The Dissertation Committee for Kevin Sean Rioux Certifies that this is the approved version of the following dissertation:

Information Acquiring-and-sharing in Internet-based Environments: An Exploratory Study of Individual User Behaviors

Committee:

Philip Doty, Supervisor

Sanda Erdelez, Co-Supervisor

Dominic Lasorsa

Mary Lynn Rice-Lively

Ronald Wyllys

Information Acquiring-and-sharing in Internet-based Environments: An Exploratory Study of Individual User Behaviors

by

Kevin Sean Rioux, B.A., M.A., M.L.I.S.

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Dedication

For my family: Linda Cornish Rioux, Lisa Rioux Delhomme, Andry Delhomme, Lauren Delhomme, Luke Delhomme, Leslie Delhomme, Aurora Cornish, and Rose Rioux.

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Information Acquiring-and-sharing in Internet-based Environments: An Exploratory Study of Individual User Behaviors

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Supervisors: Philip Doty and Sanda Erdelez

Adoption of Internet-based information resources and dissemination tools is rapidly increasing. Given the far-reaching implications of this trend, researchers in library and information science (LIS) are seeking to better understand individual users' behaviors in these contexts. A user information behavior that is under-examined in the human information behavior literature is information acquiring-and-sharing (IA&S) in Internet-based environments. This overlooked status is problematic, because we cannot get a complete picture of individuals' information use behavior if we exclude what may be the relatively common behavior of IA&S in Internet environments.

The objectives of this study were to systematically examine information IA&S behaviors among individual Internet users, and to develop theory statements that describe and explain these phenomena. Toward these goals, the following research questions were developed:

1. What are the behaviors and processes associated with information acquiring-and-sharing in Internet-based environments?

2. What are the motivators and corresponding affective and cognitive states associated with information acquiring-and-sharing in Internet-based environments?

Respondents targeted for this study were graduate students who study and/or work at a medium-sized American public university who regularly acquire-and-share information in Internet environments. Given the varied social roles and information needs of these Internet users, they demonstrated a broad array of variables that characterize this behavior.

An array of techniques that included screening surveys, critical incident logs and grounded theory interview techniques were used to collect data that address the exploratory research questions. Survey data were analyzed using simple descriptive statistics. Interview, field note and critical incident data were analyzed using open, axial, and selective coding processes.

Findings show that information IA&S in Internet environments is driven by a mix of cognitive, affective, motivational, procedural, and need attributes. An emergent conceptual framework based on grounded substantive theories is proposed that identifies, explains, and integrates these attributes. The intention of this effort is to broaden existing information behavior theories and models, and to inform the practice of information professionals who are tasked with developing and improving information systems.

Table of Contents

List of Tables

Chapter 1: The Problem

Internet-based information resources such as the World Wide Web, corporate intranets, collaborative work tools, etc., have become enormously popular across all categories of information users (Georgia Institute of Technology, 1999; Nua, 2003; Global Reach, 2003). Adoption rates of Internet-based communication channels and information dissemination tools have also rapidly increased. For example, by the end of 2000, almost half (49%) of the U.S. population was using email regularly, as the total number of electronic mailboxes jumped 73% from the end of 1998 (Messaging Online, 2001). By June, 2003, there were approximately 130 million subscribers to LISTSERV electronic mailing lists, which by that time were distributing nearly 24 million email messages daily (LISTSERV, 2003). Instant messaging (IM) clients have also quickly gained a wide user base among general Internet users, and several firms are developing IM clients specifically for organizational/corporate use (Fisher, 2000; Hertzberg, 2003). Given the information implications for the widespread adoption of the Internet and its associated communication tools, researchers in library and information science (LIS) are seeking to better understand individual users' information behaviors in these contexts.

Recent studies show that new information behaviors are observable in Internet environments (e.g., Curtis et al., 1997; Marchionini, 1995; Parker, 1998; Shepherd et al., 2001). Studies have also been done on "Internet versions" of information behaviors that have been previously examined in more traditional contexts such as libraries, print materials, T.V., etc. (e.g., Erdelez & Rioux, 2000; Pelzer et al., 1998; Shapira et al., 1996; Wellman & Haythornthwaite, 2002). A user information behavior that is under-examined

in the human information behavior literature is *information acquiring-and-sharing in Internet environments,* which was initially identified and described by Rioux (2000) as "sharing information found for others on the Web."

Comparisons of different Internet user scenarios provide an illustration of this phenomenon. For example, in a "standard" Web use scenario, an individual logs onto the Web, finds (or does not find) the information he needs, and then logs off. Yet, in some instances, a different, more complex behavioral scenario is enacted. These are situations in which a user finds the information that she seeks on the Web, believes that it could also be of interest to someone she knows, and then subsequently shares the information in some way. A variation of this scenario is a situation in which a user does not find the information that he seeks in his company's Internet-based group-work system, but instead, accidentally finds unrelated information that he believes is of interest to someone he knows, and then shares that information in some way. Still another instance occurs when a USENET user finds information that addresses her interests, and somehow finds other information that she believes is of interest to someone she knows, and then shares that information in some way. These and other possible acquiring-and-sharing scenarios imply that information sharing may or may not be linked to the information content that is associated with the initial search task.

While it is likely that information acquiring-and-sharing (IA&S) behaviors occur in several different information environments (e.g., print materials, television, browsing in libraries and stores, etc.), this study focuses solely on IA&S in Internet-based environments, a stance that is justified by the aforementioned research void in this area. Additional support for this position is found in works by Jubert (1999), Erdelez and Rioux (2000b), and Millen and Dray (2000), which indicate that features and

characteristics of Internet-based information systems may actually facilitate individuals' IA&S behavior.

The LIS discipline has established a number of research streams that examine information behavior, many of which focus on information seeking and information needs (e.g., Krikelas, 1983; Bates, 1989; Brown, 1991). Studies of the cognitive (e.g., Belkin et al., 1982; Ingwersen, 1982; Dervin, 1992) and affective states (e.g., Kuhlthau, 1993) of information users are also featured in LIS literature, as are some general models of information behaviors (e.g., Brown, 1991; Wilson, 1999).

Despite the breadth of LIS information behavior research, specific accounts of individual users' behaviors associated with IA&S are not evident in the literature. This overlooked status is problematic, because we cannot get a complete picture of individuals' information use behavior if we exclude what may be the relatively common behavior of IA&S in Internet environments.

One may assert that IA&S behaviors are fundamentally social behaviors, which may partially account for why information sharing in networked environments has been examined primarily as a group phenomenon that occurs mostly in the workplace, rather than a specific information behavior enacted by individuals. For example, in fields related to LIS, emphasis has been placed on information sharing behaviors in collaboratories (e.g., Ross-Flanigan, 1998; Henline, 1998), computer-supported work teams (e.g., Schmidt & Simone, 1996; Kies et al., 1998), and among specific organization types (e.g., Harper & Sellen, 1995; Prinz & Kolvenbach, 1996) and professional groups (e.g., Finholt & Olson., 1997; Kilman & Forslund, 1997). Although these works are informative, they do not specifically target individuals' IA&S behaviors for examination.

Yet, IA&S phenomena certainly include the behavioral components of individual users as well as social, organizational and task variables. Current computing designs

further underscore the individualized nature of IA&S in Internet-based environments. Presently, most people enter the Internet via a personal computer (PC) equipped with a single-user interface. Although many of these PC's are networked in some way, they are designed to support one user at a time. Thus, IA&S in Internet environments often support group information needs, yet users do not typically enact this behavior with other individuals or practice it as a part of a group.

Today the Internet is fully established as a dynamic and interactive medium that serves as a source of information and entertainment as well as a means for connecting people locally and throughout the world (Papacharissi & Rubin, 2000; Burrows, et al. 2000). Furthermore, it is quickly changing the way organizations operate (Phillips, 2000; Cooper, 2000), influencing the way scholarly information is accessed and used (Kaminer & Braunstein, 1998; Lazinger et al., 1997) and is generating a number of lucrative business opportunities (Mehadevan, 2000; Werbach, 2000) and novel employment situations (Miles, 2000; Wagner, 2000).

Because Internet resources are proliferating and more individuals and businesses are adopting Internet-based communication systems, IA&S behaviors are becoming important to a number of stakeholders. For example, acquiring-and-sharing behaviors have already attracted the attention of online newspaper publishers (e.g., The New York Times, The Chicago Tribune, USA Today), retail and service marketers (e.g., OldNavy.com and Expedia.com Travel) and political campaigners (e.g., Moveon.org, and deanforamerica.com), who have integrated electronic sharing tools into their Web sites as a way to potentially extend their messages and find-tune their target audiences (Rioux, 2000; Erdelez & Rioux, 2000a). Practitioners (e.g., distributed workgroup managers, software engineers, e-commerce and not-for-profit Web masters, distance learning program designers, digital librarians, public health officials, etc.) who seek to leverage

Internet-based information systems in organizations and educational contexts are also interested in learning more about how individuals share information that they find for other people (Bentley et al., 1997; Bonk & King, 1998; Fox & Rainie, 2000; Hall & Enyedy, 1997; Levy & Marshall, 1995; Roseman & Greenberg, 1996). Examinations of various types of information use and information behaviors such as IA&S in Internet environments are also well received by academic researchers, who strive to understand all information behaviors in order to inform information system design (Boland et al., 1994; Bruce et al., 2002; Marchionnini, 1995; Pettigrew et al., 2001; Twidale & Nichols, 1998).

Given the widespread adoption of Internet-based information and communication systems, the number of interested stakeholders, and the potential to expand existing information science theory (as well as create new theory), examining individuals' use of the Internet to acquire-and-share information is a pertinent and important area of inquiry.

RESEARCH QUESTIONS

Prior to this study, a systematic examination of IA&S behaviors among individual Internet users had not been attempted. The objective of this study was to explicitly identify this process, and to develop substantive grounded theory that describes and explains its behavioral aspects and associated cognitive and affective variables. Strauss and Corbin (1998) characterize grounded theory as "theory that was derived from data, systematically gathered and analyzed through the research process" (p. 12). Typically, grounded theory is associated with qualitative research methods such as interviewing and observation. Given that this study was an exploration of a previously unexamined information behavior, this approach was appropriate.

The primary research questions that are addressed in this study are:

- What are the behaviors and processes associated with information acquiring-and-sharing in Internet-based environments?
- What are the motivators and corresponding affective and cognitive states associated with information acquiring-and-sharing in Internet-based environments?

Given the exploratory nature of the grounded theory research design, "secondary" guiding questions emerged. These questions referred to topics such as the type of information shared, the context in which it is shared, recipients of shared information, user evaluation of information, sender/user preferences, frequency of engagement, etc. Questions related to ensuring validity (i.e., member-checking) were also used.

The respondents targeted for this study were graduate students who study and/or work at a medium-sized public university in the Southeastern United States, and who regularly acquire-and-share information in Internet-based environments. Given the varied social roles (e.g., student, co-worker, family member, friend) and varied information needs regarding work, recreation, study, etc., of these Internet users, these respondents demonstrated a broad array of variables that characterize IA&S in Internet environments.

Data were collected using multiple methods (i.e., triangulation). In the beginning of the study, written surveys were administered to respondents in order to collect quantitative data and preliminary qualitative data about their Internet-based acquiring-and-sharing behaviors. Next, individual respondents who indicated on the surveys that they frequently acquire-and-share in Internet environments were selectively sampled from the initially surveyed group. Semi-structured interviewing techniques were then used to conduct interviews with the selected respondents and to analyze data on these individuals' self-reported descriptions of specific processes in which they engaged during

acquiring-and-sharing episodes. Additionally, respondents were asked to describe their affective and cognitive states while they engaged in IA&S behaviors on the Internet. After the researcher established a rapport with respondents, he asked them to keep critical incident logs describing their Internet-based IA&S episodes. Respondents were also asked to send a copy of the information they acquired to the researcher using the same sharing method they used for the intended recipient. These efforts resulted in quantitative and descriptive data about sharing methods, types of information shared, contexts, recipients, etc., that supplemented interview data.

SUMMARY

This exploratory study presents grounded theory and findings that describe and explain how individual users acquire-and-share information in Internet environments. Hopefully, this effort will serve to broaden existing LIS theories and models, and will inform the practice of information professionals who are tasked with developing and improving information systems.

Chapter 2: Literature Review

Before pursuing research questions that specifically address individuals' information acquiring-and-sharing (IA&S) behaviors in Internet environments, it is useful to review background literatures which reflect key facets of this phenomenon. This review is divided into the following three sections:

- *Emergence of User-centered Information Behavior Research.* This section provides an overview of user-centered information behavior research, and positions this study within contemporary areas of inquiry. The notion of context (i.e., the interrelated conditions in which information behavior occurs) is also discussed, emphasizing individuals' acquiring-and-sharing behaviors that occur in Internet-based environments.
- *Information Acquiring Behaviors*. This section deals with information need, motivation for information behavior, and the cognitive and affective aspects of information behavior. A guiding conceptualization of "information acquiring behavior" (one of the two primary components of individuals' information acquiring-and-sharing behaviors in Internet environments) is also presented.
- *Information Sharing Behaviors.* This section examines literatures that address forms of information sharing (another primary component of individuals' information acquiring-and-sharing behavior).

These sections address behaviors associated with IA&S in Internet-based environments as they are explored in this study.

EMERGENCE OF USER-CENTERED INFORMATION BEHAVIOR RESEARCH

One can better understand IA&S behaviors in Internet environments by tracing the emergence of information behavior research. This section describes how information behavior research has evolved, how theories and research methods in the field have developed, and how information use and users came to be emphasized in research. A guiding definition of "information behavior" is identified, and the notion of context (i.e., the interrelated conditions in which information behavior occurs) is discussed.

Conceptualizing "Information Behavior"

In order to examine information acquiring-and-sharing as an "information behavior," it is useful to begin with a definition of this term. Although no universally accepted, all-encompassing definition of "information behavior" has emerged, Wilson offers the following concise explanation:

> ***Information behavior*** is the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking and information use. Thus it includes face-to-face communication with others, as well as the passive reception of information as in, for example, watching TV advertisements, without any intention to act on the information given (2000, p. 49).

This broad definition is used to conceptualize the information acquiring-and-sharing behaviors considered in this exploratory study as "information behaviors."

Information behavior research emerged from library science and the field of documentation largely in response to the post-World War II information needs of military and industrial development projects (Lilley & Trice, 1989). By the late 1940s, the East/West technology race and the large amounts of newly declassified scientific information prompted a great deal of interest in how scientists could take advantage of available information resources and systems, and conferences were called to address these issues. Wilson (1999) identifies the 1948 Royal Society Scientific Information

Conference in London as the "beginning of the modern study of human information seeking behavior" (p. 50). Commentaries illustrating this initial interest in how members of the scientific community *use information* (emphasis added) in their work are offered throughout the Conference Report (Royal Society, 1948).

Ten years later, information researchers continued to be primarily concerned with the information needs of scientists. Papers presented at the 1958 International Conference on Scientific Information in Washington, DC, focused on then-novel ideas about scientists' "information requirements" (Herner & Herner, 1958), "literature use" (Hogg & Smith, 1958) and "information gathering" (Herner, 1958). The ultimate goal of these early information behavior researches was the creation of project-specific (e.g., atomic energy, space exploration, etc.) and discipline-specific (e.g., engineering, chemistry, physics, etc.) scientific information systems (National Research Council, 1958).

By the 1960s, the information science community had coalesced into a field that supported a number of key conferences and publications, one of which is the *Annual Review of Information Science and Technology* (*ARIST*). In the 38 years of its existence, *ARIST* has included chapters on information use and users 12 times. Throughout the majority of these chapters, information researchers acknowledge that conceptual frameworks, methodology and theory creation in information use and user studies were only slowly evolving.

For example, Menzel (1966), who formally introduces to the field the concepts of "information users" and "information uses," was one of the earliest authors to assert that methodological and theoretical paucities existed in the then-fledgling information science field. Allen (1969) acknowledges methodological improvements in use and user studies made by 1969, but calls for efforts to improve rigor. Lipetz (1970) endorsed efforts to

bring more empiricism and scientific rationality to use and user studies in order to bolster their relevance to practitioners. He goes on to say that the predictive power of use and user research (as of 1970) was weak, which hampered ". . . the development of systems to meet users' needs." Crane (1971) made a departure from the pragmatism of her contemporaries and called for an emphasis on information use and user theory development. Lin and Garvey (1971), in their discussion of behavioral observation brought up the (then) novel idea of "borrowing" from the social sciences to develop use and user theories and methods. Reviews by Martyn (1975) and Crawford (1978) call for research streams that look at a variety of user types (in addition to scientists) in order to improve information resources.

From System-centered to User-centered Information Behavior Research

The next *ARIST* chapter on use and users by Dervin and Nilan (1986) reflects a major turning point in the LIS literature, with the authors asserting that a paradigmatic shift in perspective toward the information user had occurred in information studies by 1985. Reviewing both research pieces and critical works, Dervin and Nilan (1986) show that prior to 1978, most information behavior research reflected a perspective that emphasized the adaptation of users to information system outputs rather than creating information systems that are user driven. Information was seen as being objective, users were seen as simple processors of information, and examination of information use focused on externally observable behavior and events. Inquiry was focused on answering "what?" questions (e.g., What people use what information systems?).

Dervin and Nilan (1986) assert that by the mid-1980s, the emerging consensus in the field was that system-focused research was not informing practice in ways that resulted in more comfortable and convenient information access, increased efficiency, and increased satisfaction and productivity. They show that, during this time, a more

holistic approach to information problems that considered human factors (e.g., information needs, behaviors, preferences, uses) was becoming seen as a way to improve information services (e.g., Garvey et al., 1979; Mick et al., 1980). Dervin and Nilan characterize the then-emergent user-centered paradigm as one that considers information to be a non-static entity that is constantly constructed by humans both within and external to information systems and within particular situations or contexts. This approach also looks at user interactions with information systems and what follows these interactions. Inquiry based in this paradigm focuses on "how?" questions (e.g., How do people define information needs in different situations and contexts? How the do they present their information need to systems? How do they use what the system offers them?).

Hewins (1990) revisits this "user-centered paradigm shift" topic in a subsequent *ARIST* chapter, and comes to the same conclusions as Dervin and Nilan (1986). She indicates that the then-novel user-centric ideas profiled by Dervin and Nilan (1986) were generally accepted and mainstream by early 1990. Wilson (2000) also confirms that the 1980s were a time when a "person-centered approach" emerged in LIS literature.

Recently, Pettigrew et al. (2001, p. 67) claim in their *ARIST* chapter that, since the early 1990's "another quantum leap has occurred" in the field, featuring an emerging body of theory that emphasizes contextual interplays of cognitive, social, cultural, organizational, affective and linguistic factors of information behavior. Pettigrew et al. (2001) assert that this research stream supports the notion that information behavior phenomena are part of the human communicative process.

Indeed, as shown by Vakkari et al. (1997), Wilson and Allen (1999), McKechnie et al. (2001), and Bates (2002), these "contextual interplays" have become an important area of inquiry. A wide variety of information behavior context studies have been published in recent years. For example, Beyer and Holtzblatt (1998) discuss how various

use and user contexts influence information system design. Williamson (1997) reports on how older adults seek out information using the telephone. Spink et al. (1999) discuss word-of-mouth information seeking within multi-member, low-income African-American households. Huotari and Chatman (2001) offer frameworks that consider information behaviors that occur within everyday social situations. Mutch (2000) explores how management teams use information in large organizations. For the purpose of this study, *context* generally refers to the interrelated conditions in which the given information behavior occurs. Thus, context pertains to the information environment (workplace, home, and other public and private areas), the information medium (e.g., mass media, interpersonal conversation, telephone, reference materials, Internet, etc.), and social variables (e.g., demographics, workplace, school, group and family roles, and other personal and private scenarios).

As mentioned previously, information behavior has been explored generally in electronic media (e.g., Marchionini, 1995; Marchionini & Komlodi, 1998), and within group contexts (e.g., Boland et al., 1994; Lave & Wenger, 1991). This study takes a contextual departure from these earlier research streams in that it

1) specifically focuses on individuals' acquiring-and-sharing behaviors rather than information behaviors that occur in certain work groups, demographic groups, etc., and
2) limits the scope of observation to information IA&S in Internet environments such as the Web, corporate intranets, email, instant messaging, databases, and other sources delivered via the Internet.

Implications for This Study

This study of individual users' acquiring-and-sharing behaviors in Internet-based environments is a small part of the field's continuing effort, begun in the 1940s, to

understand all aspects of users' information behaviors. Taking a social science approach in creating grounded theory, this effort focuses on human factors associated with individuals' IA&S in Internet environments, which places this work within the current user-centered research paradigm.

An important query suggested by this review section is: what is the relationship between this study of IA&S in Internet environments and current models of information behavior? In an effort to explore this broad question more fully, subsequent sections will examine each component of individual users' IA&S behaviors in Internet-based environments.

INFORMATION ACQUIRING BEHAVIORS

Information acquisition is one of the two primary components of the behavioral phenomena under consideration in this study. Wilson (1999) suggests that information needs, motivation, cognition, and affect are useful frameworks in which to study information behaviors. Mindful of these frameworks and of the guiding conceptualization of information acquisition that is articulated in beginning of this section, the remainder of this section reviews literatures on information acquisition.

Conceptualizing "Information Acquiring Behaviors"

In much of the LIS literature, human information behavior is assumed to be an active pursuit of information. For example, in his overview of human information behavior, Wilson (2000) notes that information behaviors are often referred to in the literature as information seeking or information searching. He suggests that information *seeking* behavior is the purposive seeking of information in order to fulfill a goal. In the course of seeking, an individual may interact with "manual" information systems (such as a newspaper or library), or with computer-based systems (such as the World Wide Web).

Wilson describes information *searching* behavior as "micro-levels" of behavior employed by individuals while they purposefully interact with information systems of all kinds. Examples include evaluating sources, planning a library search, or clicking on hyperlinks. Another common LIS term, information retrieval (or IR), most often refers to actively seeking and obtaining information from computer systems (e.g., Saracevic, 1996; Ingwersen, 1992), and is related to Wilson's (2000) notion of information searching.

The literature also acknowledges alternative forms of obtaining information that are non-directed, casual, or non-specific. For example, in a study of scientists' information behaviors, Voigt (1961) indicates that scientists obtain information in non-specific and non-directed ways (e.g., via casual conversations with colleagues) as well as by specific and directed searches. Vickery (1977), Ellis (1989) and Chang and Rice (1993) discuss how browsing in various information environments is a very common and often undirected human information behavior that is nevertheless quite fruitful. Presenting her "berrypicking/evolving" model of information behavior, Bates (1989) asserts that active, linear information seeking/searching/retrieval models that do not incorporate non-directed information behaviors may be neglecting the full range of user behaviors. Noting that active searching has been the primary emphasis in the literature, Wilson (1996) suggests that "passive attention, passive search, and ongoing search" be added to the mix of observable information behaviors. Erdelez (1999) articulates a process called "information encountering" in which people often find information when they are not seeking any, or they may not be actively involved in looking for the particular information they happen to find. In a review of consumer information behavior, Bettman (1978, p. 35) notes that

> information can be acquired by actively <u>seeking</u> it while engaged in some choice process, or by being <u>confronted</u> with it during the course of other activities. . . .

> Thus, information acquisition is not synonymous with information search, but includes information obtained without actively looking for it.

From these researches, we can see that the process of information acquisition can be active, directed, and purposeful as well as passive, non-directed and non-specific. This suggests that a broadened conceptualization of information behavior that goes beyond the specific notions of information seeking, searching, and retrieval would be useful. The term "information acquisition", which expands to cover *all* ways of obtaining information, is a richer and more inclusive way to describe the full range of human information behavior. Because IA&S behaviors are under-explored, and because it is likely that individual Internet users obtain information via different modes (seeking, searching, and retrieving), information acquisition, as it is described here, is an appropriate framework in which pursue this study.

Information Needs and Other Motivations for Information Acquiring Behavior

Psychology researchers acknowledge that capturing data about human motivation is problematic because motivation is a complex and varied concept (Petri & Govern, 2004). Cantor et al. (1986, p. 96) agree, noting that "psychologists have continuously grappled with the task of connecting motivation to observable behavior." Cantor et al. (1986, p. 96) add that although much of the work in detecting the presence of behavioral motives has been successful, "the capacity to predict how motivation will be manifest in an individual's actions remains somewhat limited." Evans (1989) concurs, asserting that behavior is usually determined by so many factors that specifying all of them is impossible.

However, Evans (1989) also argues that the intricacy of motivation does not mean that researchers are prevented from scientific prediction about motivation; rather it

means that motivational predictions are usually probabilistic. Mook (1987) supports this view, and indicates that probability statements about motivation are widely regarded by researchers as being helpful in creating additional understanding about behavioral phenomena. Mook (1987) goes on to say that asking individuals about their behavioral motivations is useful in building empathetic understanding and gathering data on individuals' perceptions of their own motivations.

As noted by Case (2002), several authors assert that individual users' information needs are the catalyst for information behavior (e.g., Allen, 1996; Dervin & Nilan, 1986; Garvey et al., 1979; Large et al., 1999; Mick et al., 1980; White, 1981). Their assumption is that an understanding of those needs is key to understanding information behavior and improving information systems.

Information needs are often described as being initiated by people's attempts to address everyday challenges or resolve uncertainties or knowledge insufficiencies. For example, Dervin (1992) asserts that information behavior begins with the user acknowledging a gap in his/her knowledge of how to deal with a life situation. Marchionini (1995, p. 28) positions information seeking as a problem-solving activity, "a process driven by life itself." Kirkelas (1983) describes information need as the general recognition of the existence of uncertainty, and suggests that individuals' information behavior depends on whether the information need is *immediate* or *deferred*. Immediate needs, as the term implies, are needs that promptly trigger information behavior. Deferred needs are those that can wait to be addressed at another time. Kirkelas' need types are similar to those discussed by Taylor's (1986) *short-term needs* and *long-term*

interests, Mick et al.'s (1980) *applicational needs* and *nutritional needs*, and Childers' (1975) *kinetic needs* and *potential needs*.

Wilson (1997) asserts that, if a person experiences an information need, there must be a corresponding motive to actually engage in information behavior. To support his stance, he draws upon the work of social scientists in fields related to LIS in explaining the link between behavioral motivation and information needs. For example, Wilson (1997) cites Morgan and King (1971) who propose that generalized needs emerge from physiological motives (e.g., hunger, thirst), unlearned motives (curiosity, sensory stimulation) and social motives (the desire for affiliation, approval, status). Wilson (1997) credits Rubin (1986) with the notion that people actively seek information to satisfy these needs. Wilson also asserts that motive is implicit in gratification theory, a mass communication research stream that assumes that audiences gratify needs through the active use of various media (Fiske, 1990; Rubin, 1986). McQuail (1972) suggests that information needs gratification can be associated with diversion (e.g., escapism, emotional release), personal relationships (e.g., companionship, social utility) and personal identity (e.g., reality exploration, value reinforcement). Similarly, Allen (1996) notes that there may be a variety of gratifications that are provided by the information seeking process that are not strictly information needs. He suggests other incentives for information behavior, such as entertainment or keeping up with general current events or job developments.

Most discussions of information need concentrate solely on the needs of individual users. Yet, as Allen (1996) posits, people need, seek and use information both

as individuals and as members of groups. That is, some information behaviors are individualized, whereas others are social or collective in nature. Allen (1996) goes on to suggest that strict dichotomies between individual and social information behaviors may be limiting. Keeping Allen (1996) in mind, this study takes an approach that considers both the information needs of the individual user as well as the information needs of other people that the individual user may know. Although information behaviors that are enacted in response to other people's information needs are not yet major research streams within the LIS literature, the issue has been acknowledged. For example, in his general model of information behavior, Wilson asserts that:

> Part of the information seeking process may involve other people through information exchange, and that information perceived as useful may be passed to other people, as well as being used (or instead of being used) by the person himself or herself (1999, p. 251).

Similarly, Krikelas (1983) includes "information giving" as an element of his model of information behavior. He asserts that diffusion of information is an integral part of a generalized model of information behavior. Studies conducted by Rioux (2000) and Erdelez and Rioux (2000b) support Krikelas' (1983) model. In their study of Web users, Erdelez and Rioux (2000b) show that the Web frequently provides opportunities for accidental discovery (i.e., information encountering) of information that users may find of interest to themselves as well as to other people they know. Among their respondents, emailing was one of the most common methods used to share information encountered for others. Rioux (2000) shows that users who share information on the Web are often motivated by the pleasure they get from acquiring-and-sharing in this environment.

Examining other people's information needs from a different perspective, Gross (1995) notes that people often seek information not because *they* have identified a personal information need, but because they have been set on that course by *someone else* such as a teacher or work supervisor. That is, the information question has been "imposed" upon him or her.

The notion that users acquire information in response to both their own needs and motivations as well as the needs and motivations of other people they know acknowledges a holistic rather than atomistic view of human experience. This is congruent with both the current human-centered research paradigm within LIS as well as the information acquisition and information behavior perspectives discussed in other sections of this chapter.

Cognition and Affect in Information Acquiring Behavior

Consistent with the shift in research emphasis on the user, further understanding of individual users' cognitive states has been recognized by scientists as an important way to improve information systems since the late 1970s (e.g., DeMey, 1977). Since then, the cognitive processes that are involved in learning about, interpreting, defining and meeting information needs have been examined from numerous perspectives. In fact, Allen (1991) notes that the term "cognitive" has been used in so many different ways that the meaning is sometimes obscure. To simplify discussion of the subject, Allen (1996) offers a definition of the cognitive perspective below. This simple and broad definition is an appropriate one to guide this exploratory study.

> [The cognitive perspective] is an attempt to explain behavior by reference to what people think and know. It seeks to concentrate on the knowledge structures of people (such as what they know about a particular topic) or their cognitive processes (such as thinking, learning, remembering and problem solving). (Allen, 1996, p. 58)

Wilson (1994) makes a distinction between cognitive *state* and cognitive *style*. He asserts that an individual's cognitive state is a variable that is dependent on the information seeking and information use context, and that cognitive style is an innate characteristic of the individual.

Wilson (1994) points to Belkin et al.'s (1985) concept of "anomalous states of knowledge" (ASK) as an example of a cognitive state. The essential premise of ASK is that information needs arise from anomalies (i.e., perceived irregularities or gaps) in a user's state of knowledge about a particular subject. In general, users experiencing ASK are unable to precisely specify the kind of information needed to resolve the anomaly (Belkin, 1980; Belkin et al., 1985). Belkin et al. (1985, p. 66) use this premise to criticize information systems based on the "best-match" principle. In their view,

> It is unrealistic (in general) to ask the user of an IR system to say exactly what it is that she/he needs to know, since it is just the lack of that knowledge which has brought her/him to the system in the first place. (Belkin et al., 1985, p. 66)

Instead of "best match," Belkin et al. (1985) suggest that systems be developed that focus on building a representation of the particular ASK-state. Morris (1994) suggests that this would look like a semantic network. After the ASK-state is fully realized, appropriate steps can be taken to fill in the cognitive blanks, thus changing the individual user's cognitive state.

