact by asking a question within an online Q&A service. Going beyond the motivations behind asking a question, the project will investigate expectations that the askers have with respect to the responses they get for their questions. As Hsu et al. [13] 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. Thus, 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

The purpose of this dissertation is to investigate online Q&A users’ contexts and situations behind questioning behavior, in particular to look at motivations and expectations that engage people to use online Q&A to interact with others for seeking contextual information unique to their situation. To do this, the dissertation 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?

BACKGROUND

Online Q&A services

Online Q&A services have provided outlets for information retrieval where the users’ information need is formed by natural language questions posed to a community whose members can answer the question or even offer feedback on the given responses, resulting in a personalized set of answers generated via the collective wisdom of many [2]. Since the early 2000s, online Q&A services have become popular on the Web and, according to a Hitwise report, there was an 889% increase in visits to online Q&A services between 2006 and 2008 within the U.S [33].

Due to the popularity of use of online Q&A services as an information-seeking method and availability of data from them, different types of online Q&A services have emerged and are currently available for helping people to fulfill their information needs in various ways. There are four different types of online Q&A services: community-based (e.g., Yahoo! Answers), collaborative (e.g., WikiAnswers), expert-based (e.g., digital reference service), and social Q&A (e.g., Facebook). This typology was generated based on the author’s review and identification of the unique characteristics of different Q&A services, as well as informed by previous research studies focusing on online Q&A services [5].

Motivation

Previous studies have focused on motivations within online Q&A sites. Lee et al. [17] studied information seeking behaviors for searching for music-related information within two different types of online services (Yahoo! Answers, Google Answers), and identified the most significant information need as identifying either the artist and/or work. In a recent study by Zhang [37], she analyzed health related question from Yahoo! Answers, and identified the three motivational factors: cognitive motivation, social motivation, and emotional motivation. Additionally, Morris et al. [20] examined users’ motivations for using their social networks, and found that the most common reason is that people have more trust (24.8%) in the answers provided by their social network. However, previous studies of motivations within the online Q&A environments have been constricted by either specific interests and/or domains. It remains necessary to investigate a variety of online Q&A services consisting of a broad range of topics in order to gain insights into the user motivations for asking a question within online Q&A sites as a whole, over other information sources.

Expectation

People anticipate, or expect that when they articulate an information need, they will receive information sources that fulfill this need. In order to assess how well an information source fulfills their information need, people employ evaluative criteria. Therefore, it can be argued that the evaluation of an information source in relation to these criteria articulates a user’s expectations for this source.

Studies of criteria employed to evaluate information have been conducted within the context of online Q&A services. For example, Janes, Hill, and Rolfe [15] analyzed digital reference services, focusing on the characteristics of questions as well as responses received to the given questions. Findings indicated that additional/alternative information in relation to the requestor’s stated information need proved an important factor in determining the quality of responses within expert-based reference services. In addition, Kim, Oh, and Oh [16] investigated evaluation criteria employed by online Q&A users to select a Best Answer within Yahoo! Answers. The study indicated that utility (effectiveness, solution feasibility) proves the most critical factor in evaluating answers, followed by socio-emotional value. A recent study by Shah and Kitzie [28] found that trustworthiness constitutes one of critical factors in making evaluative judgments within the online Q&A environments.

METHODOLOGY (PROPOSAL)

The proposed research will use a mixed-methods design [7], more specifically a sequential mixed methods design [21] that blends quantitative and qualitative research in a single study. It is argued that quantitative and qualitative approaches could complement each other and the combination of these approaches could develop more comprehensive data analysis [31] and sharpen the understanding of findings ([9], [32]).

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 to constitute a useful data collection for analyzing 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 target population in this study will be online Q&A users, who actively ask questions in order to fulfill their needs within online Q&A sites. In the study, online Q&A
sites will include Yahoo! Answers, WikiAnswers, the Public Internet Library (virtual reference service), Facebook, and Twitter in which people formulate their needs in natural language and interact with other site members to seek answers. These sites are chosen based on the typology of online Q&A sites developed in the previous study [5]. Approximately 200 such participants will be recruited for the survey comprising the quantitative research portion.

Phase 2 – Log data
This proposed research will use log data in order to collect information about what questions people ask and when they do in online Q&A sites prior to conducting in-depth interviews for qualitative research. Log data allows the researcher to collect comprehensive records of users’ every event and activities online [3], and to collect objective and quantitative information about online users’ behavior patterns [24]. Information collected via log data will be used for in-depth interviews in phase 3. In this study, Coagmento (http://coagmento.org) will be used in order to collect each in-depth interview participant’s log data. Coagmento is a plug-in for Firefox browser, which can be served as a client level log data collection for this study. This tool will not only automatically collect their anonymized Web search information, but also allow interview participants’ to manually keep a diary for their questioning behaviors for each time when they ask questions within online Q&A sites.

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 in qualitative research. Maximal variation sampling is a purposeful sampling that the researcher selects different sample cases, which “represent the complexity of our world” ([6], p.194). This sampling “yields detailed descriptions of each case, in addition to identifying shared patterns that cut across cases” ([12], p.54), which maximizes the diversity, close to the whole populations, in the study. Identifying how many cases this study should be selected for qualitative research is dependent upon the data collection and analysis in the quantitative research, but approximately 15-20 participants for qualitative research will be targeted to select 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, in order to explore their unique and common phenomena [26] of questioning behaviors.

Phase 3 – In-depth interviews
In this study, multiple case studies [27] 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” ([11], p.1) in order to explore specific real-time situations or incidents where people ask questions and address “why” questions [7] about asking questions within online Q&A sites.

In-depth phone interviews will be conducted with approximately 15-20 participants representing each case identified through quantitative research. Data collection for in-depth interviews is based on the principles of Critical Incident Technique (CIT) as a qualitative approach [4][14] 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. Since the CIT also examines more complex sets of behavioral intentions [35] and a flexible set of procedures designed to collect data of participants’ behaviors during actual situations [19], the CIT in the study will collect direct observations of online Q&A users’ questioning behaviors. This will provide insights into specific situations or incidents of the users’ questioning behaviors, and pave ways to find answers to the research questions posited in the proposed research.

EXPECTED IMPLICATIONS
Understanding online Q&A 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 for conceptualizing different contexts of information needs that drive people into social interactions for seeking information in an online Q&A environment. Moreover, one of the main aspects in the studies of online Q&A is to measure information relevance and quality. To do so, previous studies have paid attention to textual features (e.g., length of the answer’s content) and non-textual features (e.g., information from the answerer’s profile) to evaluate the quality of information. (see [30] for details of criteria employed for predicting information quality) to evaluate the quality of information. Even though the recent research has also focused on new criteria (e.g., politeness, novelty, etc.) that can be employed to assess the quality of information ([16][18][30]) to analyze how information satisfies an asker’s need, there is still a lack of consideration of an asker’s problems or the situational context behind asking a question within an online Q&A service.

As Agichtein, Liu, and Bian [1] suggest, personalized approaches to understand each individual information seeker can yield general recommendations on the assessment of information quality in online Q&A. Therefore, findings from the proposed research 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 evaluate information relevance and satisfaction, including the motivations and expectations of users when seeking information.
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