Dervin's (1983) sensemaking model is somewhat more dependent on individual users' cognitive styles. The sensemaking notion is that individuals who have information needs experience a cognitive gap that prevents them from making sense of a particular life situation, and they seek information to fill that gap. However, during this information search, an appropriate course of action is not indicated, and the individual is placed in a situation where "making sense fails." As the user collects information in the gap phase, he/she learns more about his/her situation, becomes better at interpreting it,

and then is able to select a course of action or behavior that helps him/her make sense of his/her situation.

Sensemaking acknowledges that individual cognitive styles will lead to different information behaviors, two of which are communicating with others and using language to mentally and verbally articulate "gap" situations and construct personal meanings. Sensemaking is internal (i.e., cognitive) and external (i.e., procedural) behavior that allows the individual to construct his/her movement through time-space (Dervin, 1992).

Wilson's (1994) view of the cognitive aspects of information need and information behavior also addresses individual users' cognitive styles. His perspective suggests that individuals construct their own social "world" from the world of appearances around them. However, they do this only with the help of others who have already placed a cognitive structure on the world of appearances. Thus, all of the devices that we use to organize the cognitive structures of the world (e.g., information systems) are socially constructed. These social constructions help the individual to construct his or her own "meanings" depending on his/her cognitive style.

Affective aspects of information behavior are often linked to Kuhlthau's work (e.g., Isbell & Kammerlocher, 1998; Kennedy et al., 1999). Kuhlthau's information-seeking process (ISP) model builds on Dervin's sensemaking, and Belkin et al.'s ASK hypothesis (Kuhlthau, 1991). The stages of the linear ISP model are Initiation, Selection, Exploration, Formulation, Collection, and Presentation. A closer look at the Initiation phase gives an example of how the model accounts for user affects. This phase is characterized by feelings of uncertainty, and vague and general thoughts about the problem area. Among the actions at this stage are acknowledging a need to seek information. A user may experience feelings of doubt, confusion and frustration at first. As the search process yields positive results, the user's feelings change, as confidence

increases. As useful material is collected in subsequent phases, the user experiences feelings of relief and satisfaction. Kuhlthau's ISP model is significant because it introduces the notion that a user's affective state may influence his/her information behavior and associated cognitive processes. It covers three realms of activity: physical (actual actions taken), affective (feelings experienced) and cognitive (thoughts concerning the process, the resource, and the content). These three elements are considered holistically; Kuhlthau does not separate them into individual areas of inquiry. Characteristic of the "new paradigm," Kuhlthau's ISP model focuses more on the user than the information system; the information system is considered only to the extent that a user's ISP will influence interaction with it.

This overview of the cognitive and affective aspects of information behavior re-emphasizes the importance of maintaining a broad conceptualization of how people obtain and process information, and enhances the view of information behavior as a rich, multi-faceted phenomenon. It also buttresses the notion that newly observable facets of information behavior, such as information acquiring-and-sharing in Internet environments, are worthy of additional research.

Implications for this Study

In order to develop grounded theory that describes and explains information IA&S in Internet environments, it is useful to examine information acquisition, a primary behavioral component of IA&S in Internet environments. Important areas of inquiry suggested by this section are:

- The specific information acquisition processes associated with IA&S in Internet-based environments;
- Internet users' perceived cognitive and affective states as they mentally "store" and recall what they believe are the information needs of others;

- The needs and motivations that prompt information acquisition processes associated with IA&S in Internet-based environments.

The next section will focus on literatures pertaining to the sharing component of IA&S in Internet environments.

INFORMATION SHARING BEHAVIORS

Like information acquiring, information sharing is a primary component of the behavioral phenomena under consideration in this study. This section reviews literatures that examine forms of information acquiring-and-sharing and information sharing.

Conceptualizing Information Sharing Behaviors

In a precursor to the present study, Rioux (2000) initially identifies information acquiring-and-sharing in his examination of SIFFOW (*S*haring *I*nformation *F*ound *F*or *O*thers on the *W*eb) behaviors. Rioux's (2000) findings show that sharing information found for others on the Web is an identifiable, natural, highly social and pleasant information behavior that is supported by habituated email-based sharing strategies. A subsequent study conducted by Erdelez and Rioux (2000b) suggests that many Web users accidentally discover (or *encounter*) information for others, and frequently share that information in some way.

Aside from work done by Rioux (2000) and Erdelez and Rioux (2000), acquiring-and-sharing behaviors on the Web (and the Internet in general) have thus far received little attention in the human information behavior literature. However, these behaviors have been examined in non-Web electronic environments. For example, Maltz and Ehrlich (1995) describe a type of "active collaborative filtering" system implemented in a localized Lotus Notes environment in which individuals find interesting documents and then purposefully send colleagues hyperlink "pointers" to those documents. Included in

the pointer messages are personal annotations and contextual information. Twidale et al. (1997) note that browsing behavior in electronic databases does not necessarily need to be limited to the seeking individual's information interests—it can also include other people's interests. They refer to organizational colleagues' willingness to help in each others' information searching as "serendipitous altruism."

Information sharing has often been conceptualized in the context of social and organizational learning. For example, Lave and Wenger (1991) assert that we learn primarily through engagement in social exchanges and practices. Wenger (1998) goes on to say that as people come together to pursue shared goals (e.g., in a workplace), they create informal "communities of practice" in which learning takes place and information is communicated. Brown and Duguid (1991) use the community of practice idea to argue that learning, working and innovating (all of which depend on information exchange) can be improved by shifting emphasis from formal organizational charts and work descriptions to the actual communities and actual practices that emerge as employees engage in work tasks.

The community of practice concept is related to the idea of distributed cognition. As noted by Boland et al. (1994), distributed cognition is a process in which individuals make interpretations of their workplace situation and exchange this interpretive/contextual information with others with whom they have interdependencies, so that each may act with an understanding of their own situation and that of others. This process hopefully results in better-coordinated organizational operations.

Davenport and Prusak (1998, p. 64) specifically link social and organizational learning to knowledge management concepts, claiming that an organization's knowledge is "a social construct built out of the collective experience of its workforce, the talents it awards and the shared stories of . . . triumphs and mistakes." They affirm that successful

electronic knowledge management systems depend on individuals who share information that may be useful to others who access the system.

Gatekeeping is another well-established research stream that can inform our understanding of information sharing. In some early works on the dissemination of new technical information within organizations, Allen (1970, 1977) identified certain research and development lab employees who act as informal "information gatekeepers"—individuals who positively affect the transfer and use of information within an organization. Allen (1970) asserts that more information is exchanged when there is a friendship tie between individuals. The more an individual knows about another person's background, the more that individual is able to tailor his/her information responses. A more recent study by Weenig (1999) supports Allen (1977), finding that informal communication sources (especially strong ties) were more influential on attitudes towards innovations and adoption intentions.

Although Allen (1977) and Weenig (1999) find that information sharing is dependent on strong relationships, other studies show that weaker relationships, although often overlooked, are also important sources of information. Granovetter (1973) asserts that individuals often receive new information through weak ties and relationships (e.g., acquaintances) rather than strong ties (e.g., family, close friends) because strong ties often possess the same information as the given individual. Constant et al. (1996) observed that even in the absence of personal relationships, employees in a large company used email to give useful advice and solve the problems of fellow workers.

Implications for this Study

In order to develop grounded theory that describes and explains IA&S in Internet environments, it is useful to examine information sharing, one of two primary behavioral components of information acquiring-and-sharing in Internet environments. In this

review, we see that the role of individual behaviors within the social context of information exchange remains to be explicitly and systematically explored in the LIS field.

For this study, the researcher proceeded within the currently unique perspective that emphasizes individual (rather than group) factors in IA&S behaviors. Important areas of inquiry suggested by this section are:

- Needs and motivations that prompt information sharing processes associated with information acquiring-and-sharing in Internet-based environments;
- The specific information sharing processes associated with information acquiring-and-sharing in Internet-based environments;
- Internet users' perceived cognitive and affective states as they use various processes to share information that they believe is of interest to someone they know.

Summary

In order to provide background for this study of individuals' IA&S behaviors in Internet environments, literatures that discuss the primary aspects of this phenomenon are reviewed. The first section discusses how user-centered information behavior research evolved, and indicates that context is a significant variable to consider when studying information behaviors. The second section focuses on information acquisition (one of the two primary components of information acquiring-and-sharing behaviors in Internet environments), and examines information need, motivation for information behavior, and the cognitive and affective aspects of information behavior. The third section examines information sharing (the second component of information acquiring-and-sharing behaviors in Internet environments), and discusses the role of individual behaviors within the social context of information sharing.

The two general research questions addressed by this study are:

1. What are the behaviors and processes associated with information acquiring-and-sharing in Internet-based environments?
2. What are the motivators and corresponding affects associated with information acquiring-and-sharing in Internet-based environments?

In order to answer these questions, the following areas of inquiry were derived from the literature review:

- Internet users' perceived cognitive and affective states as they mentally "store" and recall what they believe are the information needs of others;
- The needs and motivations that prompt information acquisition processes associated with information acquiring-and-sharing in Internet-based environments;
- The specific information acquisition processes associated with information acquiring-and-sharing in Internet-based environments;
- Needs and motivations that prompt information sharing processes associated with information acquiring-and-sharing in Internet-based environments;
- The specific information sharing processes associated with information acquiring-and-sharing in Internet-based environments;
- Internet users' perceived cognitive and affective states as they use various processes to share information that they believe is of interest to someone they know.

These areas of inquiry guided the researcher through the data collection and analysis plans, which are discussed in Chapter 3: Methodology.

Chapter 3: Methodology

The objective of this study was to present substantive theory that offers a description and explanation of information acquiring-and-sharing behaviors (IA&S) in Internet-based environments. Toward this goal, the following exploratory research questions were pursued using grounded theory methods:

1. What are the behaviors and processes associated with information acquiring-and-sharing in Internet-based environments?
2. What are the motivators and corresponding affects associated with information acquiring-and-sharing in Internet-based environments?

This chapter covers the research design, purposeful sampling, research plan, data collection and analysis procedures, data collection instruments, and quality assurance measures employed in this study.

EXPLORATORY RESEARCH DESIGN

This exploratory study is an effort to present substantive theory that can be used to describe and provide an explanation for a range of behaviors, affects, and motivations associated with IA&S in Internet environments. Because this inquiry sought to apply in-depth description, process, and motivation questions to this behavioral phenomenon, grounded theory techniques were the primary data collection methodologies used. The grounded theory approach is a qualitative method introduced by Glaser and Strauss (1967) and expanded by Strauss and Corbin (1997; 1998). It was an appropriate

methodological framework to use because of its emphasis on building substantive grounded theory, a stance that is compatible with the study goals.

The use of qualitative methods is well established within the LIS literature. Noting that qualitative approaches are congruent with current information behavior research, Wilson (2000) claims that the contemporary emphasis on information users (rather than information systems) has been characterized by an increased use of qualitative methods. He cites influential qualitative research by Dervin (1983), Ellis and Haugan (1997), and Kuhlthau (1994) to support his assertions. Wilson (1997) also suggests that motives for information behavior can be discovered only by deduction or through the reports of the user, a stance that further supports the use of qualitative methods in this study.

Wolcott (1975) notes that the researcher is the "principal instrument" in qualitative studies. As such, a grounded theory researcher accepts certain responsibilities for his or her interpretive role (Strauss & Corbin, 1994). These responsibilities include:

1) giving "voice" to subjects' stories;
2) sharing what the researcher learned with his/her subjects, his/her disciplinary field, and the larger world;
3) giving clear indicators as to why the researcher interprets the collected data as s/he does.

Williams (1986) suggests that a qualitative researcher's capability and preparation are key to meeting these responsibilities. He asserts that researchers must be sensitive interviewers and perceptive observers who are able to take rich field notes, who can

communicate well, and be aware of their own biases. Furthermore, researchers need to be willing to acknowledge their predispositions, and be willing to study themselves to uncover the influence of their biases as they study phenomena.

In order to prepare to be a "principal instrument" for this study, the researcher, already experienced in social science research methods, took steps to become what Strauss & Corbin (1994) call "theoretically sensitized". That is, he:

1) sought formal training in grounded theory methods;
2) developed the recommended "mindful" approach to data collection that acknowledges potential bias;
3) made efforts to explain his research processes and interpretations as grounded theory emerged from his analysis of collected data.

In addition to qualitative grounded theory methods, (quantitative) survey techniques were used to select interview respondents and determine the frequencies of respondent behaviors, preferences, responses and sample demographics. These descriptive statistics were used to formulate and expand qualitative interview and critical incident log questions, and were analyzed concurrently with the qualitative data that constitute the bulk of the total data collected in this study. This "combining" of qualitative and quantitative research methods is a practice that has precedence in information science and social sciences literatures (e.g., Greene et al., 1989; Star & Ruhleder, 1996; Creswell, 2003).

Purposeful Sampling

As mentioned previously, the intent of this exploratory study was to present substantive grounded theory that offers a description and some explanation of information acquiring-and-sharing behaviors in Internet-based environments. Glaser and Strauss (1967) state that differences between "substantive theory" and "formal theory" are based on scope. Substantive theory is derived from more specific contexts and is intended to provide in-depth explanations, whereas formal theory, derived from a variety of conditions, is more abstract, and is intended to have broader explanatory power.

As a first step in building a substantive theory of IA&S in Internet-based environments, respondents in this study were selected using purposeful sampling techniques in which respondents were chosen based on the likelihood that their behaviors were within the scope of the research questions. This is in contrast to random sampling, which seeks to select samples that are representative of a population. Patton (1990, p. 169) provides support for this decision:

> The logic and power of purposeful sampling lies in selecting information-rich cases for study in depth. Information rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research.

The sampling pool was made up of graduate students enrolled in courses offered by a department of library and information studies at a medium-sized public university in the southeastern United States. This target group was chosen because it was proximate and convenient, and because graduate students spend much of their daily lives in information-rich situations and environments such as the Internet. Additionally, because these LIS graduate students are studying for careers as information workers, they may be more likely to demonstrate IA&S behavior, which may enhance the internal validity of this study.

It should be noted that the unit of analysis for this study is the *individual*. Although the purposeful sample (also a convenience sample) was made up of LIS graduate students, individuals from this group come from varied backgrounds and experiences, differ in age, and participate in several social contexts (e.g., student, spouse, parent, employee, hobbyist) which enhanced the richness of the collected data.

Interview respondents were chosen based on their indication on a screening survey that they frequently (i.e., three-to-five times per week or more) acquire-and-share information in Internet environments in various social contexts (e.g., with friends, family, co-workers), which make them "information-rich cases," as recommended by Patton (1990). A cash premium was offered as an incentive to participate in the interviews.

Initially, eighteen (18) respondents were scheduled for interviewing. Interviewing activity was discontinued after sixteen (16) respondents because at that point a level of theoretical saturation had been achieved. Theoretical saturation refers to the point in the research process when no new information that addresses the research questions emerges (Strauss & Corbin, 1998).

Research Plan

This study followed a multi-phase research plan which is summarized in Table 1 below.

Data Collection Procedures

Denzin and Lincoln (1994) characterize qualitative research as "multi-method" in approach. They go on to state that the use of multiple data collection methods, or triangulation, "reflects an attempt to secure an in-depth understanding of the phenomenon in question."

Taking a cue from these authors, this study also relied on triangulation, or the use of multiple data collection methods to maximize understanding of IA&S behaviors in Internet environments. The data collection and analysis procedures outlined in the Research Plan are detailed below.

Table 1: Research Phases

Phase	Objectives	Activities	Data Collection Instruments
1	Test data collection instruments	• Pilot test data collection instruments • Revise data collection instrument based on pilot test findings	• Screening/Demographic Questionnaire • Semi-structured interview guide • Critical incident log
2	Select Respondent Sample	• Administer screening/demographic survey • Perform initial quantitative analysis on survey data • Compile list of respondents	• Screening/Demographic Questionnaire
3	Data Collection Data Analysis	• Audiotape semi-structured interviews • Compile field notes • Create initial iterative coding scheme • Analyze transcribed interviews • Analyze quantitative survey data	• Semi-structured interview guide
4	Data Collection Data Analysis	• Collect/receive critical incident data via email • Conduct analysis and coding of critical incident data	• Critical incident log
5	Advanced Data Analysis Member Checking	• Coding, grouping and re-coding the transcribed interview data • Solicit participant feedback on initial findings	• Research report draft
6	Reporting	• Final comprehensive analysis of collected data • Report generation	

Phase 1: Pilot Test Data Collection Instruments

A screening/demographic questionnaire (See Appendix A for full text), a semi-structured interview guide (See Appendix B for full text), and critical incident logs (See Appendix C for full text) were the data collection instruments used in this study. In Phase 1, a pilot test of these three data collection instruments was conducted with three (3) members of the targeted group of graduate students. The instruments were revised based on the findings of this test.

Phase 2: Sample Selection

Interview respondent selection was made with the aid of the written screening/demographic questionnaire (See Appendix A for full text) which featured mostly closed-ended questions that focused on demographics, occupational, recreational and life roles, Internet use, information acquiring behaviors, and information sharing behaviors. A total of eighty-four (84) paper-and-pencil screening/demographic questionnaires were distributed during class time to graduate students enrolled in four (4) graduate-level LIS courses. Responses were collected on sixty-seven (67) of them. These data (which were analyzed using descriptive statistics) were used to better understand each respondent's comments and allowed comparisons between respondents.

Purposeful sampling techniques were used to initially select eighteen (18) interview respondents from the pool of sixty-seven (67) questionnaire respondents. Respondents targeted for in-depth interviews were those who indicated on the questionnaire that they frequently (i.e., three-to-five times per week or more) acquire-and-share information in Internet environments with friends, family, co-workers, and other social contexts.

Phase 3: Data Collection/Iterative Analysis—Interviews

Using grounded theory techniques, the author interviewed each of the sixteen (16) respondents in a neutral office environment using the revised semi-structured interview guide (See Appendix B for full text). The guide included information about the study and provided an opportunity for the interviewer to establish a rapport with each respondent. Each open-ended query (which correspond to both primary and secondary research questions) asked the respondent to comment on the processes used during information acquiring-and-sharing behaviors, the types of information shared, the motivational, cognitive and affective states experienced, and the people with whom information is shared. Each interview was audio taped. A continuous data comparison and coding process (supplemented with field notes) was employed as soon as data from the first interview were collected and transcribed. In an iterative fashion, the initial codes, analyses, and discussion guide were continuously revised as the author proceeded with each subsequent interview, and became more refined as data were collected. Thus, initial data analyses and collections informed subsequent analyses and collections.

In Phase 3, a level of theoretical saturation occurred after the sixteenth interview, thus the total number of respondents interviewed was sixteen (16).

Phase 4: Data Collection/Iterative Analysis—Critical Incident Logs

After the researcher established a rapport with respondents in Phase 2, he asked them to keep critical incident logs (See Appendix C for full text) for fourteen (14) days. A cash premium was offered as an incentive; eleven (11) of the sixteen (16) interview respondents participated.

Initially, the critical incident logs were in a paper-and-pencil format. As the data collection process proceeded, most respondents indicated that they preferred an email log option that featured a list of guiding questions on a small piece of paper that could be

conveniently taped to a computer monitor, thus reminding the respondent to log each critical incident.

The critical incident log began with a "memory jogger" that recalled the Phase 2 discussion/interview. It then requests that the respondent send a copy of the message/information that he/she intended to direct to a recipient each time she or he acquired-and-shared information in an Internet environment (the critical incident). Open-ended questions asked the respondent to comment on the processes, thoughts and feelings that occurred during each critical incident.

Phase 5: Advanced Data Analysis and Member Checking

In Phase 5, the researcher proceeded with a more deliberate process of coding, grouping and re-coding the transcribed interview data and critical incident log data. Concurrently, quantitative survey data collected in Phase 1 were re-examined as these qualitative data were collected. As the analysis continued, certain categories emerged as being more relevant to the areas of inquiry. The researcher then "fleshed out" these categories, grouping, collapsing, and comparing data until no new relevant information emerged (theoretical saturation).

During this initial data analysis phase, the researcher discussed his findings with a sample of respondents to determine that his conclusions were "on the right track." This member checking served as a type of validity check that supplemented other triangulation techniques.

Phase 6: Final Analysis and Reporting

In this phase, a final and comprehensive analysis was conducted on collected data. Findings are reported in Chapters 4 and discussed in Chapter 5.

Data Analysis and Theorizing

As indicated in previous sections, the goal of this exploratory study was to present substantive grounded theory that describes and provides some explanation for IA&S behaviors in Internet-based environments. Toward this end, data were collected and analyzed using grounded theory techniques so that "theorizing" could occur. Strauss and Corbin (1998, p. 25) describe theorizing as "the act of constructing…from data an explanatory scheme that systematically integrates various concepts through statements of relationship."

As a first step in this project's theorizing, frequency statistics were applied to quantitative survey data that were collected via the screening/demographic questionnaire. These data were used to better understand the qualitative data that were collected using the screening/demographic questionnaire, the semi-structured interview guide and the critical incident logs.

Qualitative data were collected using these instruments and analyzed in an iterative fashion, such that initial data collection and analysis sessions informed and guided subsequent data collection and analysis sessions. As per Strauss and Corbin's (1998) guidelines, open, axial and selective coding techniques were applied to these data. A computer program for the Macintosh OS9 platform called QSR NU*DIST (*N*on-numerical *U*nstructured *D*ata * *I*ndexing *S*earching and *T*heorizing) was used to store the transcriptions, assist in coding text, retrieve the coded text and help in the analysis of the data (Gahan & Hannibal, 1998; Qualitative Research Solutions and Research Pty. Ltd., 1997).

Open coding was used to "open up" the data and reduce it into discrete parts. This allowed it to be closely examined for similarities and differences. The result were

named concepts and categories developed "in terms of their properties and dimensions" (Strauss & Corbin, 1998, p. 103).

The emergent coding scheme was initially based on broad areas of inquiry suggested by the primary research questions, namely, behaviors, processes, motivators, affective states and cognition associated with information acquiring-and-sharing in Internet environments. This initial coding scheme was continuously revised as coding continued and grounded theory emerged from the iterative analysis sessions. As data shed light on these areas of inquiry, a finalized coding scheme was applied to all quantitative data (See Appendix D for the finalized data code book).

During open coding, signifiers and descriptions of behaviors, processes, feelings, thoughts, etc., that were discovered in the data were treated as discrete entities. In order to add depth and structure to the open-coded data by relating categories and subcategories to their properties (and relating dimensions to properties), axial coding techniques were applied. As the coding structure was continuously enhanced via various instances of axial coding, it was applied in subsequent data collection and analysis sessions, thus testing its consistency. During the axial coding process, the researcher remained consciously open to the possibility of additional or revised categories, properties and dimensions that could be added to the coding scheme.

After analyzing data from the third interview, some discernable patterns regarding information acquiring-and-sharing in Internet-based environments became apparent. However, it was not until data from the seventh interview were collected and analyzed did some theoretical elements about this phenomenon emerge. Selective coding techniques were then used to integrate and refine these theoretical elements, and move the analysis from a describing stage to a conceptualizing stage. During selective coding, a central category was identified. Other categories relevant to the primary research

questions were then organized around the central category, thus providing a theoretical scheme. As per Strauss and Corbin (1998), this scheme was reviewed for internal consistency. Gaps in logic or incomplete or poorly developed categories were filled in with theoretical sampling from subsequent data collection activities. Coding processes continued until data from the sixteenth (16^{th}) interview were collected and analyzed. At this point, theoretical saturation occurred (i.e., no new information emerged from the data).

The final step in the grounded theory approach is to validate the emergent theory (Strauss & Corbin, 1998). In this study, theory was validated by comparing it to the literature to determine what was different and why, and by sharing it with a sample of respondents to gather feedback on how well it described their episodes of information acquiring-and-sharing in Internet-based environments (member checking). These steps provided an additional opportunity for triangulating the data collection process, thus enhancing the overall credibility of the project. Furthermore, relating emergent theory with existing theory enriches both, and can lead to expanded areas of inquiry.

Ensuring Research Quality

Traditionally, social science research findings are evaluated according to criteria that are based on the notions of validity and reliability (Isaac & Michael, 1981). In general, validity is a term used to describe a study or test that measures what it claims to measure, and reliability refers to the degree to which repeated studies or tests result in identical or very similar results (Vogt, 1999).

Lincoln and Guba (1986) note that, although qualitative research methods have long been accepted in the social sciences, these studies are often subjected to validity and reliability criteria that have traditionally been applied to quantitative research. In their view, this application of quantitative criteria to qualitative research is problematic. They

call for evaluation criteria for qualitative research that are parallel or analogous to conventional measures designed to apply to positivistic, quantitative studies.

Although this study utilized both quantitative and qualitative methods, it is primarily a qualitative study. Keeping in mind Lincoln and Guba's (1986) points about selecting evaluation criteria that are appropriate for qualitative research, the quality of this study was maintained using definitions of validity and reliability that were generated within the naturalistic/qualitative research paradigm.

Validity

The concepts of descriptive validity, interpretive validity, triangulation and peer review were applied to this study to ensure overall validity. Descriptive validity refers to "the factual accuracy of the account as reported by the qualitative researcher" (Johnson, 1997, p. 282). In this study, descriptive validity was addressed by member checking. That is, a sample of respondents was asked to confirm details (e.g., frequencies, terms, etc.) captured in field notes, transcriptions, and examinations made by the researcher.

Interpretive validity "is obtained to the degree that the participants' viewpoints, thoughts, intentions, and experiences are accurately understood and reported by the qualitative researcher" (Johnson, 1997, p. 283). The researcher addressed interpretive validity in member checking discussions with a sample of respondents so he could ensure that his preliminary findings and understandings about their motivations, feelings, thoughts, etc., were as clear and accurate as possible.

As mentioned previously, data were collected using multiple data collection methods to maximize the understanding of information acquiring-and-sharing behaviors in Internet environments. For example, data collected via the interviews were confirmed by the data collected in the screening questionnaires and critical incident logs. This

robust, multi-method process of building and confirming thick description is referred to as triangulation (Denzin & Lincoln, 1994).

Finally, as this project proceeded, it was peer-reviewed by another experienced qualitative researcher who provided guidance and actionable feedback.

The reader is reminded that the intended product of this effort (an in-depth substantive theory of information acquiring-and-sharing in Internet environments) is specific to this group of users at this point in time. Thus, the study's generalizability (i.e., external validity) can be determined only in future research that seeks to build formal theory that is applicable to a wider range of problems and populations. However, it may be useful to keep in mind the qualitative research concept of "transferability". Lincoln & Guba (1996) indicate that this term is often considered a type of "naturalistic analogy" of external validity. The notion of transferability suggests that the thick description provided by this study may help determine similarities (or "transferability") between users in this study and other users.

Reliability

Discussing grounded theory studies such as this one, Strauss and Corbin (1998, p. 266-267) suggest that other researchers may be able to reproduce this study and develop "either the same or very similar theoretical explanations" about acquiring-and-sharing behaviors in Internet environments if they:

1. Retain the same theoretical perspective of the original researcher;
2. Follow the same general rules for data gathering and analysis, and
3. Assume a similar set of conditions.

In order to maximize its reproducibility (a qualitative analogue to reliability), this study provides the following materials in appendixes that will guide researchers interested in replicating this study:

- Finalized data coding book (Appendix D)
- An example NU*DIST code report (Appendix E)
- A segment of a sample interview (Appendix F)
- Sample critical incident logs (Appendix G).

This plan to maximize reliability was adapted from a similar grounded theory study conducted by Jackson (2001). In order to ensure confidentiality, all identifying information linked to respondents and the institution where data were collected was removed.

Summary

The goal of this study was to develop and present substantive theory that offers a description and explanation of IA&S behaviors in Internet-based environments. Toward this goal, two primary research questions were pursued:

1. What are the behaviors and processes associated with information acquiring-and-sharing in Internet-based environments?
2. What are the motivators and corresponding affects associated with information acquiring-and-sharing in Internet-based environments?

Because the researcher sought to build theory with these exploratory questions, he used grounded theory methodology. Surveys, interviews and critical incident logs were used to gather data from sixteen (16) respondents who were selectively sampled from a population of LIS graduate students. Research quality was ensured by member checking, peer review, and triangulation. Findings that emerged from this study are presented in Chapter 4.

Chapter 4: Findings

This chapter reports in-depth findings that were the result of using the exploratory research design outlined in Chapter 3. As indicated, multiple data collection methods (i.e., triangulation) were employed in this study in order to maximize understanding of IA&S behaviors. For clarity and ease of reading, the chapter is divided into two sections.

The first section of this chapter presents the findings of the screening/demographic survey, which was used to purposefully sample respondents for subsequent interview and critical incident research phases, provide respondent demographics, and collect preliminary information about IA&S behaviors.

The second section discusses the grounded theory analysis of interview and critical incident log data, and presents resultant findings and explanatory schemes. These are organized around the following six (6) areas of inquiry, which were derived from each section of the literature review presented in Chapter 2:

- Internet users' perceived *cognitive and affective states* as they mentally "store" and recall what they believe are the information needs of others;
- The *needs and motivations* that prompt *information acquisition processes* associated with IA&S in Internet-based environments;
- The *specific information acquisition processes* associated with IA&S in Internet-based environments;
- *Needs and motivations* that prompt *information sharing processes* associated with IA&S in Internet-based environments;

- The *specific information sharing processes* associated with IA&S in Internet-based environments;
- Internet users' *perceived cognitive and affective states* as they use various processes to share information that they believe is of interest to someone they know.

The findings and explanatory schemes discussed in each of these areas of inquiry constitute initial steps toward theorizing, which, as mentioned previously, is "the act of constructing . . . from data an explanatory scheme that systematically integrates various concepts through statements of relationship" (Strauss & Corbin, 1998, p. 25).

This chapter's two sections demonstrate how the analytical processes and the research outcomes of the grounded theory method are highly interrelated. This is useful preparation for the discussion of final theory statements that are constructed in later chapters.

SURVEY FINDINGS

At the beginning of data collection efforts, a written screening/demographic survey questionnaire (See Appendix A for the full text) was used to both select respondents (via purposeful sampling techniques) for in-depth interviews during a later research phase, and to gather preliminary data about respondents' behaviors associated with IA&S in Internet-based environments.

A total of eighty-four (84) paper-and-pencil survey questionnaires were distributed by hand to graduate student volunteers. Sixty-seven (67) survey questionnaires were returned, a response rate of approximately 80%. Quantitative findings gleaned from the survey questions are presented below using annotated tables and narrative subtitles, a format consistent with survey data reporting conventions in the social sciences (Derricourt, 1996; Isaac & Michael, 1987).

Respondents frequently use Internet information sources.

Survey respondents are frequent users of Internet information sources. As presented in Table 2 (see below), almost one-fifth (13/67 or 19%) of survey respondents spend five or more hours per day using Internet sources such as the Web, email, intranets, and online databases for work, school, personal projects and entertainment. Over three-fourths (51/67 or 76%) of survey respondents spend at least two hours per day using these sources. Almost one-fifth (12/67 or 18%) of survey respondents spend approximately one hour per day using Internet sources. Only 6% (4/67) of respondents indicate that they use Internet sources less than one hour per day.

Table 2: Respondents' Frequency of Internet Source Use

Q7) Indicate the amount of time you typically use Internet sources such as the Web, email, intranets, and online databases for work, school, personal projects and entertainment.

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Less than one hour per day	4	6%	4	6%
About one hour per day	12	18%	16	24%
Between two and four hours per day	38	57%	54	81%
Five or more hours per day	13	19%	67	100%
N=	67			

Information acquiring-and-sharing in Internet-based environments is an identifiable and common information behavior among respondents and people whom they know.

As shown below in Table 3, almost all of the survey respondents (66/67, or 99%) report being recipients of information that other people they know (e.g., family, friends, colleagues) have somehow acquired and then subsequently shared with them in both Internet and non-Internet environments.

Table 3: Respondents as Receivers of Information (both Internet-based and non-Internet based) via Others' Acquiring-and-sharing Processes

Q1) Over the course of our daily lives, we use various kinds of information for work, school and personal projects, and to be entertained. We get this information from a variety of media sources such as newspapers, magazines, books, TV, radio, the Internet, etc.

People that we know can also be sources of information. Do you ever experience a situation in which somebody you know (e.g., family, friends, co-workers) finds a piece of information that THEY think may be of use to YOU, and then WITHOUT YOU ASKING, shares that information with you in some way?

	Frequency	Percent
Yes	66	99%
No	1	1%
N=	67	

Congruent with findings presented in Table 3 above, almost all of the survey respondents (66/67 or 99%) indicate that they themselves have been actors in IA&S processes (in both Internet and non-Internet environments), as shown in Table 4 below.

Table 4: Respondents as Actors in IA&S processes in both Internet-based and non-Internet-based Environments

Q3) Think again about the variety of sources that can provide you with information for work, school, personal projects and entertainment. These can include newspapers, magazines, books, TV, radio, email, the Internet, company intranets, and communicating with family, friends, and colleagues.

While interacting with these information sources, do you ever experience a situation where 1) YOU find a piece of information that you believe is of use to SOMEONE YOU KNOW AND 2) YOU share that information in some way?

	Frequency	Percent
Yes	66	99%
No	1	1%
N=	67	

Respondents frequently engage in information acquiring-and-sharing behavior.

Information acquiring-and-sharing is a frequently demonstrated information behavior, as reported in Table 5 below. Over 3/4 of respondents (50/67 or 75%) acquire-and-share information at least once per week. One quarter (17/67 or 25%) acquire-and-share three-to-five times per week, and over one quarter (19/67 or 28%) respondents acquire-and-share at least once per day. Only 3% (2/67) of respondents indicate that they never or rarely engage in information acquiring-and-sharing behaviors.

Table 5: Frequency of Respondent Engagement in both Internet-based and non-Internet based Acquiring-and-sharing Processes

Q4) About how often do you find a piece of information that may be of interest (i.e., useful or entertaining) to somebody you know, and then you share it with him or her in some way (i.e., "find-and-share" information)?

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Never/Rarely	2	3%	2	3%
Less than once per week	13	19%	15	22%
One to two times per week	14	21%	29	43%
Three-to-five times per week	17	25%	46	68%
One to two times per day	14	21%	60	89%
Three-to-five times per day	5	7%	65	96%
Other	2	2%	67	98%*
N=	67			

**Note.* Due to rounding, cumulative percents do not add up to 100%

Common information receiving and information sharing methods among respondents include a mix of Internet-based and non-Internet-based mechanisms.

Table 6 below indicates that over 90% of respondents typically receive acquired-and-shared information by email (an Internet environment). Common receiving methods also include face-to-face conversations (57/67 or 85%), telephone calls (43/67 or 64%) and via post (34/67 or 51%). Almost one in five respondents (13/67 or 19%) chose the "OTHER" category, and listed instant messenger, campus mail, and interoffice memos as other means of receiving acquired-and-shared information.

Table 6: Respondents' Methods of Receiving Information that has been Acquired-and-shared

Q2) How do these people who "find-and-share" TYPICALLY get the information to you? (Please choose all that apply)

	Frequency	Percent
Via email	61	91%
Via telephone	43	64%
Via postal service	34	51%
Face-to-Face conversation	57	85%
Other	13	19%
N=	67	

Respondents' methods of sharing acquired information are somewhat similar to their receiving methods. As shown in Table 7 below, more than four-fifths (57/67 or 85%) use email to share information that they have acquired. "Traditional" methods also common, with telephone at 75% (50/67), postal service at 43% (29/67) and face-to-face conversations at 91% (61/67). A number of respondents (10/67 or 15%) chose the "OTHER" category, and listed instant messenger, Blackboard course software, and placing documents in workplace mailboxes and on desks as other means of sharing information that they have acquired.

Table 7: Respondents' Methods of Sharing Information During Internet-based and non-Internet-based Acquiring-and-sharing Processes

Q5) What methods do you use to share this information that you have found? (Please choose all that apply.)

	Frequency	Percent
Via email	57	85%
Via telephone	50	75%
Via an item (e.g., newspaper clipping, photocopied article, letter, etc.) sent via the U.S. Postal Service	29	43%
Via a face-to-face conversation	61	91%
Other	10	15%
N=	67	

Origin of acquired-and-shared information among respondents: a mix of Internet-based and non-Internet-based sources

When asked to rank the top three sources from which they typically get the information that they share with others when they engage in acquiring-and-sharing behaviors, fifty-nine (59) respondents indicated that both Internet-based and non-Internet based sources were notable. As shown in Table 8 below, the Web, email, electronic mailing lists, etc., are important sources of information that is acquired and subsequently shared. One quarter of respondents (15/59 or 25%) indicate that the Internet is the number one source of information that they share with others, and a large majority of

Table 8: Respondents' Top Three Sources of Information that is Acquired-and-shared.

Q6) Where do you typically get the information that you pass on to others when you "find-and-share"? Please RANK the TOP THREE sources.

	Rank	# of Respondents	Percent
Overall Ranking for Internet Sources (Web, email, e-lists)	1	15/59	25%
	2	19/59	32%
	3	17/59	29%
	Rank	**# of Respondents**	**Percent**
Overall Ranking for Print Sources (Newspapers, Magazines)	1	25/59	42%
	2	5/59	8%
	3	17/59	29%
	Rank	**# of Respondents**	**Percent**
Overall Ranking for Broadcast Sources (TV, Radio)	1	11/59	19%
	2	16/59	27%
	3	14/59	24%
	Rank	**# of Respondents**	**Percent**
Overall Ranking for Personal Conversations	1	7/59	12%
	2	12/59	20%
	3	10/59	17%

respondents (51/59 or 86%) rank Internet sources in their top three of sources of information that is shared with others.

"Traditional" print resources are also well-represented in respondent rankings. Slightly more than two-fifths of respondents (25/59 or 42%) indicate that newspapers, magazines, etc., are their number one source of information that they share with others. Four-fifths of respondents (47/59 or 80%) rank print sources within their top three sources of information that they share with others.

Broadcast sources (i.e., TV, radio) are also highly ranked by respondents. Approximately one-fifth (11/59 or 19%) say that broadcast sources are the number one source of information that they share with others. A majority of respondents (41/59 or 69%) rank broadcast sources in their top three sources of information that they share with others.

Respondents ranked personal conversations somewhat lower than the Internet or TV and radio as sources of information that they share with others. Only 12% of respondents (7/59) indicate that personal conversations are the number one source of information that they share with others; half of respondents (29/59 or 49%) rank personal conversations in their top three sources of information that they share with others.

Life roles among respondents are diverse

In addition to answering questions about behaviors and information sources, respondents were also asked to list some of their primary occupational, recreational and relationship roles. This facilitated the collection of demographic information that indicated information behavior contexts related to life roles. Among the diverse roles indicated are student, daughter, mother, wife, father, friend, husband, dog/cat owner,

volunteer, music lover, artist, writer, reader, Navy brat, twin, moviegoer, football fan, hiker and religious person.

Seeking to learn more: selecting respondents for in-depth interviews and critical incident logging

The findings reported in this section indicate that many individuals in the pool of sixty-seven (67) survey questionnaire respondents frequently participate in IA&S behaviors and maintain a variety of social and life roles. Given these characteristics, this was an appropriate group from which to select candidates for interviews in which their information acquiring-and-sharing behaviors could be discussed in detail.

Respondents targeted (via purposeful sampling techniques) for in-depth interviews were those who indicated that they acquire-and-share information in Internet-based environments three-to-five times per week or more, making them "information-rich cases" (Patton, 1990). A total of thirty-six (36) survey respondents (approximately 54% of all respondents) met this criterion, and were identified as potential interview respondents. Of this total, eighteen (18) respondents (approximately 27% of all respondents) were both reachable and agreeable to participate further in the study, and were thus selected to be interviewed. Findings from these discussions and the subsequent critical incident logs are detailed in the next section of this chapter.

INTERVIEW AND CRITICAL INCIDENT LOG FINDINGS

Employing grounded theory techniques, the researcher used a semi-structured interview guide to conduct discussions with sixteen (16) of the eighteen (18) respondents selected during the survey phase of this study. Although the interview guide did not include personal profile questions, the researcher did record basic information about the respondents in his field notes. Three (3) of the interview respondents were male; thirteen

(13) of them were female. Ages ranged from early 20's to late 50's. All were college graduates. Most worked full-time while attending graduate school.

The interview guide began with background information about the study, which provided an opportunity for the researcher to establish rapport with respondents. In a series of open-ended queries (See Appendix B for the full text), the researcher asked each respondent to talk about the processes used during IA&S behaviors, the types of information shared, the cognitive and affective states experienced, and the people with whom information is shared. As is typical in emergent research designs, the researcher also used clarifying/probing questions with interview respondents to generate what Strauss & Corbin (1998) and Geertz (1973) call "thick description".

At the close of each interview, respondents were asked to maintain critical incident logs (See Appendix C for full text) for fourteen (14) days. These logs instructed the respondent to send a copy of the message/information that he/she intends to direct to a recipient each time she or he acquires-and-shares information in an Internet environment (i.e., the critical incident). All sixteen (16) interview respondents agreed to participate in critical incident data collection efforts, but only eleven (11) kept the logs despite a cash incentive. Three (3) of these loggers were male; eight (8) were female. Again, ages ranged from early 20's to late 50's among these college-educated participants, most of who attended graduate school part-time.

A total of ninety-two (92) critical incident logs were collected. These logs, which primarily contained abbreviated, general data, were used to complement and confirm the more in-depth data collected in interviews.

As qualitative data addressing each area of inquiry were collected, the researcher began the "theorizing" process that characterizes the grounded theory approach. As mentioned previously, Strauss & Corbin (1998, p. 25) describe theorizing as "the act of

constructing…from data an explanatory scheme that systematically integrates various concepts through statements of relationship." As per Strauss & Corbin's (1998) guidelines, open, axial and selective coding techniques were systematically applied to these data and corresponding field notes in an iterative fashion, such that initial data collections informed subsequent data collections. Management of the iterative data analysis and multiple versions of coding and organizing schemes was facilitated by the use of NU*DIST (*N*on-numerical *U*nstructured * *I*ndexing *S*earching and *T*heorizing) software for the Macintosh OS 9 platform.

During open coding phases, the researcher "opened up" the data, reducing it into discrete parts, which allowed for a close examination of similarities and differences. The result was a varied collection of what Strauss & Corbin (1998) call "data bits" and "conceptual units."

In early instances of axial coding (the next analytical step), the researcher placed these data bits and conceptual units into loose/emergent organizing schemes. As the iterative sequence of interviews, field note-taking, and collection of critical incident logs continued, an undifferentiated mix of descriptive properties relating to the data bits and conceptual units emerged. During multiple subsequent instances of axial coding, these properties (and dimensions of these properties) were linked with the data bits and conceptual units. This repeated process of grouping, collapsing and comparing of data added structure and depth to emerging categories and subcategories.

The final analytical step was selective coding. During selective coding, categories and subcategories were integrated into statements of overall patterns and trends that addressed each area of inquiry.

Throughout this qualitative selective data collection and theorizing process, the researcher performed member-checking activities. During interviews, respondents were

probed with validating questions such as, "Let me make sure I'm understanding you…what I'm hearing is [model]. Did I get that right?" and "I want to make sure I understand. Is what you're saying [model]? Is that right?" Similar validating feedback was solicited from respondents regarding emerging theories based on the collected data. As is characteristic of grounded theory studies, these validating steps were performed in an iterative fashion in order to inform subsequent data collections and theorizing.

Findings gleaned from in-depth interview and critical incident log data for each separate area of inquiry are presented below. As indicated previously, the grounded theory methods employed in this study emphasize the iterative interplay among data collection, data analysis and findings that results in emergent theory. Consistent with qualitative/grounded theory data reporting conventions (Glasner, 1993; Miles & Huberman, 1994; Strauss & Corbin, 1997), the researcher will report on this interplay for each area of inquiry in a narrative format that:

- Reviews the objective of each area of inquiry;
- Discusses how the emergent research design "plays out" within the area of inquiry;
- Recounts the theorizing process, covering open coding, axial coding, and selective coding sub-processes as they are applied to collected data;
- Lists and discusses trends and themes discovered in data;
- Presents initial conclusions and explanatory schemes.

To take further advantage of triangulation, findings from the initial survey phase will be discussed in combination with interview and critical incident log data in areas where it is appropriate.

Area of Inquiry 1: Internet Users' Perceived Cognitive and Affective States as They Mentally "Store" and Recall What They Believe are the Information Needs of Others

The objective of this area of inquiry was to gather data about respondent Internet users' perceived cognitive and affective states as they proceed through the process of mentally "storing" [1] and recalling what they believe are the information needs of others. This section details the results of collecting and analyzing these data using grounded theory methods, and offers some initial conclusions about this component of information acquiring-and-sharing (IA&S) in Internet-based environments.

The researcher addressed this area of inquiry with respondents by using three (3) open-ended items on the semi-structured interview guide (See Appendix B for the full text) that collected qualitative data about process, cognition and affect variables:

1. You indicated on a survey that you find information for other people in Internet-based sources, and then you share this information in some way. Tell me how this process works for you (in general).
2. Describe to me what happens in your mind when you find something that you think may be of use to someone you know.
3. How do you feel when you find something that you think may be of use to someone you know?

The critical incident log sheet (See Appendix C for the full text) featured one item that addressed this area of inquiry: What thoughts and feelings did you experience when you found-and-shared information at this time?

The researcher also used clarifying/probing questions with interview respondents to generate thick description of their IA&S behaviors . Examples:

[1] The researcher assumes that information is a construction rather than a *thing*, a stance which corresponds to a user-centered approach to information behavior. Thus quotation marks are used with the words "store" and "storing" to indicate that these terms are labels for a process rather than a manipulation of a thing.

- What else do you feel?
- Any other thoughts?
- Can you give me an example?
- Is that pretty much what happens most of the time?

Starting with the first interview, the researcher employed open coding techniques, reducing collected data into discrete parts, which allowed for a close examination of similarities and differences. In an early instance of axial coding (the next analytical step) the researcher placed the data bits and conceptual units that resulted from open coding into the following loose/emergent organizing scheme suggested both by the objectives of this area of inquiry and data collected in initial interviews:

- Ways in which respondents learn about the information needs of others;
- Perceptions of how the information needs of others are cognitively "stored";
- Ways in which respondents experience the cognitive processes that occur as they recall people in their social sphere who may need any given piece of acquired information;
- Feelings that respondents experience as they recall the information need(s) of someone they know and feelings that respondents experience as they acquire information in Internet-environments that may possibly address those needs;
- Perceived cognitive processes that occur as respondents make associations between people they know and the topics about which they acquire information.

As the iterative sequence of interviews, field note-taking, and collection of critical incident logs continued, composite data bits and conceptual units were related to their properties, and dimensions were related to those properties during multiple instances of axial coding. This process of grouping, collapsing and comparing of data added structure

and depth to these emerging categories and subcategories, and trends and patterns that began to address this area of inquiry emerged. Literature about affective aspects of information behavior (e.g., Kuhlthau, 1991) and cognitive states (e.g., Wilson, 1994; Belkin et al., 1985) also guided this process, helping to organize overall patterns and trends. These patterns and trends are presented in the form of the following seven (7) theme statements, a convention adapted from Chatman (1996, 1999).

Theme 1: Respondents have low top-of-mind awareness of their cognitive states during the storage-and-recall process.

Among respondents, there is relatively low top-of-mind awareness of the cognitive states they experience as they mentally "store" and recall what they believe are the information needs of others. When initially questioned about the process at the beginning of the interviews, many respondents indicated that they were only vaguely aware of it until they started to discuss it as a participant in this study. Some typical remarks:

- "It's a mysterious thing . . . it's not like I have a list of people that I am in touch with tacked up there [pointing to her head][2] . . . it's a very quick and unconscious thing . . ."
- "It's just an automatic response."
- "I don't consciously go around looking for things [information that may be needed by others] . . . no, it just—it just comes."
- "I don't know if I even think about it. It's just something I do."

[2] Bracketed text (i.e., text inside of [ ]) that appears within quotations is provided to add additional/contextualizing information to the reader, and should not be construed to be part of the respondents' statements.

Theme 2: Potential Memory is evidenced.

As the researcher used conversational probing techniques in an attempt to overcome the low top-of-mind awareness of the cognitive processes under consideration, a cognitive entity that can be characterized as *potential memory* was revealed. Potential memory is an almost subconscious, "back of mind" mental space where cognitive representations of people and topics of interest or need are "stored." To borrow a metaphor from physics (i.e., *potential energy*), cognitive representations in potential memory space may or may not be tapped, although the potential exists. Below are respondent remarks that describe potential memory:

- "I think people have certain things that are at least always in the back of their minds. Somehow they are more in tune to certain issues, subjects, whatever."
- "I may not remember every single thing that [another] person is interested in . . . maybe only two or three things really stick in my memory."
- "I'll always just sort of keep in the back of my mind that there might be stuff that I might want to pass on to my dad or my sisters or my friends."

Theme 3: Cognitive Thresholds are evidenced.

Respondents indicate that they must experience some kind of positive feelings about any given piece of acquired information before they consider an attentive reading of it themselves, or making an association with a possible sharing recipient that she/he has "stored" in his/her potential memory. This gives evidence for the existence of a second key cognitive entity—a type of cognitive threshold—that is breached, which activates the cognitive trigger discussed in the next theme statement (or acts in conjunction with it) to stimulate the recall-and-association process.

When asked about the characteristics of acquired information that breaches the cognitive threshold, respondents suggested the following "likable" (*in vivo*[3]) criteria:

- Useful information:
    - ". . . something that saves them [recipients'] time or money . . ."
    - ". . . stuff that is helpful to them . . . whatever their thing is . . ."
- Quality information:
    - "Something reputable."
    - "Information that has some merit."
- Interesting information:
    - "Something of note that I would care about. Something that really stands out."
    - "Something really good. . . . I don't want to waste their [recipients'] time."
    - "Unusual or unique" information
    - "If it's boring, I don't even want to screen it if it's not interesting to me."

Theme 4: Cognitive Triggers are evidenced.

Discussion about potential memory and cognitive thresholds stimulated talk of what can be characterized as a cognitive "trigger" (*in vivo* term), a third cognitive entity that seems to be a key component in the recall-and-association process that links acquired information with cognitive representations of family, friends and colleagues and topics of interest or need that are "stored" within the potential memory space. The trigger is apparently activated while acquiring information (of a certain "likable" threshold quality) on certain topics in Internet-based environments. Typical quotations:

- "It's really the topic that leads me to the person [recipient] . . ."

[3] *In vivo*, literally "in life," is a conventional marker used by qualitative researchers to designate descriptive terms that are used by respondents. These terms are typically encountered by the researcher during in person (i.e., "in life") discussions in naturalistic environments.

- "When I'm looking at [a piece of information], people that I know . . . just sort of cross that line [create a link] in a very subtle, unintentional way."

The "triggering" process is described by respondents as a sudden and quickly completed process:

- "Somewhere, back there, it [the acquiring process] must have jolted or triggered a mechanism in my brain."
- "It's just one of those synaptic things . . . that just sort of fires across there, and sometimes it's quite strange the people who come up or what [type of information] provokes the thought."
- "Yeah, like instant synapses kind of thing . . . you don't think about it . . . it's an instant connection."

Theme 5: Mentally "storing" the information needs of others is a process dependent on communication.

Respondents indicate that conversations with others somehow leave cognitive representations within the potential memory space, "seeding" and enhancing or priming it. These cognitive representations seem to be somewhat stable and resistant to time variables.

Everyday conversations also seem to often catalyze cognitive triggers and cognitive thresholds, activating them to stimulate a process in which the respondent makes associations between the information that she/he has just acquired and representations of people, needs, topics, experiences, etc., "stored" in the potential memory space. Illustrative quotations:

- "It's almost like how sometimes you'll hear about something, it could be any random piece of information, or it could be something as simple as . . . a car model, and then after you hear about it, you see it everywhere? It's kind of

like that. . . after I've heard someone express an interest in something, then it's like I see it everywhere . . . it pops out more."

- "It [the trigger] can refer to a conversation that I've had, and the conversation could have been last week or last year."
- "I just remember conversations with people, and you know what their interests are what they like and they don't like."
- "I'm looking . . . and it [a piece of information] just comes across, and I'll be like, we were just talking about that!"
- "If I heard somebody in passing say oh, well, you know I've been trying to find this and I just can't find it you know, and then if I stumble across it I'll pass it on to them as soon as I can."
- "It's just kind of like a trigger that says so and so was talking about this last week . . . I usually remember things like that about people. I don't know why."

Theme 6: Respondents experience various mental states as they engage in the recall-and-association process.

Varied mental states that mimic sensory states were described in discussions of the cognitive recall-and-association process. One state is characterized by a form of mental visualization. Respondents who experience cognitive stimuli that are analogous to actual ocular stimuli (i.e., mental visions) when recalling topics that might interest other people indicate that this is a sudden and unexpected process. These mental images can be an assortment of indicators that are unique to the individual. Examples:

- "It's like little red flags come up."
- "It's more like just catching a sight of a rabbit out of the side of your eye…you know you're not looking for a rabbit, you're driving your car, but

you see this rabbit out the side of your eye. . . . Maybe that's what it is like…when I'm scrolling through . . . research results, I'm sometimes scrolling fast but I can see the word drug, or . . . music, or something like that and I stop."

Some respondents also experience mental images of recipients' faces when they acquire information that they believe could be useful to them. Typical comments:

- "A person pops up."
- "[I] . . . see their face, and be like, oh, Michelle would like this or Chris would like this, and I go ahead and send if off."

Other respondents describe more semantically-based cognitive indicators that include written names or topics:

- "I visualize names."
- "It's usually their name, and then their face might pop up. It's usually their name, I think first of all."
- "I think it's more a list of names. I kind of go through, mentally, a list of people."
- "A [written] title jumps out at me and I immediately think of someone [a potential recipient]."
- "I'll be going to the table of contents….looking for an article that I need, and I'll be reading through and then it's like woah, so and so would be so interested in that, I bet . . . I don't know what it is, it's just that I read through titles and I end up thinking of people."

Occasionally a mental state that mimics aural stimuli also occurs. One respondent describes it as "a little voice in your head" that links an acquired topic to a potential recipient.

Theme 7: The storage-and-recall process is reportedly a natural and pleasant experience.

Mentally "storing" and recalling what they believe are the information needs others is a pleasant experience that taps into respondents' positive feelings about themselves, their relationships, their life situation, and the information they acquire. Typical comments:

- "I think it's because I'm so far from home . . . it's like they're [recipients] in the back of my mind a lot, so I'll be thinking about what interests them, what they're doing right now . . . and then I'll see if something kind of correlates."
- "She's [respondent's sister] a part of who I am, my friends are part of who I am, and they're just part of my persona and awareness. As I'm zipping along [on the Web], I say, oh, she might be interested in that."
- "It feels really good. I enjoy…the pursuit of knowledge…I enjoy learning new things. . . . I'm glad I'm sharing what I know with other people. . . . that just makes me feel good . . . that they're learning something, and that they're enjoying the experience of knowing that I have."
- "I think a lot of it [storing and recalling cognition] has to do with who I am as a person . . . I really want to connect with people . . . people that I care about I want to remember their interests and I want them to feel—I don't know . . . feel remembered by me."

Explanatory Scheme

The preceding theme statements were the final products of the axial coding process engaged in this area of inquiry. The final step of the overall analyzing/theorizing process for this area of inquiry guided by Strauss and Corbin (1998) was selective coding. In this step, themes, categories, and patterns identified during axial coding were

related then integrated through statements of relationship into a culminating explanatory scheme.

The communication that users have with family, friends, colleagues and acquaintances is the integrating factor for this area of inquiry. With low discernable effort or consciousness on the part of the user, cognitive representations of

- these communications (e.g., face-to-face, email, phone calls, letters, etc.),
- the various people with whom these conversations are held,
- various topics mentioned,
- various needs mentioned or inferred,
- feelings experienced in these conversations, etc.,

are placed in a cognitive entity that can be characterized as potential memory during everyday communication events. These representations seem to be somewhat stable and resistant to time variables.

Collected data suggest that these representations remain inert until what can be characterized as a cognitive threshold is breached. In the context of information acquisition in Internet-based environments, this breach occurs when a user acquires information of a certain quality via the Web, a received email, an electronic list posting, etc. Quality criteria include usefulness, reliability and novelty/interest.

Once the cognitive threshold is breached, what can be characterized as a cognitive trigger is quickly activated. Users experience a variety of mental states that mimic sensory states as they recall cognitive representations (of people they know, conversations, needs, feelings, etc.) "stored" in the potential memory space, and make associations between the information they've acquired and possible recipients of this information (i.e., "share-ees"). These associations include mental images of recipients' faces, written names, and acquired and/or "stored" topics as well as mental "voices."

Although somewhat complex, this entire process is quite rapid and requires very little effort on the part of the recipient. In fact, respondents have very little top-of-mind awareness of these mental events, which suggests that they are subconscious. When probed for comments on their affective states while engaged in this information behavior, users characterize the process as pleasant and "natural".

This area of inquiry examined Internet users' perceived cognitive and affective states as they mentally "store" and recall what they believe are the information needs of others. The needs and motivations that prompt information acquisition processes associated with IA&S in Internet-based environments are discussed next in Area of Inquiry 2.

Area of Inquiry 2: The Needs and Motivations That Prompt Information Acquisition Processes Associated with Information Acquiring-and-Sharing in Internet-Based Environments

The objective of this area of inquiry was to gather data about the perceived needs and motivations that drive respondents to acquire information in Internet-based environments that they subsequently share with others. The researcher assumed that needs and motivations are indicated by the types of information that respondents share with others once they are acquired. For example, if a student shares information about an online discount textbook dealer with a classmate, it can be assumed that his acquisition of this information was prompted by his own need to find textbooks at a good price. The decision to take this stance is based on information needs literature (i.e., Krikelas, 1983; Rubin, 1996; Wilson 1997; 1999) which indicates that needs catalyze and are reflected in information behaviors such as the one under consideration in this study.

This section describes how grounded theory methods were used to collect and analyze data relevant to this area of inquiry, and offers some initial conclusions about this aspect of information acquiring-and-sharing (IA&S) in Internet-based environments. The

researcher addressed this area of inquiry with respondents by using the following two (2) items on the semi-structured interview guide (See Appendix B for the full text):

1) What kinds of information are you likely to share with others?
2) Is there any kind of information that you are not likely to share in an electronic environment?

The researcher also asked clarifying/probing questions of interview respondents, e.g.:

- What other kinds of information do you look for? Why? Do you know other people who are interested in that as well?
- What other kinds of information would you not share with others online?
- How do you spend your time when you log onto the Internet?
- Do you think you get a lot of email? What is it usually about?
- Are you on any listservs? Which ones?

The critical incident log sheet (See Appendix C for the full text) featured one (1) item that addressed this area of inquiry: Briefly describe what you're sharing this time.

The researcher began the grounded theorizing process as soon as qualitative data about this area of inquiry were collected during the first interview. At the open coding phase, the researcher "opened up" the data, reducing them to discrete parts, which allowed for a close examination of similarities and differences among data bits and conceptual units.

Early in the next analytical step (axial coding), the researcher placed these data bits and conceptual units into a topically-based loose/emergent organizing scheme. This scheme was inspired both by the objectives of this area of inquiry and data collected in initial and subsequent interviews and critical incident logs. Below is a list of the topical categories into which emerging data were arranged.

- Personal Characteristics
- Personality
- Curiosity
- Politics
- Religion
- Librarianship
- Ideas
- Employment
- "Helpful" information
- Consumer items
- Recipes
- Music
- Jokes and humor
- Personal finance
- History
- Computer-related information
- Pop culture
- Health
- Workplace issues
- Academics
- Sports
- Hobbies

As the iterative sequence of interviews and collection of critical incident logs continued, a repeated process of grouping, collapsing and comparing of data added structure and depth to these emerging categories and subcategories, and trends and patterns that began to address this area of inquiry emerged. Literature on information needs (e.g., Dervin & Nilan, 1986; Large et al., 1999) and everyday information seeking (Huotari & Chatman, 2001) also informed this process of organizing overall patterns and trends. These patterns and trends are presented in the form of the following seven (7) theme statements.

Theme 1: Satisfying innate curiosity

On a basic level, respondents perceive within themselves a heightened, probing, and innate sense of curiosity about the world in general that motivates them to get satisfaction by acquiring information via various channels, including Internet sources. Some illustrative comments:

- "People will tell me something, and I'll say, well, what does that mean, what do you mean by that, and how does that make you feel? . . . that's what I mean by probing."
- "I'm the type of person where . . . pretty much any piece of information is going to have some kind of interest, because I like to learn new things."
- "It's like, well, I discovered something new for myself."
- "I'm interested in a lot of things, and I'm interested in people who also have interesting interests."
- "I read a lot, and I have a lot of interests."

Theme 2: "Keeping Up"

The desire or imperative to "keep up" (*in vivo* term) with various ongoing life issues and interests is also a primary motivation or need for acquiring information in Internet environments. This seems to be especially true regarding information items related to trends in entertainment and pop culture, the most prevalent topics sought and shared by respondents in Internet-based environments. Acquired-and-shared items included those about:

- New music and news about musicians;
- Upcoming movies and television programs (and movie stars/actors) of several genres (e.g., drama, action/adventure, animation);
- Daily horoscopes;
- Web sites featuring new hairstyles;
- Fashion (and anti-fashion) Web sites;
- Up-to-date sports scores, statistics and news (i.e., NASCAR, football and baseball);
- New and upcoming video games and gaming consoles;

- Other miscellaneous items, including:
    - a URL to a Web site about a new restaurant where one can watch robots fighting while one eats;
    - a URL to a new Star Trek site, and
    - a URL to a recent online recording of a National Public Radio feature on the New Jersey Turnpike.

The need to keep up with more substantive topics was also reported by respondents, who look to online sources to help keep them (and those with whom they share) abreast of news and current political issues. Among the information items in this category:

- General "newsy current events kinds of things";
- Online articles about the PATRIOT Act;
- URL links to information about grass roots political campaigns;
- URL links to information on community projects;
- URL links to civil liberties groups;
- Online articles about the new Office of Homeland Security;
- An email alert about a legislative action;
- A URL link to a voter information Web site.

All of the respondents were graduate students in a library and information studies program, and as such, they demonstrated a need to keep up with information about job openings and new developments in the field by acquiring-and-sharing online information about topics such as:

- Current and future workplace issues (that affect both the sender and the receiver of the information);
- Employment opportunities and job listings;

- Books about working overseas;
- Professional conferences;
- A feature story profiling a heavy-metal band that performs in libraries to promote reading;
- Book fairs;
- A URL to a feature story about a bar in Arizona that trades beer for books;
- Full text articles and URLs about Bill Gates and his contribution to libraries;
- Coursework assignments, research links, scholarly journal articles.

Theme 3: Consumer Needs and Interests

Although the need to keep up with various trends in entertainment, pop culture, politics, and their professional field is an important motivation to acquire information in Internet-based environments for this group, participants also indicate having consumer needs and interests. Almost all of the respondents denied that they were "big shoppers" (*in vivo* term), but they report that a significant amount of the information they seek and share is related to a broad spectrum of products and services, including:

- Sales of all kinds (e.g., department store, online, and surplus sales);
- Online apartment listings;
- Online travel sites that feature information about airline ticket bargains, inexpensive vacations and hotel packages, the menu of a supposedly haunted restaurant in Gatlinburg, Tennessee, the rates of a fashionable New York hotel, email contacts for a comic arts festival in Washington, DC, etc.;
- Clothing (e.g., sweaters, shoes; sunglasses, jewelry);
- Housewares (e.g., bedspreads, espresso makers, vacuum cleaners, furniture);
- Books and calendars;
- Ideas for Christmas gifts.

Theme 4: Health Issues

Some respondents seemed particularly in-tune with their own needs and that of others for health-related information, acquiring-and-sharing Internet-based information about:

- Breast cancer;
- Substance abuse and drug policy;
- The pharmacology of certain classes of drugs;
- A "credible" Web site that lists resources about autism;
- A seminar about grief held at a local library;
- A cancer prevention education program that is traveling around the country.

Theme 5: Computer-Related Information

Additionally, respondents demonstrated a need and motivation to acquire (and subsequently share) computer-related information. Examples:

- Information and tips about children's and workplace software programs;
- Information and tips about computer hardware and peripherals;
- Information and tips about Napster and other music/file sharing programs;
- A notice about RecipeBuddie (a screen name used to contact for recipes) on AOL Instant Messenger (AIM);
- A link to information and a download site for a pop-up blocker application.

Other types of needs were demonstrated by respondents who acquired-and-shared information about personal finance (e.g., information about taxes and credit card fraud prevention) and hobbies and recreation (e.g., tai kwan do, history, geo-caching, recipes).

Theme 6: Sharing Humor with Others

In addition to sharing "practical" information (i.e., information that can be acted upon for a specific purpose) most respondents seemed motivated to simply exchange humorous greetings and share selected jokes and funny Web sites that they acquired online with family, friends and coworkers. Among the items reported as acquired-and-shared are online sources that feature:

- A list of "wacky newspaper headlines";
- The story of "Barbie the Librarian";
- A link to a joke quiz, "Are you older than dirt?";
- A link to an interview with Homer Simpson;
- Humorous anecdotes;
- A URL to a Web site that spoofs Massachusetts driving habits;
- Games and cartoon series;
- Short animated films;
- A Top 20 list of the worst video games with examples that one can play.

Theme 7: "Imposed" Searches

Respondents also report that they are generally motivated to acquire information by "people who ask me to tell them if I run across something that they're looking for," possibly a type of "imposed" search as described by Gross and Saxton (2001). Some respondents perceive that this behavior is especially valued in their work contexts—places where collaboration and a free flow of communication are encouraged.

Theme 8: Non-Needs

In contrast to needs and motivations that prompt information acquisition processes associated with information acquiring-and-sharing in Internet-based

environments, there are types of information that respondents expressly indicate are not needed (but are somehow acquired), or are not appropriate to share with others. Among them:

- Sensitive, personal, or complex information such as financial data;
- "Something that I think is bogus or if I think it's something that's not true or not verified…I get lots of this stupid urban legend emails and I just don't even pass those on."
- Jokes (that respondents do not find humorous);
- Spam;
- Bad news.

Explanatory Scheme

The preceding theme statements were the final products of the axial coding process engaged in this area of inquiry. The final step of the overall analyzing/theorizing process put forth by Strauss and Corbin (1998) was selective coding. In this step, themes, categories, and patterns identified during axial coding were related then integrated through statements of relationship into a culminating explanatory scheme.

The explanatory scheme for this area of inquiry is based on the following assertion: affect is a key, integrating concept that links respondents' needs to respondents' motivations to engage in information acquiring processes associated with IA&S in Internet-based environments.

For example, perhaps the most fundamental need explored with respondents in this area of inquiry are the feelings associated with the need to satisfy what they describe as a strong curiosity about the world in general (which may be a personal characteristic). This curiosity often leads to information seeking about topics that are merely amusing. Respondents say they feel a desire to "keep up" with music, movies, fashion, sports,

discretionary consumer items and other feel-good entertainments, and they seem to spend a significant amount of their Internet time acquiring information that addresses this need.

Respondents are also motivated to acquire information that addresses more substantive topics by feelings of urgency that vary in their intensity. By acquiring information about everyday life needs such as those related to jobs, world events, politics, computer skills, necessary consumer items, healthcare, and imposed searches, respondents satisfy these feelings of urgency. In many cases, they also satisfy the feelings of curiosity that seem to be a primary motivation for much of their information acquisition behavior.

Respondents also say they experience a variety of pleasant feelings when they share humorous greetings, jokes and funny Web sites with people with whom they have an emotional attachment. These pleasant feelings motivate them to continuously acquire these kinds of information and subsequently share them with others.

Emotions are also tied to types of non-needs, i.e., information that is not needed (but is somehow acquired) and information that is considered inappropriate for sharing with others. Respondents have negative, visceral reactions to spam and chain email, and feel strongly that it should not be shared with others. They also feel that sensitive or personal information or bad news should not be passed on in Internet-based environments.

This section details the results of an inquiry that examined respondents' needs and motivations that prompt information acquisition processes associated with IA&S in Internet-based environments. The specific information acquisition processes associated with this behavior are covered next in Area of Inquiry 3.

Area of Inquiry 3: The Specific Information Acquiring Processes Associated with Information Acquiring-and-Sharing in Internet-Based Environments

The objective of this area of inquiry was to collect data about the specific processes in which respondents acquire information that they subsequently share with family, friends and colleagues in Internet-based environments. This section describes the grounded theory methods that were used to collect and analyze relevant data, and offers some initial conclusions about this aspect of information acquiring-and-sharing (IA&S) in Internet-based environments.

The researcher addressed this area of inquiry with respondents using all three data collection instruments. The screening/demographic questionnaire (See Appendix A for the full text) included three (3) closed-ended items that collected quantitative data about other people as sources of information, the medium/channel by which information is received by respondents, and respondents' time expenditures in Internet environments:

1) People we know can also be sources of information. Do you ever experience a situation in which somebody you know (e.g., family, friends, coworkers) finds a piece of information that THEY think may be of interest to YOU, and then WITHOUT YOU ASKING, shares that information with you in some way?
   a. Yes
   b. No
2) How do these people who "find-and-share" TYPICALLY get the information to you?
   a. Via email
   b. Via telephone

c. Via an item (e.g., newspaper clipping, photocopied article, letter, etc.) send via the U.S. Postal Service
d. Via a face-to-face conversation
e. Other sharing methods:

3) Indicate the amount of time you typically use Internet sources such as the Web, email, intranets, and online databases for work, school, personal projects and entertainment.

The semi-structured interview guide (See Appendix B for the full text) included three (3) multi-part open-ended items that helped gather data about specific information acquisition processes, habituation, and instantiation type:

1) Describe the process that you go through when you share information that you think may be of use to someone you know.
2) How long have you been doing this?
3) Let's go back to the process that you go through when you "find-and-share":
   A. While accessing various information sources, do you ever find a piece of information that you believe is
      i. BOTH useful to you AND is information that may be useful to someone you know?
      ii. Do you share this information with other people in some way?
      iii. If so, how do you usually share this information?
   B. Think again about the variety of information sources available that you can access to search for information for work, school, personal projects and entertainment. This can include newspapers, magazines, books, TV,

radio, the Internet, intranets, email and talking with family friends and colleagues. While searching these information sources, do you ever experience a situation where:

i. You find a piece of information that is useful to you AND during the same search, you find a DIFFERENT piece of information that you believe is of use to someone you know?

ii. Do you share this information with other people in some way?

iii. If so, how do you usually share this information?

C. Once again, please think about the variety of information sources available that you can access to search for information for work, school, personal projects and entertainment. While accessing these information sources, do you ever experience a situation where:

i. You DO NOT find information that is useful to YOU, but you DO find information that you believe is useful to SOMEONE YOU KNOW.

ii. Do you share this information with other people in some way?

iii. If so, how do you usually share this information?

The researcher also used clarifying/probing questions with interview respondents. Some examples:

- What do you mean by that?
- Can you give me an example?
- Is that typical?
- Does that happen more/less often for you?

These clarifying questions helped expand and "round out" the original/initial data collection instrument items, and helped to gather thick description.

The critical incident log sheet (See Appendix C for the full text) featured one (1) open-ended item that addressed this area of inquiry: Describe how you acquired what you've decided to share this time.

As qualitative data about this area of inquiry were collected, the researcher began the theorizing process that characterizes the grounded theory approach. In the initial open coding phase, the researcher "opened up" the data, reducing them to discrete parts, which allowed for a close examination of similarities and differences. In an early instance of axial coding (the next analytical step) the researcher placed these resultant data bits and conceptual units into the following loose/emergent organizing scheme suggested by the objectives of this area of inquiry, the data collection instrument items, and data collected in initial interviews:

- Sources of information that is later shared;
    - Internet
    - Television
    - Family, friends, colleagues, etc.
    - Other
- Habitual information behaviors;
    - Browsing
    - Regularly visited Web sites
    - Email checking
- Type of acquisition (i.e., instantiation type);
    - Find something that interests both you and someone else

    - Find something for yourself and something different for someone else
    - Don't find something for yourself, but do find something for someone else
- Encountering information;
- Purposeful acquisition;
- Non-purposeful acquisition;
- Medium used to share and receive information.

As the iterative sequence of interviews, field note-taking, and collection of critical incident logs continued, a process of grouping, collapsing and comparing of data added structure and depth to these emerging categories and subcategories, and trends and patterns that began to address this area of inquiry emerged. Literature on purposeful/directed and non-directed, information acquisition (e.g., Bettman 1978; Chang & Rice, 1993; Erdelez, 1999; Wilson, 2000) and previously analyzed quantitative data (presented earlier in this chapter) also guided this process, helping to organize overall patterns and trends. These patterns and trends are presented in the form of the following five (5) theme statements.

Theme 1: Most of the information* shared *in Internet-based environments is* acquired *in Internet-based environments.

As indicated in Table 8 of the Survey Findings section of this chapter, respondents acquire information (subsequently shared with others in some way) from a mix of Internet-based and non-Internet-based sources. Although "traditional" print and broadcast sources were highly placed in respondent acquisition source rankings, the Internet's ranking was particularly strong. One quarter (15/59) of survey respondents rank the Internet as the number one source of information that they share with others, and

a large majority of respondents rank Internet sources in their top three sources of information that is shared with others.

Interview data indicate that the information shared by respondents in Internet-based environments is almost always acquired in Internet-based environments. All respondents acquire Internet-based information and share it using an Internet-based medium, mostly via email, and to a lesser extent Internet Messenger. Only one of the respondents described a situation where she acquired a bit of information in a magazine and shared it via email.

Critical incident log data supports this finding. One critical incident log respondent acquired information via listening to a National Public Radio program, and he subsequently shared the information online by going to the NPR Web site and emailing a URL of the program transcript. All other information shared during critical incidents was acquired in Internet-based environments. This trend seems to be mostly due to the contextual and practical differences between sharing in Internet and non-Internet environments, which is discussed further in a later section of this chapter.

Theme 2: Directed Information Acquisition in Internet-based environments

Directed acquisition processes are instances in which the respondent user logs onto the Internet, purposefully seeking to address a particular information need, and is successful in addressing that need. For example, a respondent describes a typical instance of a directed acquisition process: "I wanted to find a movie review, so I went to E! Online and found one." She then shared this information with a friend who had expressed an interest in an actor starring in that movie. All respondents indicated that they purposefully acquire information in Internet environments in similar ways, often sharing what they're acquired via this process. Many add that they have been doing this since they have reached proficiency with networked computers.

Theme 3: Semi-directed Information Acquisition in Internet-based environments

Habitual "checking in" (*in vivo* term) to favorite Web sites (e.g., CNN.com, The New York Times on the Web, ESPN.com, etc.) and weblogs (e.g., William Gibson, Big Pink Cookie, Unix Girl, etc.) is a frequent means of semi-directed information acquisition among study participants. This acquisition behavior can be considered semi-directed, because, although the user purposefully goes to the Internet resource, he/she does so with the intent to simply see if there is anything new or of interest there, which is a more passive, less directed way of acquiring information than what occurs during directed acquisition. An example: a respondent mentioned that he is a habitual reader of *Salon.com*, an online magazine. He recently went to the Web site to check on "what was new," found an article that reminded him of a recent conversation with his father, and then sent the article to his father using the site-based sharing tool (i.e., the button labeled "Email").

Most respondents also report common instances of acquiring information via information encountering, another semi-directed acquisition process. Information encountering refers to situations in which people "accidentally bump into information" when they are not seeking any, or they many not be actively involved in looking for the information they happen to find (Erdelez, 1999). This acquisition process is semi-directed, because it is not necessarily part of a purposeful or directed search.

Information encountering accounts for up to half of the information acquired in Internet-based environments for some respondents. Some typical quotations that illustrate the serendipity and frequency of this process:

- "I think a lot of times, the information that I do end up sharing is not something that I expressly went out to find . . . it's kind of by happenstance

. . . I may be shopping on the Internet, or . . . researching something for work, and then I find something of note."

- "I'm looking for other information for school, and I'll come across stuff that I don't necessarily mean to, and if it's something that I think someone else would be interested in, I'll just email it to them."
- "It's probably about half and half—half stuff I was searching for, half stuff I just kind of run into."

In some cases, information encountering seems to be related to imposed searches as characterized by Gross (1995). An illustrative comment: "You find what somebody asked you to find, and you also find something that they didn't ask for, but ended up being useful anyway."

Information encountering appears to be facilitated by browsing or "surfing" (*in vivo* term) the Internet, another type of semi-directed information acquisition that is very common among respondents. One respondent was typical in her comment, "I think I browse the Internet more than I watch television."

As indicated in Table 2 in the Survey Findings section of this chapter, respondents typically spend several hours per day online. Time spent browsing seems to allow for more opportunities to acquire information via information encountering. Example quotations:

- "It's the serendipity effect . . . if I stumble across something, it's because I've been bored and I'm wandering around looking at things" [i.e., browsing in Internet-based environments].
- "What I'm doing most of the time on the Web is browsing. Most of the occasions when I pass things on to people that I know it's in a browsing sense" [sic].

Significant to the browsing process, some respondents perceive what one respondent calls a "widening of focus" (*in vivo* term) when they browse the Internet and a "narrowing of focus" (*in vivo* term) when they purposefully seek information on the Internet.

Theme 4: Undirected Information Acquisition in Internet-based environments

Respondents acquire information in Internet-based environments (that may be subsequently shared) via several kinds of undirected processes as well. Undirected acquisition of information refers to instances in which information is obtained via means that require little or no purposeful seeking on the part of the user. Among the respondents in this study, receiving information via email from people whom they know is the most common undirected information acquisition method. As indicated by Tables 3 and 6 in the Survey Findings section of this chapter, a large majority of respondents are recipients of information that is shared via email. Interview data also show that respondents perceive they receive a considerable amount of email from other people, and that they often share these incoming emails.

Acquiring information by other undirected processes, such as e-list distributions and personal Web portal updates are also common. Many respondents have also established various email alert profiles with airlines, newspapers and political campaigns, and information acquired via these means is often shared with other people perceived by respondents to be interested in the material. Below are some illustrative quotations:

- "I've signed up with the New York Times [email alert service], so a lot of times I'll get stuff from there, and there's . . . a little icon at the bottom that says 'email this article.' And I'll click on that and email it to whoever I want to."

- "I'm on a number of Listservs that deal with education topics. . . . If I get something good from on of them, I just forward it on to the teachers [that he works with] or to my friends who also work in schools."
- "We have a Web site [portal] that they put news updates on, and when I see something new and interesting, I'll email it to people I think would be interested" [sic].

Theme 5: Acquisition in Internet-based environments is mostly driven by personal needs and interests

During the data collection interviews, three different instantiations of information acquiring were discussed. These permutations are:

1) respondent acquires information he/she perceived to be of interest to *both* him/herself and a potential recipient;
2) respondent acquires information that he/she perceives as useful to him/herself, and during the same search he/she acquires a *different* piece of information that he/she perceives as being of interest to a family member, a friend or a colleague;
3) respondent *does not* acquire information that is perceived to be useful for him/herself, but *does* acquire information that he/she perceives to be of interest to someone else.

Most respondents experience all three instantiations. However, by far the most common permutation among interviewees is the first: a scenario in which an Internet user acquires information that he/she perceives to be of interest to both the him/herself and a potential recipient. Some illustrative quotations:

- "Every so often I do find things that interest somebody else that don't interest me, but I'm not usually on the lookout for those things."

- "I wouldn't read it if I was wasn't into it."
- "I'm not going to process it as carefully if I'm not all that interested in it."
- "I'm much more apt to share information that is noteworthy both me and someone else."
- "I'd have to say I'd be more likely to share something that would interest both of us, because then we could have a conversation about it, whether a physical conversation or . . . emailing."

Respondents are somewhat less aware of their experiences with scenarios in which they acquire information that they perceive to be useful to themselves, and concurrently acquire a different piece of information that they perceive to be of interest to someone else. Typical remarks:

- "That's happened to me . . . but not as often."
- "I'm going to say 'yes' [she's experienced it], although I can't think of a specific example."
- "It probably happens occasionally."
- "I guess it happens once in a while, but most of the information I pass on is something I would care about too, and something I would want to read for myself regardless of if someone else would too."

The third instantiation examined, i.e., scenarios where the respondent does not acquire information that he/she perceives to be useful, but does acquire information that he/she perceives to be of interest to someone else is not common among these interviewees. An example comment: "It's rare . . . it's not a thing I set out to do."

Explanatory Scheme

The preceding theme statements were the final products of the axial coding process engaged in this area of inquiry. The final step of the overall analyzing/theorizing

process set forth by Strauss and Corbin (1998) was selective coding. In this step, themes, categories, and patterns identified during axial coding were related then integrated through statements of relationship into a culminating explanatory scheme.

The explanatory scheme for this area of inquiry is based on two integrating concepts derived from collected data. The first integrating concept is: information shared by respondents in Internet-based environments is almost always acquired in Internet-based environments. Although other sources (e.g., print, TV) are highly placed in source rankings, the Internet's ranking as a source of information to share with others is particularly strong.

The second integrating concept is: the characteristics of acquisition processes associated with IA&S in Internet-based environments are not significantly distinct from the acquisition processes found in other information environments (e.g., libraries). Rather, they are simply Internet context-specific or enhanced or hybrid forms of previously examined information behaviors.

As observed when examining information acquisition processes in non-Internet information environments, information is acquired in Internet-based environments through a mix of what can be characterized as directed, semi-directed, and undirected processes. Each of these acquisition processes yields information that is subsequently shared in some way.

During directed acquisition processes in Internet-based environments, a user logs onto the Internet, purposefully addressing a given information need. He or she is successful in addressing that need, and subsequently shares his or her findings with another person. Users also acquire information via several semi-directed processes. For example, in a less-than-directed fashion, users often semi-passively "check in" at favorite sites or weblogs simply to see if anything new or of interest is there—a specific

information need is not initially specified. If something new or interesting is found (as is often the case), this information is subsequently shared.

Most respondents also indicate that they share information after acquiring it via a "bumping into it" process that they experience when they aren't necessarily seeking any particular information. This experience is a common semi-directed acquisition process characterized by Erdelez (1999) as information encountering. Spending time browsing the Internet seems to allow for more opportunities to acquire information via information encountering (and therefore more opportunities to share information), suggesting an obvious connection between time spent browsing and the amount of information encountering experienced. Gross' (1995) notion of imposed searches (i.e., situations where other people have asked respondents to "keep an eye out"—an *in vivo* term—for certain information) can also be linked to information encountering experiences in this study.

Sharing information after acquiring it via several types of undirected processes also seems to be common. Undirected information acquisition processes are those in which information is obtained via means that require little or no purposeful seeking on the part of the user. A primary undirected information acquisition method among respondents in this study is receiving information via email. Other methods include e-list distributions, portal updates, and alert profiles.

Most of the time, an individual user acquires information that he/she perceives to be of interest to both him/herself and a potential recipient. Other instantiations (e.g., situations where the acquired information is mostly of interest to the recipient) are also experienced. However, for the most part, information acquisition in Internet-based environments is very much driven by personal needs and interests. Sharing with others is

a bonus, not a primary goal. This observation is supported by findings previously covered in Area of Inquiry 2.

This section details the results of an inquiry into the specific information acquisition processes associated with information acquiring-and-sharing in Internet-based environments. The needs and motivations that prompt information sharing processes associated with this behavior are covered next, in Area of Inquiry 4.

Area of Inquiry 4: Needs and Motivations that Prompt Information Sharing Processes Associated with Information Acquiring-and-Sharing in Internet-Based Environments

The objective of this area of inquiry was to collect data about respondents' perceived needs and motivations that prompt information sharing processes associated with information acquiring-and-sharing in Internet-based environments (IA&S). This section details the results of collecting and analyzing these data using grounded theory methods, and offers some initial conclusions about this component of the behavior under consideration.

This area of inquiry was addressed using items from all three data collection instruments. The screening/demographic questionnaire (See Appendix A for the full text) included one (1) open-ended item that collected qualitative data about respondents' life roles:

> In order to understand your answers to this survey, I would like you to describe yourself a little bit. In the spaces below, please list up to five of YOUR OWN primary occupational, recreational, and life roles. Include job titles, hobbies, volunteer activities, relationships, etc., that best describe you. You may have many roles, but please list the five that you think really "make you what you are."

The initial intent of this item was to collect simple demographic data regarding respondents' perceptions of their own life roles. As shown in Theme 3 of this section,

data collected with this item also address needs and motivations that prompt information sharing processes--the objects under examination in this area of inquiry.

The semi-structured interview guide (See Appendix B for the full text) included one (1) open-ended item that informed this area of inquiry: Why do you share information?

The critical incident log (See Appendix C for the full text) featured one (1) open-ended item that informed this examination of the needs and motivations that prompt the information behavior under consideration: Briefly describe what you're sharing this time.

As is typical in emergent research designs, the researcher also used clarifying/probing questions with interview respondents. Some examples:

- Can you tell me more about that?
- Can you give me an example of how that works for you?
- Why do you do that?

These clarifying questions helped expand the original/initial data collection instrument items, and helped develop desirable "thick description" (Strauss & Corbin, 1998; Geertz, 1973).

As is common in qualitative studies using emergent research designs, it became necessary for the researcher to adjust his line of questioning during data collection "real time" in order to guide discussions with respondents so that they addressed elements of this area of inquiry. For example, in the first few interviews, the researcher noted that when he asked the respondent about the kinds of information he or she is likely to share with others, the respondent would typically comment expansively about a mix of interesting but not always relevant or clearly articulated topics. Thus, after the first two interviews, it became apparent that the researcher would need to make stronger distinctions in his line of questioning and/or supplement the discussion guide in

subsequent interviews. In this area of inquiry, he began to verbally emphasize to respondents that, although discussion of peripheral topics was welcome, he was primarily interested in both their needs and their motivations to share acquired information in Internet-based environments.

The researcher began analysis with open coding, in which he "opened up" the data and reduced it into discrete parts, which allowed for a close examination of similarities and differences.

During the next analytical step (axial coding) the researcher placed these data bits and conceptual units into the following loose/emergent organizing scheme suggested by the objectives of this area of inquiry, the data collection instrument items, and data collected in initial interviews:

- Needs that prompt information sharing;
- Motivations that prompt information sharing;
- Workplace variables;
- Characteristics of the relationships between the sender and the receiver;
- Feelings, emotions attached to information sharing.

As the data collection and analysis process continued, composite data bits and conceptual units were related to their properties, and dimensions were related to those properties during multiple incidences of axial coding. This process of grouping, collapsing and comparing of data added structure and depth to these emerging categories and subcategories, and trends and patterns that began to address this area of inquiry emerged. Literature about "information giving" (Krikelas, 1983), information sharing (Wilson, 1999; Rioux, 2000), imposed searches (Gross, 1995), affective aspects of information behavior (Kuhlthau, 1991), and active collaborative filtering (Maltz & Ehrlich, 1995) also informed this process of organizing overall patterns and trends.

These patterns and trends are presented in the form of the following four (4) theme statements.

Theme 1: Organization-based motivators for information sharing behaviors

In discussions about information sharing, respondents often spoke of engaging in these behaviors in various organizational contexts. Information sharing within employment contexts was an especially popular discussion topic area, with respondents indicating that these behaviors are often motivated by their individual workplace cultures. Speaking enthusiastically about this theme, they suggested that information sharing in a culture that encourages this type of exchange is perceived as a prestigious indicator of one's affiliation with a healthy or efficient organization. Some illustrative quotations:

- "Our boss is always telling us to let other people know what's going on, or to pass along information to others. We all do it."
- "At my work, we just do it to help each other. I don't know . . . it's just what's done. If you know something that you think will help other people do a good job, we tell each other."

Many respondents go on to say that they consider information sharing with their co-workers, managers and customers/clients to be a part of their job description, i.e., an expected behavior in their working environments. This seems to be particularly true at school media centers. Some typical comments:

- "It's my job to share information with other people. Everybody comes to me because they think that I'm the one that pretty much knows what's going on all over the school. I'm in a spot to have contact with almost everybody, so I do tend to learn about things before a lot of other people, and then I just let them know."

- "I think that's why I'm working there . . . to get people the materials they need to support their classes, but also to be a resource [for various types of information] for other new stuff that may be going on."

Explicit or implied imposed searches (as described by Gross & Saxton, 2001) and subsequent information sharing also seem to be features of contexts where collaborative work and communication are emphasized. A typical quotation: ". . . people will ask me to let them know if I run across something that they may be wanting or looking for. Sometimes they just ask me to get it for them."

Motivation to share information may also be linked to what can be characterized as specific organizational information dissemination goals. These are instances in which a user may intentionally share information with someone who s/he perceives to be particularly effective in disseminating that information throughout the organization, thus tapping into the communication or networking leverage that person is perceived to have. Respondents in this study indicated that they are often motivated to share with these people. An illustrative remark: "I send things [information] to [name], because I know she's a good person to get the word out. She knows who would be interested in these things, and she's in contact with people all over."

One respondent talked about how she herself was considered by others to be a good disseminator, and was quite aware of the process: "These people may or may not know each other, but they do exchange information through me." For this group of respondents, needs/motivations/issues related to improved workplace processes, charitable giving, and activism are often the objects of information dissemination goals.

Environmental motivation to share information also extends into e-learning contexts where information-sharing behaviors among classmates using online distance learning tools are strongly promoted. Typical remarks:

- "I'm taking an online course, and the teacher is always telling us to chat with other students and to exchange tips on how to use the program [Blackboard] or talk about how we're doing our assignments."
- "We're supposed to share information on the class listserv. It's a part of our grade, but I think people do it because they like it, too."

Theme 2: Sharing behaviors driven by social needs and motivations

The need for social interaction is also a motivator for information sharing. This need is reflected in the number and types of people who receive the information shared by respondents. Collected data show that respondents typically share information with about a dozen people from their individual family, friendship, and workplace circles, i.e., groups of people and individuals with whom they have some kind of relationship. Some illustrative comments about typical numbers and types of recipients in these groups:

- "It depends on the group . . . anywhere from over ten co-workers to about five family and friends."
- "I don't have a set list . . . just friends of mine, my social network . . . about five or six people."
- "Maybe fifteen [recipients]? It's a mix of people, leaning more heavily on the friends side."
- "Wow, I don't know. I never thought about it . . . I have my parents, my good friend in Raleigh, my colleagues, my former colleagues, people I'm going to school with now . . . it's a pretty good size."
- "Actively about a half a dozen . . . and more sporadically probably a half a dozen beyond that."

These "networks" and "colleagues" and "groups" characterizations give strong indication that respondents are active members in a variety of groups (that are at least

partially constructed in online environments) that are socially valuable to them. Yet these typical descriptions are somewhat tentative and generalized. This may suggest that although respondents are sharing with friends, colleagues, family members, they may only be marginally aware that they are getting some of their social needs met in this process.

Exceptions to the low top-of-mind status of these groups are the occasional instances in which respondents pursue a type of "information agenda" in which they intentionally share a piece of information with another person so that a chatty, sociable dialogue about that topic may occur. Some example remarks:

- "I sometimes just feel like talking with someone about something, so I'll send it to my sister or somebody, and we can talk back and forth via email about it. . . . it's fun, and it's a nice break during the day."
- "I email stuff to friends because I just like talking about that stuff. . . . At any one time, I've got a few conversations going."

Theme 3: Sharing behaviors driven by emotional needs and motivations

Often respondents' social interactions with individuals belonging to the groups described in Theme 2 are also driven by emotional needs and motivations. This is not surprising, given that these information recipients include spouses, siblings, parents, grandparents, children, friends, close colleagues and classmates: all relationships that imply a certain level of emotional connectivity. As one respondent aptly put it, "You don't do this [share information] with strangers, right? You do it for people you care about." Additional respondent characterizations of these groups and individuals that suggest emotional needs and motivations for information sharing:

- "It's people I like."
- "Small circles . . ."

- "It's my social network."
- "It's mostly people with shared interests."
- "My social peers."
- "It's my network . . ."
- "It's a bunch of us who went to college together."

As would be expected, respondents describe their relationships with the people in these groups in emotional terms as "close" or "deep" or "familiar" (*in vivo* terms) or generally pleasant or based on shared interests. Some quotations that illustrate how these emotional bonds may motivate information sharing:

- "The deeper I know a person, the more things that I can try to pass on to them [sic]."
- "They are people with whom I can talk about the things that I pass on to them at length and in some kind of meaningful way."
- "It's [information sharing] one of the ways I show people that I care about them."

Emotional motivators for information sharing behaviors (as well as other motives) are also likely to be linked to life roles. For example, one respondent listed "mother of college-aged children" as a life role on the screening/demographic questionnaire, which, combined with data from interviews and critical incident logs, suggests that some of her motivation for sharing information via email with her children could be accounted for by her self-described life role as a loving, caring mother.

Emotion regarding recipients and their needs may also motivate the sharing process, especially if the information need is critical or highly charged. An example comment: "I guess it's just the emotional part of it—I mean if it's somebody who has cancer and you see something [a piece of information] about their specific type of cancer

[and then share it in some way] . . . you know that's going to be a strong connection with that person . . . on some emotional level."

Theme 4: Sharing behaviors driven by relationship maintenance/participation needs and motivations

As noted, the personal relationships and social and emotional interactions described by respondents in Themes 1-3 are valuable to them. A key motivator for information sharing is that this behavior is perceived as a way to maintain these relationships. Additionally, these information sharing/maintenance activities seem to provide respondents with concomitant pleasant feelings. Illustrative quotations:

- "During the day, I'm thinking about my family and friends all the time . . . when I come across something that I think would interest them, I share it with them. It's just a little something to let them know I'm here and to let them know I'm thinking about them."
- "It's whatever emotional relationship you have with that person…my husband is first in line. I share things with him because he's my husband, and I like to make any connections that I can with him."
- "Talking with people and sharing stuff with people…when you're friends with somebody, it's just what you do. It's part of the friendship."
- "I'm always ready to say hello and check in with my friends. But just emailing just to say 'hi' is silly. But if I find some information they like, I can say [in the email], 'Hi! I saw this and thought of you. Hope you're having a good day.' That really makes it worth it, and I've gotten to touch base and say hello, which I like."

Explanatory Scheme

The preceding theme statements were the final products of the axial coding process engaged in this area of inquiry. The final step of the overall analyzing/theorizing process guided by Strauss and Corbin (1998) was selective coding. In this step, themes, categories, and patterns identified during axial coding were related then integrated through statements of relationship into a culminating explanatory scheme.

The explanatory scheme for this area of inquiry begins with acknowledging that a mix of personal/internal factors (i.e., social, emotional, and relationship maintenance and participation needs and motivations) and external/environmental factors (i.e., workplace and e-learning environment norms, imposed searches, and information agendas) drive respondent users' information sharing processes. In busy, everyday lives these factors often interact in complex ways. The concept of user life roles is perhaps the strongest integrating concept that can account for the interplay between the social, emotional, environmental, and relationship maintenance motivations and needs. This notion reflects how individuals who go to work, have relationships and pursue interests play several different roles, and each of these roles drives the individual based on its own set of needs and motivations. Awareness of these needs and motivations may depend on the particular role that an individual is taking on at any given moment.

For example, as an employee in a sales office, a user may work in an environment where information sharing is encouraged and/or expected. She is aware of these environmental motivators and integrates them into her workplace tasks and processes satisfied that she is doing a good job.

When that employee leaves her office and logs on to Blackboard or MOO online course environments, she takes on her graduate student role and begins to work on her assignments or class discussion. Within this environment, she may use emailing or chat

features to share information with classmates about tips, shortcuts and efficiencies that she has discovered while working with these course management software packages. She also might share information about class content-related topics, and various personal comments (e.g., about birthday wishes, greetings, etc.). She is motivated to engage in these activities because she enjoys them and because she is aware that the online course instructor encourages this behavior in an effort to build online community.

Whether this user is in her role as employee or as student, she continuously experiences (in both conscious and unconscious ways) a desire (i.e., needs and motivations) to socially interact with family and friends and co-workers. Because of this, various internal/personal life roles such as daughter, girlfriend, mother, friend, and colleague seem to toggle between foreground and background throughout the day, temporarily supplanting employee, student, and other external/environmental life roles. She engages in information sharing behaviors because she wants the enjoyment of interacting with people who are close to her, and she feels these behaviors serve to maintain her relationships with them.

The integrating concept of life role also helps account for the apparently dynamic nature of "need" as it exists within the context of information acquiring-and-sharing behaviors. For example, as an individual moves through his life roles, "need" can refer to his own information needs, his need to interact with other people, his need to maintain his personal relationships, and the needs that he perceives his family, friends and colleagues have. As indicated by the data collected in this study, the level of awareness of these needs may be heavily dependent on the particular life role taken on at any given time.

This section details the results of an inquiry into the needs and motivations that prompt information sharing processes associated with IA&S in Internet-based

environments. The specific information sharing processes associated with this behavior is examined next in Area of Inquiry 5.

Area of Inquiry 5: The Specific Information Sharing Processes Associated with Information Acquiring-and-Sharing in Internet-Based Environments

The objective of this area of inquiry was to collect data about the specific information sharing processes that respondents use when they engage in information acquiring-and-sharing (IA&S) behaviors in Internet-based environments. This section describes the grounded theory methods used to collect and analyze relevant data, and offers some initial conclusions about this aspect of the IA&S behaviors under consideration.

All three (3) data collection instruments included items that addressed this area of inquiry. The screening/demographic questionnaire (See Appendix A for the full text) included one (1) closed-ended item that collected data on information sharing methods:

> What methods do you use to share this information that you have found? (Please check ALL THAT APPLY, and/or list other sharing methods that you use. Feel free to comment.)
>
> a. via email
> b. via telephone
> c. via an item (e.g., newspaper clipping, photocopied article, letter, etc.) sent via the U.S. Postal Service
> d. via a face-to-face conversation
> e. Other:

The semi-structured interview guide (See Appendix B for the full text) included four (4) open-ended items that helped gather data on specific information acquisition

processes and user preferences associated with these processes. These items are listed below:

1) Describe the process that you go through when you share information that you think may be of use to someone you know.
2) Did you find-and-share before the Internet was widely adopted? In what ways? Do you think you share more now? If so, why? If not, why not?
3) Now that you are an Internet user, do you think you share mostly via the Internet, or do you use other methods that you used before the Internet was popular?
4) Why do you share information via the Internet rather than by telling others about it in person or on the phone or by other means?

The critical incident log sheet (See Appendix C for the full text) featured one (1) item that addressed this area of inquiry: How will you share this information (e.g., email, AOL Instant Messenger, in person, etc.)?

To help develop thick description, the researcher also used clarifying/probing questions with interview respondents to expand the original/initial data collection instrument items. Some examples of these probes:

- What other means do you use to share information with others?
- Can you describe how that works?
- Is it always this way for you?

By using these probes and by relying on grounded theory-based data collection processes, the researcher was able to gather data about both specific sharing processes as well as notable supplementary data about why respondents use Internet methods to share information that they acquired in Internet-based environments as opposed to other communication channels such as face-to-face, telephone, etc. Although collecting these

enriching data was not an explicitly articulated goal for this area of inquiry, it will be shown that these data are quite useful and complementary to the original intent.

These useful discoveries could have been easily overlooked using less-flexible data collection procedures (e.g. relying solely on closed-ended paper-and-pencil surveys). This underscores some advantages of using the grounded theorizing process, which the researcher commenced during the first interview.

Once again, the researcher began analysis with open coding, that is "opening up" the data and reducing them to discrete parts, which allowed for a close examination of similarities and differences. During axial coding, the researcher placed these data bits and conceptual units into a topically-based, loose/emergent organizing scheme. This scheme was inspired by the objectives of this area of inquiry, the data collection instruments, and initial and subsequent interviews. Below is a list of the topical categories into which emerging data were arranged:

- Internet-based sharing mechanisms
- Other sharing mechanisms
- Behavior before and after adopting the Internet
- Email writing habits
- Time issues
- Emotional factors
- Preparing information for sharing
- Motivation for using Internet-based sharing methods: senders' convenience
- Motivation for using Internet-based sharing methods: recipients' convenience.

As the iterative sequence of interviews, field note taking and collection of critical incident logs continued, composite data bits and conceptual units were related to their properties, and dimensions were related to those properties during multiple subsequent

instances of axial coding. This repeated process of grouping, collapsing and comparing of data added structure and depth to these emerging categories and subcategories, and trends and patterns that began to address this area of inquiry emerged. Literature on information sharing behaviors on the Web (Erdelez & Rioux, 2000; Rioux, 2000), active collaborative filtering (Maltz & Ehrlich, 1995), and browsing behavior in electronic databases (Twidale et al., 1997) also informed the "teasing out" of these patterns and trends.

These patterns and trends are presented in the form of the following three (3) theme statements.

Theme 1: Information sharing behaviors have increased with the adoption of Internet-based sources.

Respondents say that they engage in information sharing behaviors more often since email, the Web, intranets, e-mailing lists, etc., have become a part of their collection of available information sources. Typical remarks:

- "I definitely share more now. It's so much easier, and I find more stuff to share on the Web."
- "I used to call and mail stuff [via post], but sharing by email is a lot easier, so I think I do it more now that it's so easy."
- "I still do it the old way [i.e., via telephone, via post] sometimes, but I do it a lot more online now."
- "I do it more now. It's so easy that it allows me just to impulsively share, whereas before [the Internet] I'd think about it more [before sharing information]."

As will be seen in subsequent themes, the convenience afforded by Internet-based sources and sharing methods is a key feature of information A&S in these environments.

Theme 2: Email is the preferred method of sharing information acquired in Internet-based environments.

Over half of the respondents stated a distinct preference for sharing information in Internet-based environments, and the most favored Internet-based sharing method is email—a mechanism which is perceived as being quick and requiring very little effort. Typical remarks:

- "I like to just send an email if I've got something to share. It's so easy and it takes no time at all."
- "It's [using email to share] so quick and easy to do."
- "I think it [email] caters to that need to want to do things quickly and to get it [acquired information] off quick [to a recipient]."

Sharing information via email is also seen as an aid to staying organized and productive. Some illustrative quotations:

- "It [email] allows me to multi-task…do my work and send things to people."
- "It [email] keeps a record of what you've sent and received. I like to have that."
- "It helps keep you organized. I wouldn't be able to find it [pieces of information] to give to them [recipients] face to face, but with email, you can get it out right away and not worry about it."

Cost is also a factor in favoring information sharing via email. Respondents perceive email to be free or very inexpensive, which is significant to those who have friends and family at long distances and in foreign countries. Some descriptive remarks:

- "My daughter is in Australia, and it would cost me a fortune to call her every time I wanted to tell her something or share some bit of news or information. So email is the way to go."

- "My family is up in Massachusetts and I'm always emailing them to say hi or pass things along to them, and it's free with email."

Additionally, respondents generally consider it just as easy to share information via email with one person as with several people. This feature is especially appreciated by those who share with groups of people via e-mailing lists (e.g., listservs), which are perceived as an email variant by respondents in this study.

The asynchronous nature of email (and e-mailing lists) is also an appreciated bonus for busy respondents who keep variable hours. Typical quotations:

- "My schedule is a lot different from other people's . . . with email, I don't have to worry about calling somebody at twelve at night."
- "If I try to call my mom, I may get her voice mail instead of actually talking to her…so I can just send her an email, and she can get it whenever she can, whenever she's at her desk."

As indicated by the second quotation above, respondents also consider email to be an easily "scannable" (*in vivo* term) way of communicating. For example, compared with voice mail, to which the receiver must listen sequentially and often in its entirety, email allows the recipient to read a list of in-box messages out of sequence, and allows him/her to delete messages without actually having to read their texts—a convenience that respondent senders like themselves, and like affording their recipients.

Instant messaging (IM) services of various brands (e.g., AOL Instant Messenger, MSN Messenger, etc.) are also popular sharing methods among respondents. They are perceived as "a nice convenience" (*in vivo* comment) that offer users an alternative to email. Both email and IM sharing methods appeal to respondents who are online for a significant portion of their workday, and for those who rely on dial-up modems. Some illustrative comments:

- "I like to use email and AOL Instant Messenger because my phone and my computer modem use the same line. If I called somebody, I'd have to log off, and then get back on, and that's a pain."
- "I'm online a lot during the day and my husband and my sister are online a lot, so it's easy to catch them [i.e., share information] by shooting them an email or with Instant Messenger…"

IM is also seen as a way to limit the scope of conversations and still be able to share information. As one respondent put it:

> If you feel like getting into a little conversation, you can use Messenger. It's sort of more personal than email, but it is pretty easy to say 'OK, gotta go,' with Messenger. . . . It's somehow easier to get in and out of the social interaction than it would be if you were standing there talking to the person. . . . If you don't want to get into a conversation at all, you can just email it to them.

These notions of time compression and time control extended into discussions about using the telephone to share information. In general, sharing by telephone is considered to be much more time consuming due to what respondents think is extraneous conversation. An example comment: "Sometimes I don't like to call people because they chit-chat too much . . . they need to do all kinds of talking, like, 'Hey, how are you, how are the kids . . .' before I can really say what I called for."

Other respondents spoke of distinctly negative feelings about using the telephone, saying its immediacy can be rude and that its open-ended format encourages wasting time. Yet the telephone does have a place with these respondents. In general, this group likes to share information on the phone "when your voice matters" or "when I want a more personal connection (*in vivo* comments). An illustrative comment:

> "When I want to say man, I have had a really crappy day or you know, I was thinking about Dad, because he passed away last year—that sort of thing . . . I would rather have the personal connection . . . [that one can have on the phone]."

Respondents add that some of their recipients will indicate which method they prefer by giving out email addresses or phone numbers. Giving out one's phone number is perceived by some respondents as being linked with more personal feelings, whereas giving out one's email address is seen as less personal and less linked to emotion.

As with the telephone, respondents also choose face-to-face sharing methods based on the subject matter of the information, or based on the relationship between the sender and receiver. Physical proximity between the sender and receiver, and the receiver's proficiency with computers, also influence the choice to share in person. Some illustrative quotations:

- "If I'm talking about family problems or serious money issues, I usually do it in person."
- "I don't really share really personal things with my girlfriend by email. Other people, maybe . . . but we've never done it that way, so if it's something for her and it's personal, I wait until I see her."
- "Well, if I share something with my office mate . . . he's right there. There's no real need to email it to him . . . we're in the same room."
- "My mom doesn't know how to use a computer, so I usually just print things out from the Internet and give them to her when I see her."

Like face-to-face or telephone exchanges, hand-written letters are perceived as more intimate, or are perceived to be better channels to communicate or share more personal information. Some respondents have developed a habit or ritual of hand writing letters to certain recipients for whom they have special feelings. The ritual of hand writing and posting letters to these people evokes poignant feelings and memories. For example, several respondents exchange hand written letters (often containing newspaper clippings of interest, photographs, coupons, etc.) with their grandparents. The ritual is

satisfying and sentimental, and is a key feature of the relationship. Both the sender and the recipient enjoy writing and receiving hand written letters, although email or telephoning is possible. Other interviewees say they think that receiving mail via post is fun, and will choose to use that method to give that fun to their recipients.

Despite some of the advantages, respondents definitely perceive letter writing and other non-Internet sharing methods as somewhat on the decline, again, primarily due to time/convenience factors. This seems to be particularly true of sharing via post or "snail mail" (*in vivo* term). Typical comments:

- "Email is so much easier than finding a stamp and finding and envelope and finding somebody's street address. Doing that was so much effort . . ."
- "Why bother with mail? It's too much work, and I'd rather send it instantly."

Ultimately, the choice of sharing method depends on a mix of sender and recipient convenience and preference, which is discussed in the next theme below.

Theme 3: Habitualized email sharing strategies are based on the convenience of both senders and receivers.

Respondents seem to think deliberately about the best process by which to share information they have acquired, thus the term "sharing strategies" is appropriate here. As users choose and/or develop sharing strategies, their own convenience and the convenience (and value) they create for the people with whom they share is typically kept paramount. As indicated in Theme 2, the preferred way to address these convenience issues is to share information via email.

Usually, respondents keep their email client open during Internet sessions. When they acquire information that they feel like sharing, it is a small matter for them to use the email client and "fire off an email" (*in vivo* term). Although this process is perceived to be quite quick and easy (i.e., convenient) for the sender, it does involve multiple steps.

One of the first steps is the addressing of the email containing the information to be shared. Respondents indicate that they mostly depend on their email client's address book feature rather than their own memory to help them both select and address emails. Some illustrative quotations:

- "I just click a button, hit that address book, and then zip! It's off. I never memorize any of those addresses. That's why I really like my Netscape email [client]. I can have my mail and my address book with me at any computer I use."
- "Sometimes I look at my address book and say . . . hmmmm . . . who here would like to get this [piece of acquired information]?"

Personalizing and contextualizing information shared via email is another universal step among the respondents in this study. This step takes a variety of forms driven by a variety of reasons. One common urge is to "add a human touch" (*in vivo* comment) to the email used to share information. Some illustrative comments:

- "Well, as impersonal as email is, I always just say hello or something . . . just to make it sound more human."
- "I want them [recipients] to think of this as a nice little extra contact with me, so I make sure I say hello and ask them how they're doing."

In other instances, senders want to help the recipient recall a conversation about the topic at hand, so that a context for the shared message is created. Some example respondent comments:

- "I say, 'remember when we were talking about this? Well, I found this and thought you might be interested.'"

- "I usually remind them about the time we talked about the thing that I'm sending them. I mean, I don't want them to think I'm just sending them something out of the blue."

Respondents also say they might write a short explanation about why they are sharing the information:

- "I put a brief message in there, kind of giving them the reasons for why I'm sending it."
- "I tell them, 'I read this and it made me think of you.'"
- "I just write in there 'I saw this and thought of you and thought you might want to look at it.'"

Distinguishing sharing emails from spam (i.e., unwanted mass-mailed messages) or "forwards" (*in vivo* term) is particularly important for respondents. Typical comments:

- "I'll put something in the subject line so they know it's from me and not just some spam."
- "I always put a personal note in there because I don't like getting forwards. My little message separates the things I share from generic forwards."
- "I want them to know who it is from…I hate to get ones [emails] that are just passed on."

Once the personalizing/contextualizing step is done, the sender will typically flip back and forth between his/her email client and browser to cut-and-paste a URL into the email message and then send it. Emailing a cut-and-pasted URL is perceived as being quicker than emailing cut-and-paste text, although in some instances, "if the amount of text is small, and I can get if off the Web page, I just put that in the email" (*in vivo* comment).

As a final step in the sharing process, a respondent may quickly scan the visual aesthetics of the email message, tweaking formatting, spelling and punctuation. Once this is done, the message is sent, and the user goes back to the task at hand. As one respondent describes it, "It's just a little detour from what I was doing…not a big deal."

Although a few respondents occasionally used Web site sharing buttons (i.e., buttons that are labeled "email this page to a friend" or similar), they are for the most part not a major part of any of the respondents' sharing strategies. Sharers in this study seem to be aware of the existence of these buttons, but feel somewhat indifferent or vaguely negative about them, or feel they are lacking in utility or security in some way. Some illustrative comments:

- "I've seen them [sharing buttons], I just haven't used them. I don't know why."
- "I don't have anybody's email address memorized, so I can't really use the buttons."
- "They [sharing buttons] seem too commercial for me."
- "I like to have a record of what I've sent, but I can't have that if I use that button. I don't know what they [recipients] get [when using sharing buttons] anyway."
- "I don't know what they're going to do with the email addresses I put in. I don't like that."

Collected data indicate that, once respondents get used to using a certain sharing strategy, this process becomes habitual and well-integrated into their everyday information behavior. As one respondent put it, "I do this [share information] all the time, and I hardly think about how I'm doing it. What I do just works."

Explanatory Scheme

The preceding theme statements were the final products of the axial coding process engaged in this area of inquiry. The final step of Strauss and Corbin's (1998) analyzing/theorizing process was selective coding. In this step, themes, categories, and patterns identified during axial coding were related then integrated through statements of relationship into a culminating explanatory scheme.

The explanatory scheme for this area of inquiry is integrated by a multi-dimensional concept of convenience—a notion that permeates the information sharing processes, patterns and trends presented in this section. Indeed, these findings suggest that it is the convenience afforded by the Internet that has encouraged an increase in IA&S behaviors among respondents. Users are quickly and easily exposed to what they perceive as more information on the Internet, and they have readily adopted Internet-based sharing methods.

Email is by far the preferred method of sharing information acquired on the Internet, primarily because it is simple, quick, efficient, and cheap; i.e., convenient. Email is in fact so integral to IA&S processes, that the choice to use all other sharing methods is always considered against the convenience of email. Factors that sometimes outweigh this convenience are the richer, more personal aspects of sharing methods such as Internet Messenger, face-to-face conversations and hand-written letters, which are perceived as warmer, more human and more relationship-driven ways of sharing information.

Convenience issues extend to the individual sharing strategies that are developed and habitualized by users, who take into consideration their own convenience as well as that of their recipients. For example, users typically like to keep both their email clients and Web browsers open at the same time, so they can quickly and easily flip back and

forth between applications, cutting-and-pasting URLs and text and utilizing built-in addressing functions that eliminate the need to look up email addresses.

Personalizing and contextualizing the information is a convenience enhancing step that is mostly done for the benefit of recipients. Senders typically add a greeting and then write a short description as to why they are sharing the information. This adds convenience value for the recipient because it distinguishes information sharing from spam, it may jog the recipient's memory to recall a conversation about the information being shared, and it simply makes the electronic message more human and less mechanical.

This section details the results of inquiry into the sharing processes associated with A&S in Internet-based environments. Users' perceived cognitive and affective states as they sharing information that they believe is of interest to someone they know is covered next in Area of Inquiry 6.

Area of Inquiry 6: Internet Users' Perceived Cognitive and Affective States as They Use Various Processes to Share Information that They Believe is of Interest to Someone They Know

The objective of this area of inquiry was to gather data on respondents' perceived cognitive and affective states as they share information that they believe is of interest to their family, friends and colleagues. This section details steps taken to collect and analyze these data using grounded theory methods. Some initial conclusions about this component of information acquiring-and-sharing (IA&S) in Internet-based environments are also presented.

The researcher addressed this area of inquiry with respondents by using the following five (5) items on the semi-structured interview guide (See Appendix B for the full text):

1) You indicated on a survey that you find information for other people in Internet-based sources, and then you share this information in some way. Tell me how this process works for you (in general).
2) Describe to me what happens in your mind when you find something that you think may be of use to someone you know.
3) How do you feel when you find something that you think may be of use to someone you know?
4) Why do you share information?
5) How does finding-and-sharing make you feel?

The critical incident log sheet (See Appendix C for the full text) featured one (1) open-ended item that addressed this area of inquiry: What thoughts and feelings did you experience when you found-and-shared information this time?

The researcher once again used clarifying/probing questions with interview respondents. These clarifying questions helped to collect data that supplemented the original/initial data collection instrument items, helping to develop the desirable "thick description" as described by Strauss and Corbin (1998) and Geertz (1973). Some examples of these questions:

- What else are you thinking when you share information you've found with other people?
- What else are you feeling?
- What thoughts go through your head?
- Can you tell me more about how that works for you?
- Do you think that way or feel that way frequently?

The researcher began the grounded theorizing process as soon as qualitative data about this area of inquiry were collected during the first interview. At the open coding phase,

the researcher "opened up" the data, reducing them to data bits and conceptual units. In the next analytical step (axial coding), the researcher placed these data bits and conceptual units into a topically-based, loose/emergent organizing scheme. This scheme was inspired both by the objectives of this area of inquiry and data collected in initial and subsequent interviews and critical incident logs. Below is a list of the topical categories into which emerging data were arranged.

- Respondents' thinking processes as they share acquired information
- Positive feeling experienced during sharing processes
- Negative feeling experienced during sharing processes
- Mailing list behaviors
- Evaluative processes
- Quality issues

A repeated process of grouping, collapsing and comparing of data (axial coding) added structure and depth to these emerging categories and subcategories, and trends and patterns that began to address this area of inquiry emerged. Literature on information sharing behaviors on the Web (e.g., Erdelez & Rioux, 2000; Rioux, 2000), cognitive states (e.g., Belkin et al., 1995; Wilson, 1994) and affective aspects of information behavior (e.g., Kuhlthau, 1991) guided this process and helped organize overall patterns and trends. These patterns and trends are presented below in the form of the following four (4) theme statements, a convention adapted from Chatman (1996; 1999).

Theme 1: Respondents perceive a relatively low awareness of the cognitive states they experience during the process of sharing acquired information.

When initially questioned, respondents indicated that they could not readily report on what they were thinking or what was going through their minds as they used various processes to share acquired information with others. Saying they experience very little

conscious contemplation or high-level thinking when using of Internet-based sharing mechanisms, they generally described their cognition during these processes in very broad, unspecified terms. They also indicated that they perceive this somewhat impulsive behavior to be inherent and inscrutable. For example:

- "I don't know what's going on up there [points to head]. It's just something I do; it's just a natural part of me."
- "I don't think much about it. It's a low mental load for me."
- "It's impulsive . . . I don't know . . . if I thought about it [the process] much, it [a piece of acquired information] might not be sent."
- "It's such a part of my personality, that a lot of times, I don't even question it . . . I've always been that way."
- "I've always been one to share . . . in one form or another."

Theme 2: A quick cognitive evaluation state is evidenced.

Although respondents were not able to fully describe or be entirely aware of their cognitive states while they engage in information sharing behaviors, upon probing, they were able to articulate what can be described as a fleeting cognitive evaluation state. As indicated by the collected data, this cognitive state can feature one or a mix of three types of evaluation.

The first type of evaluation is an assessment of the "fit" (*in vivo* term) between the acquired information and the potential recipient. In order to assess this appropriateness, respondents give evidence of mental check-listing and association activities that occur as a part of sharing behavior. Some illustrative remarks:

- "I think, how interesting would this be to my mother? How interesting would this be to David? Would they read it? . . . If I pretty much think, yes, then it's okay, cut, paste and send."

- "It [acquired information] kind of starts a flipping through of my mental Rolodex . . . who else would be interested in this? . . . and then I pick people and I send it."
- "You have lists of people and categories of people in your life, and I guess when you find something that interests me or that might interest someone else, you . . . kind of make the connection and email it to them [sic]."

Another type of assessment that occurs during the cognitive evaluation state focuses on quality thresholds and needs. Since respondents are sharing information with people they care about, they are keen on sharing only what they consider reliable, trustworthy information that is useful. Some illustrative quotations:

- "I don't want to waste their [recipients'] time on something, so I want to screen it first."
- "I look to see if it has good writing, and if it's from someplace that I trust."
- "It has to be from a reputable source, because that's what I would want to read and see."
- "I always ask myself: do they [recipients] need this? What kinds of stuff do they need, and is this it?"

Respondents also cognitively assess ease of sharing (for themselves) and ease of access (for their recipient). As one respondent put it:

> My first thought is: how hard will it be to pass this on to someone else? Is it in the form of a URL that can be passed on, or will this person have to go through a lot of steps to actually get there? I guess that my first concern is this [the acquired information] from a place where access is free and uncomplicated? . . . This is all in a span of seconds.

As mentioned, these cognitive evaluation states are perceived to be very quick, and are likely to be linked to email routines:

- "It's so quick."

- "It's not like I sit there [for a long time] and say 'Oh, someone was just talking about this, who was it, who was it? It's more of an instant thing."
- "Download for yourself and click for somebody else . . . it's automatic, you don't really think about the thought process. . . . it's within seconds that you're doing it . . . click, click."
- "It's very quick—I don't think about it much."
- "It's just a quick part of what I do with my day's inbox of emails . . . I figure out what to read, what to delete, what to share, and what to reply to.

Theme 3: Respondents experience a varied mix of positive affective states during the process of sharing acquired information.

In contrast to discussing their cognitive states, respondents were much more able to recall and articulate the varied mix of affective states that they experience as they move through the process of sharing information with others in Internet-based environments. Data collected via interviews and critical incident logs indicate that most of these affective states are overwhelmingly positive. A typical comment: "It's got to be positive—it's got to be something that makes you feel good…otherwise I wouldn't do it."

Some respondents experience good feelings during sharing processes by pursuing what can be characterized as an information agenda. That is, a user may acquire information, and then share it in an attempt to obtain a particular benefit or encourage some kind of action from the recipient. One such agenda is to share information in order to engage others in discussion both for pleasure and to learn the subject better. An illustrative comment: "You know you've learned something when you share it. You talk about it, you think about it more, it actually becomes more absorbed into your understanding of it."

Another type of information agenda discussed is sharing information about consumer items that are potential gifts in the excited hope that the respondent "gets a hint" (*in vivo* comment). For example:

- "I'm sending my husband a Webpage about the iPod, saying how cool it is and stuff. I'm hoping he'll get it for me for Christmas!"
- "I send my daughter some gift ideas for her boyfriend. I'm hoping she'll let me know what she thinks so I'll know what to get. It will also tell her that her boyfriend is welcome in our family and that I plan to give him a present."

Other respondents spoke of agendas to make others aware of certain social causes. For example: "I saw this big anti-gay ad posted in the DC Metro, and it really disturbed me. It was so hateful, so I wanted to spread awareness about it."

Respondents also said they experience good feelings about the targeted recipient with whom he/she shares acquired information. Often these feelings are based in shared humor, interests, or conversations or experiences they have had. Some illustrative quotations:

- "If it's something of a shared interest, you want them to share the same joy, excitement, horror, whatever, that you have."
- "I find things that make me laugh out loud, and I really enjoy sharing those things with people who I know will laugh too."
- "It [acquired piece of information] was this crazy thing that reminded me of a funny conversation that I had with my husband, so I liked sharing that with him."
- "I thought it [piece of acquired information] would be good to share with my friend, so she could remember the nice conversation we had about this [topic]."

- "My brother wants to work overseas, and we were talking about that, and then I found this article about it online, and it made me feel good to share that with him."

Often accompanying these thoughts of friends, family and colleagues is a satisfaction and a feeling of connection associated with being of use or of being helpful with the everyday life issues of other people. Example remarks:

- "It [sharing acquired information] felt good that I was able to help her save some steps in her search."
- "It [sharing acquired information] made me feel helpful."
- "I just was hoping that this information helps her."
- "I was glad to help her plan her honeymoon [by sharing acquired information]."
- "I wanted to help him with his work [by sharing acquired information]."
- "It's kind of a helping feeling."
- "It's [shared information] going to help that person. That alone just makes me feel good."

Occasionally, respondents simply enjoy sending acquired information accompanied by a greeting to surprise someone they know. Quotations:

- "I just wanted to cheer him up, so I sent him this silly little game."
- "I thought she could use a fun break during a weekday, so I wrote 'Something fun for Wednesday' on the subject line and sent it [an acquired piece of information] to her."

Respondents who share information on electronic mailing lists (e.g., listservs) or with several people at a time also experience good feelings. The quotations below

indicate that they enjoy participating in the development and maintenance of these online communities:

- "When I share on a listserv, it's sort of like fulfilling a casual agreement to share tips and interesting tidbits."
- "What I found was relevant to a class discussion we had last night, so I passed it on to everybody else on Blackboard. I thought it was interesting, and I thought the group would too."
- "I may as well pass something good to the listserv . . . that's what it's there for."
- "I know that other people on the listserv are interested in graphic novels and comic books, so I wanted to let them know."
- "I love robot war shows, so I always try to pass stuff on about those kinds of shows to a group of people I know who likes them. Everybody in the group kind of does that."

Other general *in vivo* descriptions of the affective states users experience as they share acquired information:

- "satisfying" (e.g., "it's satisfying—kind of like you feel when you've solved a puzzle")
- "successful" (e.g., I feel successful, like I've gone and fetched something worthwhile, like a dog with a bone. It's a good thing.")
- "excited" (e.g., "I guess I get just so excited that I found something that I think someone else would like to read about. . . . I feel like in some way, it's going to enrich their world . . .")
- "smart" (e.g., "It makes me feel smart or kind of cool when I share stuff that I know my friends don't know about yet.")

- "fun" (e.g., "I used to tear things from a magazine and you know, write a letter and send it in the mailbox . . . that was fun. I get that same kind of fun-ness rush when I do it on the Internet now."

Theme 4: Respondents do occasionally experience negative affective states during the process of sharing acquired information.

Respondents' discussions mostly focused on the positive feelings that they experience when they share information with others. However, collected data indicate that negative affects sometimes edge into the process. For example, one respondent considered whether her affinity for IA&S behaviors was an indicator of poor self-esteem: "It's sort of sad that in order to make yourself feel good, you have to do that for other people."

Other respondents were concerned with appearing boastful. An illustration: "I think some people might think you're a know-it-all if you got a lot of resources and you share those resources and information."

The topic of the shared message may also cause a user to feel self-conscious. For example, one respondent remarked: "I sent out some information on a listserv about how to avoid credit card fraud. I thought some people could use it. But then afterwards, I felt kind of dorky for sending something like that."

Mild feelings of guilt or self may also accompany information sharing processes. Some example quotations:

- "I sometimes kind of feel selfish for telling somebody about something that I want to talk about."
- "Maybe I'm not being the best friend as far as keeping in touch, and that's the reason I send them [friends] something—to keep the connection up with them."

- "I kind of feel like a big gossip when I send out dirt about movie stars and celebrities."

Explanatory Scheme

The preceding theme statements were the final products of this area of inquiry's axial coding process. The final step of the overall analyzing/theorizing process emphasized by Strauss and Corbin (1998) was selective coding. In this step, themes, categories, and patterns identified during axial coding were related then integrated through statements of relationship into a culminating explanatory scheme.

The themes presented in this section indicate that almost all of the cognitive processes that accompany information sharing behaviors, apart from a quick cognitive evaluation state, have a routine, somewhat unconscious, natural quality about them. This point is underscored by users' low top-of-mind awareness of these processes, and their suggestions that these behaviors are simply an inherent part of their overall set of information behaviors. Users make an effort to engage in a quick cognitive evaluation of the content that they share with other people because they want recipients to have an enjoyable experience.

Enjoyment and other positive affective states are key characteristics of the process of sharing acquired information. Although users may be largely unaware of most of their cognitive states during this behavior, they are very much aware of, and enjoy the feelings that accompany these actions. Positive feelings associated with sharing information to pursue information agendas, recalling amusing or intimate conversations, and sharing gift information, jokes, helpful tips, etc., all contribute to an overall affective state that makes users experience a satisfying sense of fulfilling a kind of internal directive to interact with the family, friends and colleagues that make up their social world.

Given these special cognitive and affective states associated with the sharing component of information A&S in Internet-based environments, the following integrating concept is presented for this area of inquiry: using various processes to share information that users believe is of interest with family, friends, and colleagues is a type of information behavior that drives the everyday interactions that support human relationships.

Summary

This chapter reported on the results of the integrated analysis and theory building process used in this study. Two sections were put forth.

The first section of this chapter presents the findings of the screening demographic survey. This survey indicates that IA&S is a common information behavior.

The second section of this chapter reported on the findings, themes and explanatory schemes articulated from grounded theory analysis of interview and critical incident log data. These findings indicate that IA&S is motivated by a mix of personal and environmental factors. When users engage in IA&S, they acquire information in ways that are similar to the directed, semi-directed and undirected acquisition behaviors found in other information environments. Most of the information shared in Internet environments is acquired in Internet environments.

After information is acquired, users experience a very quick and relatively unconscious cognitive process in which they evaluate the information for quality and make an association with a potential recipient. Once the decision is made to share the information, a quick email-based sharing strategy is enacted. This process is quite pleasant for the user.

The findings discussed in this chapter are the building blocks of a grounded theory of IA&S in Internet-based environments. Guided by Strauss & Corbin (1998) the next and final step in the theorizing process was using statements of relationship to integrate these elements into explanations that address the primary research questions. This step and its theoretical outcomes are discussed next in Chapter 5.

Chapter 5: Theoretical Integration

The goal of this study was to systematically examine information acquiring-and-sharing (IA&S) behaviors among individual Internet users and develop grounded theory that describes and explains these phenomena. Toward this goal, IA&S behaviors reported by graduate student respondents were examined using an exploratory research design that guided the collection and analysis of survey, interview, and critical incident log data. This research and resultant in-depth findings are covered extensively in Chapters 1-4.

This chapter presents a grounded theory of IA&S in Internet-based environments that is based on the research efforts described in prior chapters. As mentioned throughout this document, Strauss & Corbin (1998) indicate that the final step toward developing grounded theory is to use statements of relationship to integrate findings that have been iteratively collected and analyzed.

With this guideline in mind, the researcher integrated the findings and initial explanatory schemes of the screening/demographic survey, the semi-structured interviews, the critical incident logs, and collected field notes into culminating narratives. These narratives, which are presented below, address the two primary research questions, offering a grounded theory of IA&S in Internet-based environments. Thus the goals set forth for this study are met. Presenting the concluding theoretical statements in this manner is consistent with other grounded theory studies in library and information science, e.g., Chatman (1996; 1999), Pettigrew (2000) and Jackson (2001).

A GROUNDED THEORY OF INFORMATION ACQUIRING-AND-SHARING (IA&S) IN INTERNET-BASED ENVIRONMENTS:

Part I. The behaviors and processes associated with IA&S in Internet-based environments

IA&S in Internet environments is an identifiable and common information behavior. There is a link between time spent in Internet-based environments and frequency of IA&S.

The first behavioral element of IA&S is information acquisition. Most of the information shared in Internet-based environments is acquired in Internet-based environments. The Web, email, electronic mailing lists, etc., are all primary sources of information that is acquired and subsequently shared online.

Information acquisition during IA&S episodes mirrors information acquisition in other information environments. That is, information is acquired in Internet-based environments through a mix of directed (e.g., purposeful searches), semi-directed (e.g., information encountering) and undirected processes (e.g., receiving information via email from others).

The second behavioral element of IA&S is information sharing. The notion of convenience permeates the information sharing process associated with IA&S. For reasons of convenience, users prefer to use email to share information during IA&S episodes. Email is perceived to be quick, easy, efficient, and inexpensive, and its scanability and asynchronous nature are appreciated.

The processes associated with IA&S in Internet-based environments are relatively straightforward. Typically users keep their email clients and Internet browser open on their desktop simultaneously during their online sessions. This is perceived to be a low-effort, convenient configuration that facilitates IA&S. When users acquire a useful piece

of information in an Internet-based environment, they simply toggle back-and-forth between applications, usually cutting-and-pasting a URL into an email message, quickly addressing the message using an integrated email address book, and hitting the "send" button. When users receive an email they would like to share, they simply forward it with an explanatory note.

Explanatory notes are key distinguishing features of all emails that contain acquired information that is intended to be shared. These personalized messages serve several functions. They can be a greeting, an aid in setting context for the recipient, and a way to distinguish a shared message from unwanted spam. They also serve to make receiving shared information more convenient (and pleasant) for the recipient.

Part II. The motivators and corresponding affective and cognitive states associated with IA&S in Internet-based environments

Affect variables link users' needs to their motivations to acquire information (which may be subsequent shared) in Internet-based environments. Feelings associated with the need to satisfy curiosity about the world in general is an especially strong driver of information acquisition behavior. Users are also motivated to acquire information by feelings of various intensity that result from perceived needs and desires to edify themselves about everyday topics such as pop culture, sports, news, professional trends, consumer products, health issues, computer tips, etc.

A mix of personal/internal factors (e.g., social, emotional, relationship needs) and external/environmental factors (e.g., workplace directives, school norms, imposed searches) motivate users' information sharing behavior. The ways in which these factors interact with each other and the ways in which they drive information sharing depend on the individual user's mix of life roles (e.g., daughter, boyfriend, sales manager, student, mother etc.), which toggle between foreground and background throughout the day and in

different contexts. The motivation to share information (and the awareness of this motivation) is dependent on the particular life role that happens to be in the forefront for the individual user at any given time.

Even though users are mostly unaware of the cognitive states they experience during IA&S, there does seem to be a consistent cognitive storage-and-recall process inherent in this behavior. This process has its origins in communication that occurs between users and their family, friends, colleagues and others. With low effort or consciousness on the part of the user, cognitive representations of these communications, the various topics mentioned, the various information needs mentioned or inferred, and the feelings experienced during these interactions are "stored" in potential memory.

These representations remain inert until a cognitive threshold is breached. This occurs when a user acquires information of a certain quality via various Internet-based methods. Quality criteria include usefulness, reliability, interest, and novelty.

Once the cognitive threshold is breached, a cognitive threshold is quickly activated. In this step, users experience a variety of mental states that mimic sensory states as they recall cognitive representations "stored" in potential memory and make associations between the information they have acquired and potential recipients of this information.

Users then make a quick cognitive evaluation of the content that they share with other people. This is to ensure that the information is appropriate, of good quality and easily accessible for the recipient.

Although they are quite complex, the cognitive processes associated with IA&S are extremely quick and require very little effort on the part of the user. IA&S is a natural and pleasant experience that taps into users' positive feelings about themselves, their relationships, their life situations and the information they acquire.

Part III: Synthesis

Information acquiring-and-sharing is a common, identifiable, pleasant information behavior that supports the everyday interactions and information exchanges that drive human relationships via an interplay of information needs, affect, cognition, and communication variables.

SUMMARY

A grounded theory of information acquiring-and-sharing in Internet environments is presented, meeting the goal set forth at the beginning of this study.

The implications for this theory, the limitations of this study, and suggestions for future research are discussed next in Chapter 6.

Chapter 6: Conclusion

The objective of this study was to present grounded theory that identifies, describes and explains aspects of individuals' information acquiring-and-sharing (IA&S) behaviors that occur in Internet-based environments. Two primary research questions were pursued:

1. What are the behaviors and processes associated with IA&S in Internet-based environments?
2. What are the motivations and corresponding affective states associated with IA&S in Internet-based environments?

The researcher discovered that IA&S in Internet-based environments Information acquiring-and-sharing is a common, identifiable, pleasant information behavior that supports the everyday interactions and information exchanges that drive human relationships via an interplay of information needs, affect, cognition, and communication variables. Implications for these findings, limitations of this study, and recommendations for future research are presented below.

STUDY IMPLICATIONS

This study has several theoretical implications. Perhaps the most obvious of these implications is a reaffirmation of the existence of on online behavior that Rioux's (2000) characterizes as SIFFOW (*S*haring *I*nformation *F*ound *F*or *O*thers on the *W*eb). The findings of this study also expands SIFFOW by providing deeper insights into the process variables SIFFOW originally identified.

This study also gives legitimacy to the notion of information acquisition, a broadened conceptualization of information behavior that goes beyond the more specific information seeking, searching and retrieval ideas. The findings of this study confirm that the process of information acquisition can be active, directed, and purposeful as well as passive, non-directed and non-specific.

Insights into the motivations for IA&S behaviors also have implications for other theories dealing with how information needs motivate information behavior. This study shows that everyday information needs do trigger information behavior (supporting Allen, 1996; Dervin & Nilan, 1986; Large et al., 1999) and that these needs can be object-based (e.g., consumer products or movie listings) or based in affection (e.g., the need to satisfy curiosity or the need to make an exchange with a loved one).

Findings in this study about the primacy of affect in information behavior has implications for current theories dealing with how people feel as they interact with information and information environments. In particular, it strengthens Kuhlthau's (1991) information seeking process model, which suggests that users' affective states influence their information behavior and associated cognitive processes.

Results dealing with the cognitive processes inherent in IA&S in Internet-based environments adds another dimension to researches on the cognitive aspects of information behavior. In particular, the creation of potential memory through conversational exchanges about everyday needs and interests (an idea presented in this study) expands Dervin's (1983) sensemaking work, in which she asserts that communicating with others to articulate information "gap" situations helps construct personal meanings and ways to overcome the information gap. The notion of a conversation-seeded potential memory also supports Wilson's (1994) suggestion that individuals construct their own "world" by learning (via communication) about the

socially constructed cognitive structures (e.g., information systems) that other people they know have created.

In the largest sense, the grounded theory statements presented here contribute to general models of information behavior, in particular Wilson's (1999, p. 251) in which he indicates that

> …part of the information seeking process may involve other people through information exchange, and that information perceived as useful may be passed to other people, as well as being used (or instead of being used) by the person himself or herself.

From a practice standpoint, the findings presented in this study have implications for distributed workgroup managers, software engineers, e-commerce and not-for-profit Web masters, distance learning programmers, librarians, etc., who seek to better understand how information in acquired-and-shared in order to leverage and improve Internet-based information systems. For example, Marshall & Bly (in press) note that to date, digital libraries have not been conceived as a venue for information acquiring-and-sharing. They suggest that adding this element to digital libraries will increase their perceived value, and make them more a part of everyday life.

Rich elements of everyday life, everyday communication events, everyday practices and everyday need genres permeate the findings of this study, thus broadening the conceptualization of "context" as it is applied to information behavior. This is particularly true of the emergent "life role" concept, which describes how users' information sharing behaviors are motivated by personal and environmental contextual factors that are dependent on the individual's mix of life roles (e.g. parent, employee, cat owner, diabetic, accountant, etc.). These findings contribute to what Pettigrew et al.

(2001) say is an emerging body of theory that emphasizes the contextual interplays of cognitive, social, cultural, organization, affective and linguistic factors of information behavior.

Finally, this study has implications for the use of grounded theory research methods within LIS scholarship. The researcher's successful use of a triangulated, exploratory research design may guide and spark interest among other researchers in the field for using these qualitative methods. Hopefully this will contribute to the richness of the growing body of information behavior theory.

STUDY LIMITATIONS

Although this study offers useful theory and guides for practice, it does have limitations. First, it should be noted that the exploratory grounded theory methodology in this study is designed to produce findings that give in-depth insight into a particular phenomenon that is observable in a particular context. Grounded theory is not a basis for generalizable explanations.

Furthermore, participants in this study were graduate students in a library and information studies master's program. Although the unit of analysis in this study was primarily the *individual*, some of the information behaviors reported in this study may be unique to this population segment, which by its nature is very attuned to information issues.

This study also relied on self-reporting. The researcher could not actually observe IA&S behaviors as they occurred in Internet-based environments, a situation that may allow for under-analysis of this behavior. Additionally, mental entities and cognitive

processes are not directly observable, so this study may be limited to the extent that the resultant theory depends on these variables.

SUGGESTIONS FOR FUTURE RESEARCH

This study presents a theory that identifies, describes and explains IA&S behaviors. This theory is based on a research methodology that collected data from graduate student participants. With the culmination of this study, the springboard is now in place for this theory to be tested among other groups such as teachers, scientists, expectant mothers, children, academics, etc.

Another area of inquiry to emerge from this study is one that examines individual differences. Given the intriguing findings about cognitive processes presented in this study, exploring individuals' cognitive differences would be an especially valuable effort. Nahl's (2001) Affective Load Theory (ALT) asserts that information behaviors with a socio-cultural element (such as IA&S) are driven by learned affective states that in turn drive cognitive activity. Because IA&S behavior contains social, affective and cognitive elements, ALT may provide a productive framework for further explorations.

Finally, it may be useful to look at this phenomenon from the perspective of the receiver and from the perspective of the relationships and communication channels between senders and receivers. Among the possible questions: Does the receiver know how the sender acquired the shared information? In what instances does the receiver actually use the information that he/she has received? Can IA&S in Internet-based environments be considered a type of information use?

These questions and other social implications of this may be gainfully explored using the Social Network Analysis approach as described by Wellman & Berkowitz (2003). Social Network Analysis focuses on patterns of relationship that occur as individuals and groups interact socially, work collaboratively, and exchange information

and innovations—an approach that elegantly builds on the grounded theory of IA&S presented here.

SUMMARY

This study examined the behaviors, processes, motivations, and corresponding cognitive and affective states associated with information acquiring-and-sharing (IA&S) in Internet-based environments. Grounded theory statements that identify, describe and explain aspects of this phenomenon are presented. These concepts offer new ways in which to explore various aspects of information behavior, thus expanding current theory. They also provide insight to user behavior for information practitioners. IA&S in Internet-based environments as conceptualized in this study has the potential to be a rich research stream; it is worthy of additional exploration.

Appendix A: Screening/Demographic Questionnaire[4]

Question 1

Over the course of our daily lives, we use various kinds of information for work, school, and personal projects, and to be entertained. We get this information from a variety of media sources such as newspapers, magazines, books, TV, radio, the Internet, etc.

People that we know can also be sources of information. Do you ever experience a situation in which somebody you know (e.g., family, friends, co-workers) finds a piece of information that THEY think may be of interest to YOU, and then WITHOUT YOU ASKING, shares that information with you in some way?

(Please check one, and feel free to comment.)

☐ [1]Yes

☐ [2]No **==========➔PLEASE SKIP TO QUESTION 3**

Comment:

[4] The superscript notations listed in the closed-ended questions of this Questionnaire were used to aid in coding.

Question 2

How do these people who "find-and-share" TYPICALLY get the information to you?

(Please check ALL THAT APPLY, and/or list other sharing methods.)

- ☐ [a]via email
- ☐ [b]via telephone
- ☐ [c]via an item (e.g., newspaper clipping, photocopied article, letter, etc.) sent via the U.S. Postal Service
- ☐ [d]via a face-to-face conversation
- ☐ [e]Other sharing methods:

Question 3

Think again about the variety of sources that can provide you with information for work, school, personal projects and entertainment. These can include newspapers, magazines, books, TV, radio, email, the Internet, company intranets, and communicating with family, friends, and colleagues.

While interacting with these information sources, do you even experience a situation where:

1) YOU find a piece of information that you believe is of use to SOMEONE YOU KNOW

AND

2) YOU share that information in some way?

(Please check one, and feel free to comment.)

☐ [1]Yes

☐ [2]No **========➔PLEASE SKIP TO QUESTION 7**

Comment:

Question 4

About how often do you find a piece of information that you believe may be of interest (i.e., useful or entertaining) to somebody you know, and then you share it with him or her in some way (i.e., "find-and-share" information).

(Please check a box to answer, and feel free to comment.)

- ☐ [1]Never/Rarely
- ☐ [2]Less than once per week
- ☐ [3]One to two times per week
- ☐ [4]Three-to-five times per week
- ☐ [5]One to two times per day
- ☐ [6]Three-to-five times per day
- ☐ [7]Other/Comment:

Question 5

What methods do you use to share this information that you have found?

(Please check ALL THAT APPLY, and/or list other sharing methods that you use. Feel free to comment.)

- ☐ [a]via email
- ☐ [b]via telephone
- ☐ [c]via an item (e.g., newspaper clipping, photocopied article, letter, etc.) sent via the U.S. Postal Service
- ☐ [d]via a face-to-face conversation
- ☐ [e]Other:

Question 6

Where do you *typically* get the information that you pass on to others when you "find-and-share"?

(Please rank the TOP THREE sources by indicating 1, 2 or 3 in the space provided, with 1 being the most typical source, 2 being the second most typical source and 3 being the third most typical source. Feel free list other information sources and to comment.)

_____[a] TV

_____[b] Radio

_____[c] Newspaper

_____[d] Magazines

_____[e] World Wide Web

_____[f] Email

_____[g] Listservs or other electronic mailing lists

_____[h] Conversations with friends, family, co-workers

_____[i] Other/Comment:

Question 7

Indicate the amount of time you typically use **Internet sources** such as the Web, email, intranets, and online databases for work, school, personal projects and entertainment.

(Please check ONE.)

- ☐ [1]Less than one hour per day
- ☐ [2]About one hour per day
- ☐ [3]Between two and four hours per day
- ☐ [4]Five or more hours per day

Question 8

In order to better understand your answers to this survey, I would like for you to describe yourself a little bit.

Below are example descriptions of some life roles.

Example A	Example B	Example C
a. Sales Consultant b. Business graduate student c. Mother d. Gardener e. Swim instructor	a. Fine arts undergraduate student b. Technician c. President of the Computer Game Club d. Friend e. Brother	a. University staff member b. Father c. Husband d. Planning Committee member e. Dog owner

In the spaces below, please list up to five of YOUR OWN primary occupational, recreational, and life roles. Include job titles, hobbies, volunteer activities, relationships, etc., that best describe you. You may have many roles, but please list the five that you think really "make you what you are."

a. _____

b. _____

c. _____

d. _____

e. _____

Thank you very much for your participation!

The results of this survey will be very valuable in helping us to better understand how information is shared. I hope you have found participation in this survey to be interesting.

In the next phases of my research, I will be talking with people to ask them some more questions about information sharing. You may be a good person to talk to.

If you would be willing to participate in this follow-up research, please indicate your name and email address in the spaces below.

Name:_____

Email:_____

If you have any questions or comments, please feel free to contact me.

Kevin Rioux, MA, MLIS
Instructor
Department of Library and Information Studies
Generic University
Anytown, US 54321

505-555-6666

ksrioux@abcd.edu

Appendix B: Semi-Structured Interview Guide

Researcher Introduction	Hello! Thanks for agreeing to participate further in this study! I'm interested in talking with you because you indicated on a survey you find and share information for other people in Internet-based environments such as the Web, listservs, and other sources. I'm going to be taping our conversation so I can really listen to what you have to say, and so I have a good record of our talk. The tape will remain confidential, and your answers will be grouped with other people's answers in the analysis. Is this acceptable to you? OK, let's begin!
Initializing Question	Again, you indicated on a survey that you find information for other people in Internet based sources and then you share this information in some ways. For the purposes of our conversation, we can shorten this term to "finding-and-sharing." Tell me how this process works for you.
Discussion (Question sequence, language used and exact question formulation will vary among respondents, as is typical in grounded theory interviewing. Other relevant questions may emerge during interviews.)	(Addressing primary Research Question 1: What are the behaviors and processes associated with information acquiring-and-sharing in Internet-based environments?) • Describe the process that you go through when you share information that you think may be of use to someone you know. • How long have you been doing this? (Discuss) • What kinds of information are you likely to share with others? • Is there any kind of information that you are not likely to share in an electronic environment? • With whom are you likely to share information? Why these people? • Are you more likely to share information that you believe is of interest to BOTH you an someone else? Or, are you more likely to share information that you think is mostly of interest

	to someone else? • Did you find-and-share before the Internet was widely adopted? In what ways? Do you think you share more now? If so why? If not, why not? • Now that you are an Internet user, do you think you share mostly via the Internet, or do you use other methods that you used before the Internet was popular? • Let's go back to the process that you go through when you "find-and-share": o While accessing various information sources, do you ever find a piece of information that you believe is BOTH ▪ Useful to you AND ▪ Is information that may be useful to someone you know? ▪ Do you share this information with other people in some way? ▪ If so, how do you usually share this information? o Think again about the variety of information sources available that you can access to search for information for work, school, personal projects and entertainment. This can include newspapers, magazines, books, TV, radio, the Internet, intranets, email, and talking with family, friends, and colleagues. ▪ While searching these information sources, do you ever experience a situation where • You find a piece of information that is useful to you AND • During the same search, you find a DIFFERENT piece of information that you believe is of use to someone you know? ▪ Do you share this information with other people in some way? ▪ If so, how do you usually share this information? o Once again, please think about the variety of information sources available that you can access to

	search for information for work, school, personal projects and entertainment. ▪ While accessing these information sources, do you ever experience a situation where • You DO NOT find information that is useful to YOU, but • You DO find information that you believe is useful to SOMEONE YOU KNOW. ▪ Do you share this information with other people in some way? ▪ If so, how do you usually share this information? (Addressing primary Research Question 2: What are the motivators and corresponding affective and cognitive states associated with information acquiring-and-sharing in Internet-based environments?) • Describe to me what happens in your mind when you find something that you think may be of use to someone you know. • How do you feel when you find something that you think may be of use to someone you know? • Why do you share information? • How does finding-and-sharing make you feel? • Why do you share information via the Internet rather than telling others about it in person or on the phone or by other means?

Appendix C: Critical Incident Log

As we discussed in the interviews, I am interested in how people find information for other people in Internet environments, and then share that information. For the next two weeks, please fill out one of these critical incident log sheets each time you find-and-share information on the Internet.

If your message is not overly personal, please email a copy to ksrioux@abcd.edu.

Thanks again for participating, and don't forget to answer the questions below.

Your name:_____. Today's Date:_____

Describe how you acquired what you've decided to share this time
Briefly describe what you're sharing this time
How will you share this information (e.g., email, AOL Internet Messenger, in-person etc.)?
What thoughts and feelings did you experience when you found-and-shared information this time?

Appendix D: Data Code Book[5]

Q.S.R. NUD*IST Power version, revision 4.0.
Licensee: ABCD Univ.

PROJECT: A_and_S_Project, User Kevin Rioux, 2:21 pm, Apr 14, 2003.

(1)	/Gender
(1 1)	/Gender/Male
(1 2)	/Gender/Female
(2)	/Actor Characteristics
(2 1)	/Actor Characteristics/Preferences
(2 1 1)	/Actor Characteristics/Preferences/preferring Internet sharing methods to other methods
(2 1 1 2)	/Actor Characteristics/Preferences/preferring Internet sharing methods to other methods/internet messenger
(2 1 2)	/Actor Characteristics/Preferences/expediency
(2 1 3)	/Actor Characteristics/Preferences/ease of Internet facilitates more A&S
(2 1 4)	/Actor Characteristics/Preferences/quickness or ease of process
(2 1 5)	/Actor Characteristics/Preferences/free or low cost
(2 1 6)	/Actor Characteristics/Preferences/can communicate better via email
(2 1 7)	/Actor Characteristics/Preferences/using dial-up modem
(2 1 8)	/Actor Characteristics/Preferences/asynchronous communication
(2 1 9)	/Actor Characteristics/Preferences/when the phone is chosen or preferred
(2 1 10)	/Actor Characteristics/Preferences/post A&S info to Blackboard
(2 1 11)	/Actor Characteristics/Preferences/sometimes prefer phone or face to face
(2 2)	/Actor Characteristics/Habituated A&S
(2 2 1)	/Actor Characteristics/Habituated A&S/in Internet environments
(2 2 2)	/Actor Characteristics/Habituated A&S/in general environments
(2 3)	/Actor Characteristics/Share more via Internet methods
(2 4)	/Actor Characteristics/Perceptions of A&S behavior
(2 4 1)	/Actor Characteristics/Perceptions of A&S behavior/characterization "send"
(2 4 2)	/Actor Characteristics/Perceptions of A&S behavior/run across something or come across something
(2 4 3)	/Actor Characteristics/Perceptions of A&S behavior/serendipity
(2 4 4)	/Actor Characteristics/Perceptions of A&S behavior/quickness-ease of process

[5] Text within quotations are *in vivo* terms.

(2 4 5)	/Actor Characteristics/Perceptions of A&S behavior/keeping in touch
(2 4 6)	/Actor Characteristics/Perceptions of A&S behavior/maintaining a friendship
(2 4 7)	/Actor Characteristics/Perceptions of A&S behavior/"catches your eye"
(2 4 8)	/Actor Characteristics/Perceptions of A&S behavior/characterization "letter writing"
(2 4 9)	/Actor Characteristics/Perceptions of A&S behavior/"finding things"
(2 4 10)	/Actor Characteristics/Perceptions of A&S behavior/habit
(2 4 11)	/Actor Characteristics/Perceptions of A&S behavior/"share it"
(2 4 12)	/Actor Characteristics/Perceptions of A&S behavior/connecting to learning new things: curiosity
(2 4 13)	/Actor Characteristics/Perceptions of A&S behavior/"get it by however"
(2 4 14)	/Actor Characteristics/Perceptions of A&S behavior/"pass it on some way, shape or form"
(2 4 15)	/Actor Characteristics/Perceptions of A&S behavior/perceive themselves as "helpful"
(2 4 16)	/Actor Characteristics/Perceptions of A&S behavior/"pass on"
(2 4 17)	/Actor Characteristics/Perceptions of A&S behavior/impulsive behavior
(2 4 18)	/Actor Characteristics/Perceptions of A&S behavior/"natural part of me"
(2 4 19)	/Actor Characteristics/Perceptions of A&S behavior/"share and share alike"
(2 4 20)	/Actor Characteristics/Perceptions of A&S behavior/"just something I do"
(2 4 21)	/Actor Characteristics/Perceptions of A&S behavior/part of my personality
(2 4 22)	/Actor Characteristics/Perceptions of A&S behavior/"it's a speed bump, not a detour"
(2 4 25)	/Actor Characteristics/Perceptions of A&S behavior/"information junkie"
(2 4 26)	/Actor Characteristics/Perceptions of A&S behavior/"letting people know"
(2 4 27)	/Actor Characteristics/Perceptions of A&S behavior/"who I am as a person"
(2 4 30)	/Actor Characteristics/Perceptions of A&S behavior/"happenstance"
(2 5)	/Actor Characteristics/Personal Lifestyle-Environment factors
(2 6)	/Actor Characteristics/perception of gender differences
(3)	/Recipient Characteristics
(3 1)	/Recipient Characteristics/Recipients
(3 1 1)	/Recipient Characteristics/Recipients/family

(3 1 2)	/Recipient Characteristics/Recipients/friends
(3 1 3)	/Recipient Characteristics/Recipients/sharing information with acquaintances
(3 1 4)	/Recipient Characteristics/Recipients/closeness-familiarity with recipient
(3 1 5)	/Recipient Characteristics/Recipients/use of message board
(3 1 6)	/Recipient Characteristics/Recipients/colleagues
(3 1 7)	/Recipient Characteristics/Recipients/"social peers"
(3 1 8)	/Recipient Characteristics/Recipients/"social network"
(3 1 9)	/Recipient Characteristics/Recipients/"my network"
(3 2)	/Recipient Characteristics/Why share via Internet based methods?
(3 2 1)	/Recipient Characteristics/Why share via Internet based methods?/recipient characteristics
(3 2 1 1)	/Recipient Characteristics/Why share via Internet based methods?/recipient characteristics/email preferences
(3 2 1 2)	/Recipient Characteristics/Why share via Internet based methods?/recipient characteristics/email access
(3 2 1 3)	/Recipient Characteristics/Why share via Internet based methods?/recipient characteristics/recipient expects this kind of comm method
(3 2 2)	/Recipient Characteristics/Why share via Internet based methods?/easy
(3 3)	/Recipient Characteristics/number of recipients you A&S with
(3 4)	/Recipient Characteristics/people who share interests with me
(4)	/Affective States
(4 1)	/Affective States/enjoyment of engaging in conversation
(4 2)	/Affective States/enjoyment of exploring ideas
(4 3)	/Affective States/facilitates learning for both sender and recipient
(4 4)	/Affective States/beneficial to both sender and receiver
(4 5)	/Affective States/"selfishness"
(4 6)	/Affective States/self consciousness
(4 7)	/Affective States/good feeling
(4 8)	/Affective States/Helping feeling
(4 9)	/Affective States/feel organized
(4 10)	/Affective States/feel a person can use it
(4 11)	/Affective States/feeling about recipient
(4 12)	/Affective States/"worthwhile information"
(4 13)	/Affective States/feelings for recipient
(4 14)	/Affective States/excited
(4 15)	/Affective States/like solving a puzzle
(4 16)	/Affective States/satisfying
(4 17)	/Affective States/"enrich recipients' world"
(4 18)	/Affective States/"love it"

(4 25)	/Affective States/“don’t know if it feels like anything”
(4 26)	/Affective States/“feel it is worthwhile”
(4 28)	/Affective States/to share the same feeling that you have
(4 29)	/Affective States/“connected”
(4 35)	/Affective States/response to guilt--to compensate for perceived lack of conversation
(4 36)	/Affective States/enjoy learning new things
(4 37)	/Affective States/feel successful
(5)	/Type of Information A&S’ed
(5 1)	/Type of Information A&S’ed/novelty
(5 2)	/Type of Information A&S’ed/music
(5 3)	/Type of Information A&S’ed/poetry
(5 4)	/Type of Information A&S’ed/religion
(5 5)	/Type of Information A&S’ed/politics
(5 6)	/Type of Information A&S’ed/librarianship
(5 7)	/Type of Information A&S’ed/creative content
(5 8)	/Type of Information A&S’ed/art
(5 9)	/Type of Information A&S’ed/academics
(5 10)	/Type of Information A&S’ed/ideas
(5 10 1)	/Type of Information A&S’ed/ideas/wanting to talk about ideas
(5 10 2)	/Type of Information A&S’ed/ideas/wanting to share ideas
(5 11)	/Type of Information A&S’ed/“reputable context”
(5 12)	/Type of Information A&S’ed/things you think they may be interested in
(5 13)	/Type of Information A&S’ed/info that is “interesting”
(5 14)	/Type of Information A&S’ed/articles
(5 15)	/Type of Information A&S’ed/news
(5 16)	/Type of Information A&S’ed/unusual or unique
(5 17)	/Type of Information A&S’ed/work related information
(5 18)	/Type of Information A&S’ed/“something really good”
(5 19)	/Type of Information A&S’ed/extra material found during an imposed search
(5 20)	/Type of Information A&S’ed/sports
(5 22)	/Type of Information A&S’ed/consumer information
(5 23)	/Type of Information A&S’ed/money savers, time savers
(5 25)	/Type of Information A&S’ed/“helpful”
(5 27)	/Type of Information A&S’ed/“anything I come across if I think someone will like it”
(5 28)	/Type of Information A&S’ed/entertainment
(5 29)	/Type of Information A&S’ed/hobby
(5 30)	/Type of Information A&S’ed/“useful”
(5 31)	/Type of Information A&S’ed/tax information
(5 33)	/Type of Information A&S’ed/health

(5 34)	/Type of Information A&S'ed/recipes
(5 35)	/Type of Information A&S'ed/imagining yourself in someone else's shoes- their info needs
(5 36)	/Type of Information A&S'ed/email alerts
(5 37)	/Type of Information A&S'ed/sender has to like it
(5 38)	/Type of Information A&S'ed/employment info
(5 40)	/Type of Information A&S'ed/hairstyle sites
(5 41)	/Type of Information A&S'ed/depends on the recipient
(5 45)	/Type of Information A&S'ed/"trivial knowlege"
(5 46)	/Type of Information A&S'ed/info that "has some merit"
(5 50)	/Type of Information A&S'ed/info not expressly went to find
(5 51)	/Type of Information A&S'ed/"something of note"
(6)	/Type of information NOT A&S'ed
(6 1)	/Type of information NOT A&S'ed/"forwards" noun
(7)	/cognition
(7 1)	/cognition/trigger
(7 1 1)	/cognition/trigger/"jolted"
(7 2)	/cognition/connecting info to people
(7 2 1)	/cognition/connecting info to people/connecting via emotion toward recipient
(7 2 3)	/cognition/connecting info to people/"in the back of my mind"
(7 2 4)	/cognition/connecting info to people/"it's what they're into"
(7 2 5)	/cognition/connecting info to people/visualize names
(7 2 6)	/cognition/connecting info to people/a relationship threshold before A&S starts
(7 2 7)	/cognition/connecting info to people/"it's all in my head"
(7 2 9)	/cognition/connecting info to people/connected to something you care about
(7 2 10)	/cognition/connecting info to people/know someone's humor
(7 3)	/cognition/memory
(7 3 1)	/cognition/memory/enhanced via conversation
(7 3 2)	/cognition/memory/experience with recipient
(7 3 3)	/cognition/memory/ "I want to remember their interests"
(7 3 4)	/cognition/memory/a "visceral" connection with recipient
(7 4)	/cognition/thinking of others: low level
(7 5)	/cognition/mentally managing the information
(7 6)	/cognition/"marker"
(7 7)	/cognition/need to belong
(7 8)	/cognition/general cognitive process
(7 9)	/cognition/"not in a conscious way"
(7 10)	/cognition/cognitive process is very quick
(7 11)	/cognition/expanding and narrowing focus
(7 12)	/cognition/"jumps out at me"

(7 13)	/cognition/classifying recipients into groups
(7 14)	/cognition/“it just comes”
(7 15)	/cognition/mental rolodex model
(7 15 1)	/cognition/mental rolodex model/envision list of names
(7 16)	/cognition/“click in my head” that would connect”
(7 17)	/cognition/“strike”
(7 18)	/cognition/“delayed response”
(7 19)	/cognition/“associations”
(7 21)	/cognition/voice in the head
(7 22)	/cognition/“people are just there”
(7 23)	/cognition/others are “part of who I am”
(7 24)	/cognition/“a little side path”
(7 25)	/cognition/“don’t even think of it”
(7 33)	/cognition/“instant synapses”
(7 34)	/cognition/“instant connection”
(7 35)	/cognition/visualize faces
(7 36)	/cognition/just me knowing a person
(7 37)	/cognition/mixture of name and face
(7 38)	/cognition/“file news information in my head”
(7 39)	/cognition/find something interesting then think about someone else who might find it interesting
(7 40)	/cognition/something “pops up”
(7 41)	/cognition/connect with faces
(7 50)	/cognition/person triggers information rather than info triggering person
(8)	/Motivations for Acquiring-and-Sharing in Internet-based Environments
(8 1)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/develop relationships with colleages
(8 2)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/make new friends
(8 3)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/communicate about seemingly common interests
(8 4)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/competition or status
(8 5)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/“keeping in touch”
(8 6)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/conversation-start a conversation
(8 7)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/get a response-see what they think
(8 8)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/characterization: part of maintaining a friendship or

	other relationship
(8 8 1)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/characterization: part of maintaining a friendship or other relationship/"show that you care"
(8 9)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/communicating with family and friends is important
(8 10)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/welcome sharing
(8 11)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/benefits for sender and receiver
(8 12)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/Fun
(8 13)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/alternative means of communication
(8 14)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/show others you are thinking of them
(8 15)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/different reasons for different people
(8 16)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/persuade someone else to be interested in something
(8 17)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/like to feel organized
(8 18)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/recipient uses information
(8 19)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/just like to shrae
(8 21)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/something that will further their knowledge
(8 22)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/appalachain folklore
(8 23)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/helping others with information overload
(8 25)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/reciprocation
(8 27)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/feel like you belong
(8 29)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/provoke recipient
(8 30)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/just want to send the info: "hi" is secondary
(8 31)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/feel you are doing a good deed
(8 32)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/fills a social need

(8 33)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/save recipients' time
(8 35)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/enhanced greeting with bonus information
(8 36)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/"caretaker role"
(8 38)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/to be nice
(8 39)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/to share the same feelings that you have
(8 40)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/help others
(8 41)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/appreciation from recipients
(8 42)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/"make recipient smile"
(8 43)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/"an extra connection"
(8 44)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/continue a conversation
(8 45)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/develop a type of service constituency
(8 46)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/promote an agenda
(8 48)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/thanks from recipient
(8 50)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/"people need it"
(8 60)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/sharing as an intellectual exercise
(8 65)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/my turn to chat back
(8 71)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/being thanked
(8 72)	/Motivations for Acquiring-and-Sharing in Internet-based Environments/keep my network going
(9)	/Process of Acquiring-and-Sharing
(9 1)	/Process of Acquiring-and-Sharing/choosing recipients
(9 2)	/Process of Acquiring-and-Sharing/general process
(9 3)	/Process of Acquiring-and-Sharing/tailoring InBE for recipient
(9 4)	/Process of Acquiring-and-Sharing/contextualizing/personalizing
(9 4 1)	/Process of Acquiring-and-Sharing/contextualizing/personalizing/adding personal note

(9 5)	/Process of Acquiring-and-Sharing/acquiring via Internet, sharing via other methods
(9 6)	/Process of Acquiring-and-Sharing/technical aspects of process
(9 6 1)	/Process of Acquiring-and-Sharing/technical aspects of process/put on desktop before sharing
(9 6 2)	/Process of Acquiring-and-Sharing/technical aspects of process/saving a copy for oneself
(9 7)	/Process of Acquiring-and-Sharing/Evaluation
(9 7 1)	/Process of Acquiring-and-Sharing/Evaluation/Content
(9 7 1 1)	/Process of Acquiring-and-Sharing/Evaluation/Content/evaluating content
(9 7 1 1 1)	/Process of Acquiring-and-Sharing/Evaluation/Content/evaluating content/thresholds of quality
(9 7 1 1 1 1)	/Process of Acquiring-and-Sharing/Evaluation/Content/evaluating content/thresholds of quality/junk
(9 7 1 1 1 1 5)	/Process of Acquiring-and-Sharing/Evaluation/Content/evaluating content/thresholds of quality/junk/top-10 lists
(9 7 1 2)	/Process of Acquiring-and-Sharing/Evaluation/Content/eval of listserv messages
(9 7 2)	/Process of Acquiring-and-Sharing/Evaluation/consider the recipient
(9 7 3)	/Process of Acquiring-and-Sharing/Evaluation/management of acquired information
(9 7 10)	/Process of Acquiring-and-Sharing/Evaluation/evaluate twice
(9 8)	/Process of Acquiring-and-Sharing/Instantiation Type
(9 8 1)	/Process of Acquiring-and-Sharing/Instantiation Type/sender not interested
(9 8 1 1)	/Process of Acquiring-and-Sharing/Instantiation Type/sender not interested/“liking the recipient enough” to A&S
(9 8 1 2)	/Process of Acquiring-and-Sharing/Instantiation Type/sender not interested/“care about it by extension”
(9 8 2)	/Process of Acquiring-and-Sharing/Instantiation Type/both sender and recipient interested
(9 8 3)	/Process of Acquiring-and-Sharing/Instantiation Type/something for sender, something different for recipient
(9 8 4)	/Process of Acquiring-and-Sharing/Instantiation Type/nothing for sender, something for recipient
(9 9)	/Process of Acquiring-and-Sharing/Browsing
(9 10)	/Process of Acquiring-and-Sharing/“cut and save”
(9 11)	/Process of Acquiring-and-Sharing/“it finds me”
(9 12)	/Process of Acquiring-and-Sharing/both email and call recipient
(9 13)	/Process of Acquiring-and-Sharing/“networks” of sharers
(9 15)	/Process of Acquiring-and-Sharing/a by-product of habitualized routine

(35)	/Sources of information that is A&S-ed
(D)	//Document Annotations
(F)	//Free Nodes
(F 10)	//Free Nodes/curiosity
(F 11)	//Free Nodes/field depedent-independent
(F 16)	//Free Nodes/“you know”
(F 20)	//Free Nodes/“just kind of comes across”
(F 24)	//Free Nodes/distinctions between being interested and not being interested
(F 27)	//Free Nodes/A&S info as proxy for other message
(F 28)	//Free Nodes/bonus material attached to regular communication
(F 36)	//Free Nodes/A&S as a means of communication
(F 37)	//Free Nodes/Exchanges of A&S information and reciprocation
(F 40)	//Free Nodes/occasionally receives A&S info
(F 60)	//Free Nodes/Information Encountering
(F 65)	//Free Nodes/Modelling A&S and suggesting terminology
(F 66)	//Free Nodes/purposeful seeking
(F 67)	//Free Nodes/sender is also a recipient of info from others who A&S
(F 68)	//Free Nodes/email is less personal
(F 70)	//Free Nodes/imposed search
(F 71)	//Free Nodes/modelling the difference between imposed search and A&S
(F 80)	//Free Nodes/Workplace context
(F 85)	//Free Nodes/physical proximity reduces A&S via email
(F 86)	//Free Nodes/part of a daily routine
(F 89)	//Free Nodes/“conditioned” to A&S
(F 90)	//Free Nodes/acknowledge this process and “plant seeds” at work (imposed)
(F 92)	//Free Nodes/listservs as a source
(F 95)	//Free Nodes/collaborative work context
(F 100)	//Free Nodes/reading widely
(F 105)	//Free Nodes/interest sparked by email
(F 106)	//Free Nodes/passing on to others who are perceived to be good disseminators of information
(F 107)	//Free Nodes/family pattern
(F 108)	//Free Nodes/perceived introversion-reticent--faciliates more communication
(F 110)	//Free Nodes/browsing
(F 111)	//Free Nodes/restating-paraphrasing process
(F 121)	//Free Nodes/community of sharers
(F 130)	//Free Nodes/successful search may encourage more browsing
(T)	//Text Searches
(I)	//Index Searches

(C)	//Node Clipboard - ‘Browsing’

Appendix E: Sample NU*DIST Code Report

```
Q.S.R. NUD*IST Power version, revision 4.0.
Licensee: UNC Greensboro.

PROJECT: A_and_S_Project, User Kevin Rioux, 1:37 pm, May 12, 2003.

******************************************************************************
(2 1 4)                 /Actor Characteristics/Preferences/quickness or ease of process
*** No Definition
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: 091702_phaseII_
+++ Retrieval for this document: 4 units out of 547, = 0.73%
++ Text units 538-541:
[So you—sometimes it might be open, but there's always a window              538
open.] Right. [So it's no big deal just to type Yahoo.com and then           539
click on the--] Right, it's seconds.                                         540
[Great. Anything else?] That's it. [Well, thank you so much.]                541
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: 100202_phaseII_
+++ Retrieval for this document: 7 units out of 419, = 1.7%
++ Text units 328-334:
internet just kind of came with it, but—that's the way they told me, but     328
you know. So it's—but it's easier—it's also easier for me, it's more         329
convenient than—I also, if I try to call my mom, if I call my mom at         330
work, I may get her voice mail instead of actually talking to her, and I     331
really don't want to leave something like this on her voice mail. So I       332
can just send her an email and she can get it whenever she can, whenever     333
she's at her desk.                                                           334
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: 101402_phaseII_
+++ Retrieval for this document: 10 units out of 440, = 2.3%
++ Text units 192-201:
get this to them counts.[Okay, so] Yeah.                                     192
[So you say-you said the word impulsive, so the web is so much quicker.]
Right,                                                                       193
and I think it caters to that-to that need to want to do things quick and
to want                                                                      194
to get it off quick. [Okay. Yeah, interesting. Okay. And do you think you
share                                                                        195
more now?] Yes.                                                              196
[Okay. And it's because of that convenience factor. Yeah, okay. And you
touched on                                                                   197
this too but let's just go ahead and get it out there. Now that you are
an                                                                           198
internet user, do you think you share mostly via the internet or do you
use other                                                                    199
methods you used before the internet was popular?] I still use both but
probably                                                                     200
the majority of the information I pass on is through the internet.           201
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: 102202_phaseII_
+++ Retrieval for this document: 6 units out of 289, = 2.1%
++ Text units 21-22:
[Why would you decide to email over bringing them the copy?] Just would
be faster                                                                     21
and easier and less expensive. [Okay.] As long as I you know-if I have
their                                                                         22
++ Text units 99-102:
[Okay, okay. Do you think you share more now than you did before the
internet was                                                                  99
```

widely adopted?] I would say so. [Yeah. How come?] Well especially with my 100
relatives in France because writing a letter and having to take it to the post 101
office, etcetera, it's just so convenient. [Yeah, yeah, that's exciting. So where 102
++
+++ ON-LINE DOCUMENT: 102402_phaseII_
+++ Retrieval for this document: 4 units out of 390, = 1.0%
++ Text units 86-89:
envelope, so. Yes, it happens to me but I don't really do it anymore. [Okay. And 86
because--] Why bother? It's just too much work and ??? when I'd rather send it 87
instantly. [Right, it's so much-it's more convenient to do it] It's just easier, 88
yes. 89
++
+++ ON-LINE DOCUMENT: 103102_phaseII_
+++ Retrieval for this document: 4 units out of 514, = 0.78%
++ Text units 196-199:
internet message, is that also important?] Oh, yeah, because that's more 196
instantaneous, it takes a whole lot less time. We can't talk for less than an 197
hour. [Okay.] So if we want to just send each other something we send it. And 198
gotten it across or make that deadline or I know I can catch her at work, or 199
++
+++ ON-LINE DOCUMENT: 110402_phaseII_
+++ Retrieval for this document: 9 units out of 367, = 2.5%
++ Text units 197-205:
Do you think you share more now that you use the internet a lot?] I think so. 197
[Than you did before, like when you were just cutting things out of magazines and 198
things like that.] Just the ease of use [Okay.] is so much greater, you know, the 199
immediate reaction. I mean the fact of the matter is like I said I can be kind of 200
flighty, if I cut something out and put it in a notebook or put it in my handbag 201
or in my desk, chances are, you know, a quarter of the time it's not going to get 202
to the intended person, it's just going to hang out there. When I find it two 203
years later, what was this for? Oh, I was supposed to send it to so and so. You 204
know, that kind of thing. [But with email, it's quick and you know it's done.] 205
++
+++ ON-LINE DOCUMENT: 110702_phaseII_
+++ Retrieval for this document: 8 units out of 278, = 2.9%
++ Text units 79-86:
[Right. You indicated that you think you share more now, right, than you did 79
before the internet was more prevalent. Why do you think you share more now?] Just 80
because it's easier. It's just-everything's right at your fingers. [Do you think 81
you are exposed to more information?] Oh, I think so. I can find it a lot quicker. 82
If I have-you know, if I want it-if I read something in the news for example, and 83
I'm kind of interested in what's going on there I can just type it in a search 84

```
engine and read about it there, I don’t have to go to different sources,
so I                                                                    85
think it’s much quicker, it’s access to even more information.         86
++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: 110702_phaseII_
+++ Retrieval for this document: 21 units out of 380, = 5.5%
++ Text units 129-142:
haven’t really talked about is how long have you been doing this? Did you
do this                                                               129
before the internet was prevalent? Did you do a lot of tearing out of
magazines                                                             130
and newspapers?] I do like to talk about current events with coworkers
and always                                                            131
have, or you know, TV shows, did you watch ER last night, boy did you see
Hill                                                                  132
Street Blues? That goes back a little while. And I’ve always kind of
enjoyed kind                                                          133
of sharing that, sort of. If I saw a show and was really sort of wowed by
it I                                                                  134
like to say did you see that, wasn’t it great? That sort of thing, so I
mean if                                                               135
that’s what you’re sort of [Sure.] implying by that then              136
[But what about like tearing stuff out of a newspaper or about you know,
something                                                             137
that was going to be built next to somebody’s home, or something like
that, like]                                                           138
I might have thought about it or talked about it, but I didn’t do a whole
lot of                                                                139
clipping, I think it’s just something that’s developed. [Since you
started using                                                         140
the internet?] Yeah, probably, because it’s just so much easier, I
really, really                                                        141
like doing things that way.                                           142
++ Text units 334-340:
[What would make you decide to-what’s made-well, we talked about the ease
of use,                                                               334
you know, is there any other reason why you would share information that
you got                                                               335
online other than telling them about it in person or by phone or by other
means?]                                                               336
I think it’s-yeah, it’s so easy. And you can do it right then when you’re
thinking                                                              337
about it. If I had to [You can put it aside.] Yeah, I’m-swssh, it’s gone.
With me.                                                              338
Especially as I get older. Although of course we’ve talked about having
filing                                                                339
away that information, if I saw him again, oh, I was reading this cool
article,                                                              340
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++ Total number of text units retrieved = 73
+++ Retrievals in 9 out of 16 documents, = 56%.
+++ The documents with retrievals have a total of 3624 text units,
    so text units retrieved in these documents = 2.0%.
+++ All documents have a total of 6995 text units,
    so text units found in these documents = 1.0%.
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

Appendix F: Sample Interview Segment

[Is there any kind of environment—is there any—what kinds of information are you likely to share with others? You touched on a couple of things, but] Yeah. Excuse me. If I think it is something that will further their knowledge, it would be that sort of thing. I'm trying to think of a really good example. Appalachian Folklore is something that me and my husband and our friend Rob we really liked—we grew up in West Virginia ghost stories and folklore a huge part of growing up in West Virginia. And you know and of course as you've gotten older and you get more educated you want to learn more about that, you know, it's beyond just stories from when you grew up. So if I come across a newspaper article or a magazine article that might further explain a legend or something that we heard growing up I will cut and save that because it's going to help all of us go further in what we know.

[So this is—it's sort of like—what I'm hearing and correct me if I'm not saying it correctly, what I'm hearing is there's some cultural topics out there that you're interested in just learning more about and this is something that you've identified as a part of yourself and you enjoyed that as growing up and then it was just something that you want to build your knowledge about. And you had said something earlier about I want to help—I want to share things with people to increase their knowledge. Would you ever share stuff like this digital camera that you've been talking about is on sale for $50 off at this particular store. So you would do consumer items, too?] Yes, yes. Yeah. [So it isn't just knowledge things, it's] Yeah, it's just kind of an all around if I feel a person can use it in some way, shape, or form, I do try to pass it on it some way, shape, or form.

[Right. What about—what makes something useful? Do you think?] It saves them money? If it is a shortcut for them, if it saves them time, if it's something they have been looking for forever. I've come across that a lot it seems at work, teachers will remember songs that they sang growing up and can't remember the words and they want to share that with their class. I'm often able to go onto the web and find the words for them or something close to it and pass that on to them. It's just—it's ??? I've always liked it. I did it in college, I probably should have asked to be paid for it, but I didn't, but you know, people had papers due and didn't know how to use the library or how to use it more effectively and they would grab me during my off time so I was waiting for my class to start and we'd go to the library and I would find it for them, because I was good at that, I was just good at finding things. And

[Have you always been good at finding things, even before you were in college, or] I think so. I think so. It's just because I've always just been real determined and I just don't—you know, and being able to think around a topic and not just you know, there's only one way to find it and [Ooh, and maybe only one—you know, there's more than—would you also say that it's more than one way to use it, too?] Oh yeah, oh yeah. [I can use it in one way but somebody else I know can use it in another way.] Oh, yeah, that's the theory of Molliers.

[Okay. Is there any kind of information that you're not likely to share in an electronic environment?] If I think it is bogus or if I think it's something that's not true or not verified I get lots of this stupid urban legend emails and I just don't even pass those on. Unless I think it's funny and I think somebody would get a chuckle out of it, but for the most part, no, I—most of the mail, I'd say 75% of the email I get I delete, because it's just—it's stuff that—and especially from some friends who you know, every chain letter.

I'm on their list so I happen to get a copy of it because they're superstitious well there's an attraction for me, but.

[Is email a major source of things that you share with other people?] Yes, but not forwarding things, not forwarding things I get. Creating new emails and attaching things that you know, that I found on the web, that's more—I don't forward a lot of stuff that I get, I just don't. It's— [Any reason why, or] Well, unless it's just a really funny joke, I mean it's—it's just not—I don't want to waste anybody's time.

[Right. Okay. We've talked about this one already, but I just want to get the question out, with whom are you likely to share information and why these people?] Definitely my husband because I'm married to him, and you've got to, it's communication. My closest coworkers, not that I exclude anybody out of my school, I don't. Some people just don't approach me about anything, and I respect that, that's not—but probably more so with my closer coworkers. [Meaning your—meaning physically more closer, or more—or closer like friendships?] Closer emotionally. My family meaning my father and my brother I share and well, and my closest friends here in North Carolina. Rob and Page, there's kind of like a small circle of ???, and even they have ??? kind of a priority, you know, there's a few that are just kind of—it's not that they're more important, it's just that I'm more likely to share things with them. [How come?] Probably closer interests. [Okay.] I mean I like everybody, but I'm my own person and sometimes I don't fall into these—you know, the holes that people want to put you in. So—and because of that I just—I—those people who are more like me just more willing to accept you for who you are, no matter what I just tend to probably gravitate a little closer to them.

[Are you more likely to share information that you believe is of interest to both you and someone else? Or are you more likely to share information that you think is

mostly of interest to someone else?] I'd have to say more likely to share something that would interest both of us because then we could have a conversation about it, whether a physical conversation or, you know, emailing, playing email tag back and forth.

[Okay. Did you find and share before the internet was widely adopted?] Yeah, pretty much. [In what ways?] Cutting articles out of magazines, and mailing them to my grandmother, I can remember doing that. And she still does that to me, because she doesn't have email, but—and I'm—I still, I send picture more really than informational articles. But this something, you know, she's ninety-some years old, there's not much in this world that she hasn't seen or heard or done, and so there's not a whole lot that I really read about that I think that she'd really get a lot out of this article, but she still mails stuff to me, whether I like it or not.

[Do you think you share more now that the internet exists?] Yes. [How come?] Convenience. One word, convenience. It's so much easier just to tag that—you know, cut and paste or whatever and just move it on. [Cut and paste text into an email message, you mean?] Yeah, or if I—I only have one little thing that I want them to read, you know, if it would be a waste of time for them to search through, you know, huge information, yeah, I'll cut and paste and just stick it in the email and then they only have to open one thing, don't have to worry about getting on the web. But otherwise then I'll just put it as a—as a link and send it on, so.

[Do you ever put a little information in there saying hey, I thought you'd like this because of--] Yes, almost every time. I don't just forward anything blindly because I—I mean there's been a couple of times I've been sent things and I was like what in the world, why did they send this to me? A friend from high school he emailed me the Spiderman poster two or three times and I was like what an ??? with no tag on it or anything and finally I had to ask him I said why do you keep doing this, he was like oh,

well, you know it's my favorite—I thought you knew that was my favorite comic character. I was like no, I didn't know that. He goes I was just sharing that I was excited the movie was coming out. I was like okay. But so, because of that, it's just through m own experiences, I do, I put a tag and say you know remember when we were talking about this, well I found this about it and thought you might be interested.

[Okay, good. Now that you are an Internet user, do you think you share the—do you share mostly via the internet or do you use other methods that you used before the internet was popular?] I still—the majority of what I do is shared probably from the Internet.

[From the internet. But what about sharing via the internet?] Yeah, I would say that's more—done more now for me. But I haven't totally abandoned the old ways of it. It depends on the person, like I said my ninety year old grandmother does not have—she doesn't even own a computer and doesn't care to own one. So I have to use the old ways.

[And it sounds like you—you got your piles for each—for people that are in your life, and even though you've got—you know, the internet and it's convenient you haven't stopped doing that.] No. [But you use the internet more than you used to, or you—to share.] Yes, yeah, just because of the convenience.

[Okay. Let's go back to the process that you go through when you find and share. While accessing various information sources, do you ever find a piece of information that is both useful to you and is information that may be useful to someone you know and do you share this information in some way, and if so, how do you usually share this information? So it's kind of a compressing of all the questions.] Okay. Yes, there are times when what I come across is useful for both me and another person, whether it be about new tax laws or something like that. I mean that's obviously something that would affect both me and others and just recently been talking about retirement and I found out

there was an option that was open to me because schools are considered nonprofit and I didn't know this existed.

Appendix G: Sample Critical Incident Logs[6]

1. From JaneDoe@aol.com Sun Dec 29 13:59:59 2002

Date: Tue, 15 Oct 2002 08:15:20 -0400

From: JaneDoe@aol.com

To: ksrioux@abcd.edu

Subject: find and share info

After a conversation with my brother's girlfriend, she mentioned that she was completeing a study project on autism.
While searching for information about special needs children (on Google) for my mainstreamed children, I came across a link that I thought Lorie could use.

The page is a page of links to sources on autism.

I e-mailed this information to Lorie with the attached message:
"Here is a webpage with additional resources for your paper on autism.
http://www.autism-resources.com/
It has links to some credible Web sites. I also want to give you Dr. Moroose's e-mail address. He was the professor at Fairmont State who headed up the Special Education Program. You also might want to call Michelle Umble. She is getting her degree in Special Education and may have more resources.
Hope this helps!
Jane Doe

[6] Jane Doe and John Doe are used in Appendix G as pseudonyms to ensure confidentiality.

I felt satisfied that I might save her some steps in her search. She is a very busy person who works in the medical field (not a doctor).

2. From JaneDoe@hotmail.com Sun Dec 29 13:59:59 2002

Date: Wed, 16 Oct 2002 11:25:18 -0400

From: Jane Doe <JaneDoe@hotmail.com>

To: Kevin Rioux <ksrioux@abcd.edu>

Subject: wednesday

1. I sent one part of a webpage to my mom, the same one as before. Last week, I received an e-mail with a joke, followed a link, and meandered my way to this page. It amused me to no end so I bookmarked it.

2. It's a horrid little game that should not be amusing but is. The URL is in the email.

3. Email.

4. Thoughts went something like this: "It's nasty outside, wonder what the weather's like in mass? Bet it's cold. Wonder if Mum's miserable at work? I bet she'd like something fun. I'll send her the Fluff the Cat game."

I'll send you a copy of the email. Sorry if I sound discombobulated, I'm still under the influence of cold medicine.

Jane Doe

3. From JaneDoe@hotmail.com Sun Dec 29 13:59:59 2002

Date: Wed, 16 Oct 2002 11:25:51 -0400

From: Jane Doe <JaneDoe@hotmail.com>

To: Kevin Rioux <ksrioux@abcd.edu>

Subject: Fw: something fun for wednesday

----- Original Message -----

From: Jane Doe

To: Mom

Sent: Wednesday, October 16, 2002 11:18 AM

Subject: something fun for wednesday

it's pretty nasty and rainy down here. how's mass? last i heard it wasn't much better. anyway, something amusing on a rainy wednesday:

http://www.killfrog.com/00/fluff.html

there's a lot of sound, so turn down the speakers before you open it.

anyway, if you remember, please pray for me tonight, around 5pm. Dinner's at 5:15. yey... ;->

Jane Doe

4. From JohnDoe@hotmail.com Sun Dec 29 13:59:59 2002

Date: Mon, 21 Oct 2002 16:33:22 -0400

From: John Doe <JohnDoe@hotmail.com>

To: ksrioux@abcd.edu

Subject: dissertation questions

Kevin

Here the answers to the article I sent you yesterday (to my father, John Doe, Sr.). Sorry to get them to you so late -- they slipped my mind. Hope you had a good weekend and that you finally got your computer up and running.

John Doe

1. The information I sent came from an online publication called Salon. I enjoy its prespective on politics, the arts, music, etc. look through it almost daily. I wasn't deliberately looking for information to share.

2. This an interview with the musician Steve Earle. It details his career, his music, and his recent involvement with political causes (capital punishment, for instance).

3. I sent the URL for the article via e-mail.

4. Reading this article made me think of a conversation I had recently with

my father about Bruce Springsteen's new "9/11" album. We were both cynical about his motives. The interview with Earle revealed that other reactions existed in the music community about the political status of the United States in 2002. I knew my father would appreciate the article, and that it might dispell his fear that all musicians are self-absorbed capitalists.

John Doe

5. From JaneDoe@aol.com Sun Dec 29 14:00:00 2002

Date: Tue, 05 Nov 2002 01:19:09 -0500

From: JaneDoe@aol.com

To: filmgrr@xyz.com, attaegirl@123.com, dave@smith.net,
newbecky@xyz.com, drjean@doe.net

Cc: ksrioux@abcd.edu

Subject: Re: November Surplus Sale at ABCD

Hi friends,

Thought you might be interested in going to the surplus sale this Friday. Please pass on to anyone who might be interested. Jane Doe

---

Join us Friday, November 8, from 9 am to noon for the next public surplus sale at the Surplus Property Warehouse. For more information visit the Surplus Property web site at www.abcd.edu/bss/surplus.html.

Sincerely,

Business & Auxiliary Services

6. From JaneDoe@aol.com Sun Dec 29 14:00:00 2002

Date: Tue, 05 Nov 2002 01:27:18 -0500

From: JaneDoe@aol.com

To: ksrioux@abcd.edu

Subject: Re: Research questions

Regarding Surplus Sale:

1) I am on a reminder e-mail list about the surplus sale.

2) I am sharing the time and date for the next public surplus sale.

3) Information was shared via email.

4) I saw the reminder and immediately thought to send it to my friends. Several of my friends work and/or volunteer at nonprofit agencies, and this surplus sale has very cheap prices on office items, computers, and even furniture for the home. Chairs are $1.00, pianos are $5.00, computers $10.00 and up, etc. I am hoping that my friends will, in turn, forward the info. to other nonprofits in the area.

Jane Doe

References

Allen, B. L. (1991). Cognitive research in information science: Implications for design. *Annual Review of Information Science and Technology, 26*, 3-37.

Allen, B. L. (1996). *Information tasks: toward a user-centered approach to information systems.* New York: Academic Press.

Allen, T. H. (1969). Information needs and uses. *Annual Review of Information Science and Technology, 4*, 3-28.

Allen, T. J. (1970). Communication networks in R & D laboratories. *R & D Management, 1*(1), 14-21.

Allen, T. J. (1977). *Managing the flow of technology: Technology transfer and the dissemination of technical information within the R & D organization.* Cambridge, MA: MIT Press.

American Psychological Association. (1996). *Publication manual of the American Psychological Association* (4th ed.). Washington, DC: Author.

Bates, M. (1989). The design of browsing and berrypicking techniques for the online search interface. *Online Review, 13*(5), 407-424.

Bates, M. J. (2002). Toward an integrated model of information seeking and searching. *New Review of Information Behaviour Research*, *3,* 1-16.

Belkin, N. J. (1980). Anomalous state of knowledge as a basis for information retrieval. *Canadian Journal of Information Science, 5,* 133-144.

Belkin, N., Oddy, R., & Brooks, H. (1982). ASK for information retrieval: Part I: Background and theory. *Journal of Documentation*, *38*(2), 61-71.

Bentley, R., Horstmann, T., & Trevor, J. (1997). The World Wide Web as enabling technology for CSCW: The case of BSCW. *Computer Supported Cooperative Work: The Journal of Collaborative Computing*, *6*(2/3), 111-134.

Beyer, H., & Holtzblatt, K. (1998). *Contextual design: Defining customer-centered systems.* San Francisco: Morgan Kaufmann.

Boland, R. J., Tenkasi, R. V., & Te'eni, D. (1994, August). Designing information technology to support distributed cognition. *Organization Science, 5*(3), 456-475.

Bonk, C. J., & King, K. S. (Eds.). (1998). *Electronic Collaborators: Learner-Centered Technologies for Literacy, Apprenticeship, and Discourse*. Mahwah, NJ: Erlbaum.

Brown, J. S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science, 2*(1), 40-57.

Brown, M. (1991). A general model of information-seeking behavior. *Proceedings of the 54th Annual Meeting of the American Society for Information Science*, 9-14.

Bruce, H., Fidel, R., Ingwersen, P., & Vakkari, P. (Eds.). (2002). *Emerging Frameworks and Methods: Proceedings of the Fourth International Conference on Conceptions of Library and Information Science (CoLIS4).* Greenwood, CO: Libraries Unlimited.

Burrows, R., Nettleson, S., Pleace, N., Loader, B., & Muncer, S. (2000). Virtual community care? Social policy and the emergence of computer mediated social support. *Information, Communication and Society*, *3*(1), 95-121.

Cantor, N., Markus, H., Niedenthal, P., & Nurius, P. (1986). On motivation and the self concept. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 96-121). New York: Guilford Press.

Case, D. O. (2002). *Looking for information: A survey of research on information seeking, needs and behavior.* New York: Academic Press.

Chang, S., & Rice, R. E. (1993). Browsing: A multidimensional framework. *Annual Review of Information Science & Technology*, *28,* 231-276.

Chatman, E. A. (1992). *The information world of aging women*. Westport, CT: The Greenwood Press.

Chatman, E. A. (1996). The impoverished life-world of outsiders. *Journal of the American Society for Information Science, 48*(3) 193-206.

Chatman, E. A. (1999). A theory of life in the Round. *Journal of the American Society for Information Science, 50*(3) 207-217.

Choo, C., Detlor, B., & Turnbull, D. (1999). Information seeking on the Web: An integrated model of browsing and searching. *Proceedings of the 62nd annual meeting of the American Society for Information Science,* 3-16.

Cole, J. I. (2000). *The UCLA Internet Report: Surveying the Digital Future.* Retrieved April 3, 2003, from The University of California, Los Angeles, Center for Communication Policy Web site: http://www.ccp.ucla.edu

Constant, D., Sproull, L., & Kiesler, S. (1996, March-April). The kindness of strangers: The usefulness of electronic weak ties for technical advice. *Organization Science, 7*(2), 119-135.

Cooper, R. B. (2000, June). Information technology development creativity: A case study of attempted radical change. *MIS Quarterly, 24*(2), 245-276.

Crane, D. (1971). Information needs and uses. *Annual Review of Information Science and Technology, 6*, 3-39.

Crawford, S. (1978). Information needs and uses. *Annual Review of Information Science and Technology, 13*, 61-81.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed method approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Curtis, K., Weller, A., & Hurd, J. (1997). Information-seeking behavior of health sciences faculty: the impact of new information technologies. *Bulletin of the Medical Library Association, 85*(4), 402-410.

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know.* Boston: Harvard Business School Press.

DeMey, M. (1977). The cognitive viewpoint: Its development and its scope. *CC 77 International Workshop on the Cognitive Viewpoint, Ghent, Belgium*, xvi-xxxii.

Denzin, N., & Lincoln, Y. (1994). Entering the field of qualitative research. In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 1-17). Thousand Oaks, CA: Sage.

Derricourt, R. (1996). *An Author's Guide to Scholarly Publishing.* Princeton, NJ: Princeton University Press.

Dervin, B. (1983). *An overview of sense-making research: concepts, methods and results to date*. Paper presented at the International Communications Association Meeting, Dallas, Texas.

Dervin, B. (1992). From the mind's eye of the "user." In D. Glazier & R. Powell (Eds.), *Qualitative Research on Information Management* (pp. 61-84). Englewood, CO: Libraries Unlimited.

Dervin, B., & Nilan, M. (1986). Information needs and uses. *Annual Review of Information Science and Technology*, 21, 3-33.

Ellis, (1989). A behavioral approach to information retrieval design. *Journal of Documentation*, *45*, 171-212.

Ellis, D., & Haugan, M. (1997). Modeling the information seeking patterns of engineers and research scientists in an industrial environment. *Journal of Documentation, 49,* 384-403.

Erdelez, S. (1995). *Information encountering: An exploration beyond information seeking.* Unpublished doctoral dissertation. Syracuse University. Syracuse, NY.

Erdelez, S. (1996). Information Encountering: A conceptual framework for accidental information discovery. In P. Vakkari, R. Savolainen & B.

Dervin (Eds.), *Information Seeking In Context: Proceedings of an International Conference on Research in Information Needs, Seeking and Use in Different Contexts* (pp. 412-421). London: Taylor-Graham.

Erdelez, S. (1999). Information encountering: It's more than just bumping into information. *Bulletin of the American Society for Information Science, 25*(3), 25-29.

Erdelez, S. (2000). Toward understanding information encountering on the Web. *Proceedings of the 63rd Annual Meeting of the American Society for Information Science*, 363-371.

Erdelez, S., & Rioux, K. S. (2000a). Sharing tools on newspaper Web sites: An exploratory study. *Online Information Review, 24*(3), 218-228.

Erdelez, S., & Rioux, K. S. (2000b). Sharing information encountered for others on the Web. *New Review of Information Behaviour Research, 1,* 219-233.

Evans, P. (1989). *Motivation and emotion.* New York: Routledge.

Finholt, T., & Olson, G. (1997). From laboratories to collaboratories: A new organizational form of scientific collaboration. *Psychological Science, 8*(1), 28-36.

Fisher, D. (2000, November 29). Yahoo testing the waters for corporate IM.*ZDNet News*. Retrieved April 5, 2003, from http://live.altavista.com/scripts/editorial.dll?ei=2324058&ern=y

Fox, S., & Rainie, L. (2000). *The online healthcare revolution: How the Web helps Americans take better care of themselves. Pew Internet & American Life Project: Online Life Report*. Retrieved April 2, 2003, from http://www.pewinternet.org

Gahan, C., & Hannibal, M. (1998). *Doing qualitative research using QSR NU*DIST.* Thousand Oaks, CA: Sage Publications, Inc.

Garvey, W. D., Tomita, K., & Woolf, P. (1979). The dynamic scientific information user. In Garvey, W. D. (Ed.), *Communication: The essence of science*. Elmsford, NY: Pergamon Press.

Geertz, C. (1973). *The interpretation of cultures: Selected essays.* New York: Basic Books.

Georgia Institute of Technology. (1999). *Results of GVU's Tenth World Wide Web User Survey*. Retrieved April 3, 2003, from http://www.gvu.gatech.edu/user_surveys/survey-199810/tenthreport.html

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory.* Hawthorne, NY: Aldine.

Glaser, B. G. (1993). *Examples of Grounded Theory: A reader.* Mill Valley, CA: Sociology Press.

Global Reach. (2003). *Global Internet Statistics (by language).* Retrieved June 27, 2003, from http://www.glreach.com/globstats/index.php3

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360-1380.

Green, J., Caracelli, V., & Graham, W. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*, 255-274.

Gross, M. (1995). The imposed query. *RQ, 35*(2), 236-243.

Gross, M., & Saxton, M. L. (2001). Who wants to know? Imposed queries in the public library. *Public Libraries, 40*(3), 170-176.

Hall, R., Miyake, N., & Enyedy, N. (Eds.). (1997). *Proceedings of the 2nd International Conference on Computer Support for Collaborative Learning.* Mahwah, NJ: Erlbaum.

Harper, R., & Sellen, A. (1995). Collaborative tools and the practicalities of professional work at the International Monetary Fund. In Katz, I., Mack, R., Marks, L., Rosson, M., & Nielsen, J. (Eds.), *CHI '95: Proceedings of the Association for Computing Machinery Special Interest Group on Computer-Human Interaction: Conference on Human Factors in Computer Systems*, 122-129.

Henline, P. (1998). Eight collaboratory summaries. *Interactions*, 66-72.

Herner, S., & Herner, M. (1967). Information needs and uses in science and technology. *Annual Review of Information Science and Technology, 2*, 1-34.

Herner, S. (1970). Browsing. *Encyclopedia of Library and Information Science, 1,* 408-415. New York: Dekker.

Hertzberg, R. (2002, May 15). Instant messaging: From toy into tool. *BaselineMag.* Retrieved June 27, 2003 from http://www.baselinemag.com/print_article/0,3668,a=26976,00.asp

Hewins, E. T. (1990). Information needs and uses. *Annual Review of Information Science and Technology, 25*, 145-172.

Huberman, B. A., Pirolli, P. L., Pitkow, J. E., & Lukose, R. M. (1998). Strong regularities in World Wide Web surfing. *Science, 280*(5360), 94-97.

Huotari, M., & Chatman, E. (2001). Using everyday life information seeking to explain organizational behavior. *Library and Information Science Research, 23*(4), 351-366.

Ingwersen, P. (1982). Search procedures in the library—analyzed from the cognitive point of view. *Journal of Documentation, 38*(3), 165-191.

Ingwersen, P. (1992). *Information retrieval interaction*. London: Taylor Graham.

Isaac, S., & Michael, W. (1981). *Handbook in research and evaluation for education and the behavioral sciences (2nd ed.).* San Diego, CA: EDITS Publishers.

Isbell, D., & Kammerlocher, L. (1998). Implementing Kuhlthau: A new model for library and reference instruction. *Reference Services Review, 26*(3/4), 33-44.

Jackson, W. K. (2001). *Interactions between information overload and managerial roles—an exploratory study*. Unpublished doctoral dissertation, University of Texas at Austin.

Johnson, R. B. (1997). Examining the validity structure of qualitative research. *Education, 118*(2), 282-292.

Jubert, A. (1999). Communities of practice. *Knowledge Management, 3*(2). Retreived February 25, 2004, from http://www.kmmagazine.com/xq/asp/sid.0/volume.3/issue.2/qx/displayissue.htm

Kaminer, N., & Braunstein, Y. (1998). Bibliometric analysis of the impact of Internet use on scholarly productivity. *Journal of the American Society for Information Science, 49*(8), 720-730.

Kehoe, C., Pitkow, J., Sutton, K., Aggarwal, G., & Rogers, J. D. (1999). *Results of GVU's Tenth World Wide Web User Survey.* Retrieved April 3, 2003, from http://www.gvu.gatech.edu/user_surveys/survey-1998-10/tenthreport.html#ex

Kennedy, L., Cole, C., & Carter, S. (1999). The false focus in online searching: The particular case of undergraduates seeking information for course assignments in the humanities and social sciences as described in the information search process theory of Carol Kuhlthau. *Reference and User Services Quarterly, 38(3),* 267-273.

Kies, J., Williges, R., & Rosson, M. (1998). Coordinating computer-supported cooperative work: A review of research issues and strategies. *Journal of the American Society for Information Science, 49*(9), 776-791.

Kilman, D., & Forslund, D. (1997). An international collaboratory used on virtual patient records. *Communications of the ACM, 40*(8), 110-117.

Krikelas, J. (1983). Information-seeking behavior: Patterns and concepts. *Drexel Library Quarterly, 19*(2), 5-20.

Kuhlthau, C. C. (1991). Inside the search process: Information-seeking from the user's perspective. *Journal of the American Society for Information Science, 42*, 361-371.

Kuhlthau, C. (1994). *Seeking meaning: A process approach to library and information services.* Norwood, NJ: Ablex Publishing.

Large, J. A., Tedd, L. A. Hartley, R. J. (Eds.). (1999). *Information seeking in the online age: Principles and practice.* London: Bowker-Saur.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* New York: Cambridge University Press.

Lazinger, S., Bar-Ilan, J., & Peritz, B. (1997). Internet use by faculty members in various disciplines: a comparative case study. *Journal of the American Society for Information Science, 48*(6), 508-518.

Levy, D., & Marshall, C. (1995). Going digital: A look at assumptions underlying digital libraries. *Communications of the ACM, 38*(4), 77-84.

Lilley, D. B., & Trice, R. W. (1989). *A history of information science, 1945-1985.* San Diego, CA: Academic Press.

Lin, N., & Garvey, W. D (1971). Information needs and uses. *Annual Review of Information Science and Technology, 7*, 5-33.

Lincoln, Y., & Guba, E. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Program Evaluation, 30,* 73-84.

Lipetz, B. (1970). Information needs and uses. *Annual Review of Information Science and Technology, 5*, 3-32.

LISTSERV. (2003). *LISTSERV Fact Sheet.* Retrieved June 27, 2003, from http://www.lsoft.com/products/listserv_factsheet.asp

Marchionini, G. (1995). *Information Seeking in Electronic Environments.* New York: Cambridge University Press.

Marchionini, G., & Komlodi, A. (1998). Design of interfaces for information seeking. *Annual Review of Information Science and Technology, 33*, 89-130.

Marshall, C. C., & Bly, S. (in press). Sharing encountered information: Digital libraries get a social life. *Proceedings of the Joint Conference on Digital Libraries, JCDL '04.*

Martyn, J. (1975). Information needs and uses. *Annual Review of Information Science and Technology, 9,* 3-23.

Martz, D., & Ehrlich, K. (1995). Pointing the way: Active collaborative filtering.*CHI '95: Conference proceedings on human factors in computing systems*, 202-209.

McKechnie, L., Pettigrew, K., & Joyce, S. (2001). The origins of contextual use of theory in human information behavior research. *New Review of Information Behaviour Research, 2*, 47-64.

Mehadevan, B. (2000). Business models for Internet-based e-commerce: An anatomy. *California Management Review, 42*(12), 55-69.

Menzel, H. (1966). Information needs and uses in science and technology. *Annual Review of Information Science and Technology, 1*, 41-69.

Messaging Online. (2000). *Year-end 1999 mailbox report*. Retrieved April 4, 2003, from http://www.messagingonline.com/mt/html/feature031400.html

Mick, C. K., Linsey, G. N., & Callhan, D. (1980, September). Toward usable user studies. *Journal of the American Society for Information Science, 31*(5), 347-356.

Miles, L. (2000, October 26). Fresh approach to the skills shortage. *Marketing*, 87-88.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.

Millen, D. R., & Dray, S. M. (2000). Information sharing in an online community of journalists. *Aslib Proceedings, 52*(5), 166-173.

Mook, D. G. (1987). *Motivation: The organization of action.* New York: W. W. Norton.

Morris, R. (1994). Toward a user-centered information service. *Journal of the American Society for Information Science, 45*(1), 20-30.

Mutch, A. (2000). Managers, information and teams: A tale of two companies. *The New Review of Information Behaviour Research, 1*, 151-166.

Nahl, D. (2001). A conceptual framework for defining information behavior. *Studies in Multimedia Information Literacy Education (SIMILE), 1*(2). Retrieved April 15, 2004, from http://www.utpjournals.com/jour.ihtml?lp=simile/issue2/nahlfulltext.html

Nua. (2003). *Global Net Population Increases.* Retrieved June 27, 2003 from http://www.nua.com/surveys/?f=VS&art_id=905358729&rel=true

Paisley, W. J. (1968). Information needs and uses. *Annual Review of Information Science and Technology, 3*, 1-30.

Parker, D. (1998, December). WebTV: Email for mom. *EMedia Professional, 11*(12), 88.

Patton, M. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Newbury Park, CA: Sage.

Pelzer, N., Wiese, W., & Leysen, J. (1998). Library use and information-seeking behavior of veterinary medical students in the electronic environment. *Bulletin of the American Medical Library Association, 86*(3), 346-355.

Petri, H. L., & Govern, J. M. (2004). *Motivation: Theory, research, and applications* (5th ed.). Belmont, CA: Thomson Wadsworth.

Pettigrew, K. E. (2000). Lay information provision in community settings: How community health nurses disseminate human services to the elderly. *Library Quarterly, 70*(1), 47-85.

Papacharissi, Z. & Rubin, A. (2000, Spring). Predictors of Internet use. *Journal of Broadcasting & Electronic Media, 44,* 175-197.

Pettigrew, K., Fidel, R., & Bruce, H. (2001). Conceptual frameworks in information behavior. *Annual Review of Information Science and Technology, 35,* 43-78.

Phillips, B. W. (2000). E-commerce management—a matter of breadth and depth. *Business Communications Review, 30*(3), 14-18.

Prinz, W., & Kolvenbach, S. (1996). Support for workflows in a ministerial environment. *CSCW '96: Proceedings of the Conference on Computer Supported Cooperative Work*, 199-208.

Qualitative Research Solutions and Research Pty Ltd. (1997). *QSR NU*DIST 4 User Guide* (2nd ed.). Thousand Oaks, CA: SCOLARI Sage Publications Software, Inc.

Rioux, K. S. (2000). Sharing information found for others on the World Wide Web: A preliminary examination. *Proceedings of the 63rd Annual Meeting of the American Society for Information Science*, 68-77.

Roseman, M., & Greenberg, S. (1996). Building real-time groupware with GroupKit, a groupware toolkit. *ACM Transactions on Computer-Human Interaction, 11*(2), 66-106.

Ross-Flanigan, N. (1998). The virtues and vices of virtual colleagues. *MIT's Technology Review*, *101*(2), 52-59.

Royal Society. (1948). *The Royal Society scientific information conference, 21 June-2 July 1948: Report and papers submitted*. London: Author.

Rubin, R. E. (1998). *Foundations of Library and Information Science*. New York: Neal-Schuman Publishers.

Saito, M., & Ohmura, K. (1998). A cognitive model of searching for ill-defined targets on the Web: The relationship between search strategies and user satisfaction. *Proceedings of the 21st annual international ACM SIGIR conference on research and development in information retrieval,* 155-163.

Saracevic, T. (1996). Modeling interaction in information retrieval (IR). *Proceedings of the 59th Annual Meeting of the American Society for Information Science,* 3-9. Schmidt, K., & Simone, C. (1996). Coordination mechanisms: Toward a conceptual foundation of CSCW systems design. *Computer Supported Cooperative Work, 5*, 155-200.

Schutz, A. (1967). *The phenomenology of the social world.* Evanston, IL: Northwestern University Press.

Shapira, B., Shoval, P., & Raveh, A. (1996). Hypertext browsing: A new model for information filtering based on user profiles and data clustering. *Online and CDROM Review, 20*, 3-10.

Shepherd, M., Duffy, J., & Watters, C. (2001). The role of user profiles for news filtering. *Journal of the American Society for Information Science and Technology, 52*(2), 149-160.

Spink, A. (1998, April). Modeling users' successive searches in digital environments. *D-Lib*. Retrieved April 3, 2003, from http://www.dlib.org/dlib/april98/04spink.html

Spink, A., Bray, K., Jaeckel, M., & Sidberry, G. (1999). Everyday life information seeking by low income African American households: Wynnewood Healthy Neighbourhood Project. In T. Wilson & D. Allen (Eds.), *Exploring the contexts of information behaviour: Proceedings of the second international conference on research in information needs, seeking and use in different contexts, 13/15 August, 1998, Sheffield, UK.* Los Angeles, CA: Taylor Graham.

Star, S., & Ruhleder, K. (1996). Steps toward an ecology of infrastructure: Problems of design and access in large-scale information systems. *Information Systems Research, 7*, 27-57.

Strauss, A. & Corbin, J. (1994). Grounded theory methodology: An overview. In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 273-285). Thousand Oaks, CA: Sage.

Strauss, A., & Corbin, J. (1997). *Grounded theory in practice.* Thousand Oaks, CA: Sage.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Newbury Park, CA: Sage.

Twidale, M., & Nichols, D. (1998). Computer supported cooperative work in information search and retrieval. *Annual Review of Information Science and Technology, 33*, 259-319.

Twidale, M. B., Nichols, D. M., & Paice, C. D. (1997). Browsing is a collaborative process. *Information Processing & Management, 33*(6), 761-783.

U.S. National Science Foundation, Office of Scientific Information. (1957). *Current research and development in scientific communication 1957, No.3.* Washington, DC: U.S. Government Printing Office.

Vakkari, P., Savolainen, R. & Dervin, B. (Eds). (1997). *Information seeking in context: proceedings of an international conference on research in information needs, seeking and use in different contexts, 14-16 August, 1996, Tampere, Finland*. Los Angeles: Taylor Graham.

Vakkari, P. (1999, November). Task complexity, problem structure and information actions: Integrating studies on information seeking and retrieval. *Information Processing and Management, 35*(6), 819-837.

Vickery, J. E. (1977). A note in defense of browsing. *BLL Review, 5*, 110.

Vogt, W. (1999). *Dictionary of statistics & methodology* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Voigt, M. J. (1961). Scientists' approaches to information. *ACRL Monograph*, 24. Chicago: American Library Association.

Wagner, M. (2000, October 30). Casting a wide net for Web talent: Companies reassign workers, tap internal referrals and Internet job sits to ease shortage. *Internetweek*, 139-140.

Weenig, M. W. (1999, May). Communication networks in the diffusion of innovation in an organization. *Journal of Applied Social Psychology, 29*(5), 1072-1092.

Wellman, B., & Berkowitz, S. (Eds.). (2003). *Social Structures: A Network Approach.* Toronto: Canadian Scholars' Press.

Wellman, B., & Haythornthwaite, C. (Eds.). (2002). *The Internet in Everyday Life*. Malden, MA: Blackwell Publishing.

Wenger, E. (1998). *Communities of practice*. New York: Cambridge University Press.

Werbach, K. (2000). The emerging model for business in the Internet era. *Harvard Business Review, 78*(3), 84-93.

Williams, D. D. (1986). When is naturalistic evaluation appropriate? *New Directions for Program Evaluation, 30*, 85-92.

Williamson, K. (1997). The information needs and information-seeking behavior of older adults: An Australian study. In P. Vakkari, R. Savolainen & B. Dervin (Eds.), *Information seeking in context: proceedings of an international conference on research in information needs, seeking and use in different contexts, 14-16 August, 1996, Tampere, Finland*. Los Angeles: Taylor Graham.

Wilson, T. D. (1994). Information needs and uses: Fifty years of progress? In B. C. Vickery (Ed.), *Fifty years of information progress: A journal of documentation review* (pp. 15-51). London: Aslib.

Wilson, T. D. (1999). Models in information behaviour research. *Journal of Documentation, 5*(3), 249-270.

Wilson, T.D. & Allen, D.K. (Eds.). (1999). *Exploring the Contexts of Information Behaviour: Proceedings of the Second International Conference on Research in Information Needs, Seeking and Use in Different Contexts. Sheffield, UK, 13-15 August 1998*. London: Taylor Graham.

Wilson, T. D. (2000). Human information behavior. *Informing Science, 3*(2) (special issue on information science research), 49-55.

Wolcott, H. (1975). Criteria for an ethnographic approach to research in the schools. *Human Organization, 34*, 111-127.

Vita

Kevin Sean Rioux was born in Lewiston, Maine, on March 6, 1966, the son of Linda Marie Cornish Rioux and Raymond Arthur Rioux. After graduating from Archbishop Rummel High School in Metairie, Louisiana, in 1984, he entered Louisiana State University in Baton Rouge. He received a Bachelor of Arts in Journalism in 1988. He earned a Master of Arts in Journalism from The University of Texas at Austin in 1991. During the following years he was employed as a research and training associate. He returned to the Graduate School of The University of Texas at Austin in 1997. He earned a Master of Library and Information Science in 2001, and was employed as a Visiting Instructor at The University of South Florida. He is currently an Instructor at The University of North Carolina at Greensboro. He completed graduate study toward the Doctor of Philosophy degree in the School of Information in May 2004.

Permanent Address: 417 Hillside Drive, Greensboro, North Carolina 27401.

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