The Thank You Study:
User Satisfaction with Digital Reference Service

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Abstract

With the emergence of library digital reference services using e-mail, chat, and other online technologies to answer users' questions, there is a growing need for methods of evaluating service quality not only from the viewpoint of digital reference service providers but also from the users' perspective. The Thank You Study provides a methodology for examining digital reference transcripts to explore user-identified quality factors, outcomes and indicators. The study analyzed 810 e-mail transcripts, including 558 "thanked" and 252 "unthanked" digital reference interactions. Qualitative and quantitative results are described, and a codebook for analyzing user "thank you" responses is included.

Introduction

Since the late 1980's, libraries and information services have explored the use of online communication modes such as e-mail and chat in providing reference services to users. These Internet-based "digital reference" services increasingly are becoming standard among the array of question-answering options available to library users, in addition to traditional face-to-face and telephone reference services. Consortia-based services are also sharing and exchanging users' e-mail questions between libraries, and there is a growing need for research on ways to evaluate the quality of digital reference services, particularly from the point of view of digital reference users.

The Thank You Study explored the possibility of developing assessment techniques for analyzing the spontaneous, unsolicited e-mail "thank you" messages sent by users in order to gain insights into user perspectives on digital reference service quality. These messages from digital reference users may:

- identify specific digital reference answers deemed worthy of praise
- describe quality elements in answers from the user perspective
- provide details concerning subsequent user actions and outcomes

Our research compared a sample of 558 e-mail digital reference interactions which received user "thank you" responses with a sample of 252 interactions which did not receive "thank you" responses. In our quantitative research, we examined and compared these transcripts for elements such as the number of words in the answer, the speed of the answer, and the number of words in the question. We also performed qualitative assessment of the content of users' "thank you" messages with the design of a coding scheme for content analysis of digital reference quality factors, socio-emotional factors, and actions and outcomes described by users in the text of their messages.

Literature Review

This research follows upon an earlier finding by Joseph Janes and David Carter in 2000 of a 20% "thank you" rate for e-mail digital reference questions answered at the Internet Public Library (Carter & Janes, 2000). In 2001, digital reference service provider Sara Weissman similarly reported a 1 in 5 "thank-you" rate for e-mail digital reference transactions at the Morris County

New Jersey Public Library (Weissman, 2001). This repeated finding of a low e-mail "thank you" rate is an interesting anomaly when compared to face-to-face and chat reference interactions, which typically conclude with a "thank you" expressed by the user.

We explored the research literature seeking a theoretical basis to explain why there might be fewer "thank you" responses in e-mail as compared to face-to-face or chat modes of reference service and found two theories in computer-mediated communications which address the impact that the communications medium itself has upon users' perceptions and behavior in the interaction:

- *Short, Williams & Christie's social presence theory* (Short, Williams & Christie, 1976: 64-76) suggests that as "social presence" cues such as voice, sight, smell, touch, and live synchronous interaction are reduced or eliminated by a communications medium, the user becomes less aware of another human present in the interaction and behaves in a different, more impersonal manner.

- *Daft & Lengel's media richness theory* (Daft & Lengel, 1984) further ranks different communications media along a continuum from "richest" to "leanest." Face-to-face is described as the richest mode in terms of available sensory cues, while e-mail is considered one of the leanest communication modes with a lowered level of sensory information.

These theories suggest that sensory cues such as sight, hearing, physical proximity, and immediacy of response increase awareness of the presence of another person in the interaction, which in turn triggers customary social responses such as politeness, deference, and conversational turn-taking. But, a lean medium such as fax or e-mail strips away most of the "social presence" cues – users cannot see, hear, or touch the other person in the interaction, and communications do not receive an immediate answer. Therefore, standard responses of politeness and social ritual are not triggered in the same way in e-mail communications as they would be in face-to-face communications or even in telephone and chat communications, which at least offer an immediacy of response.

Because this lowered sensory awareness of another person in interaction reduces the sense of social obligation, e-mail users would feel less social pressure to send a "thank you" message than face-to-face users would feel in thanking a librarian at a reference desk. Therefore, the 20% of digital reference users who do make the extra effort required to recontact and thank a digital reference service via e-mail may offer a useful window of insight into true digital reference user satisfaction, making it worthwhile to further investigate the interactions they deemed successful and deserving of praise.

We examined the research literature for other exploratory research into "thank you" messages in e-mail digital reference services but did not find any other such studies, and also found little work in general in the area of digital reference service evaluation from the user perspective. Efforts to obtain user assessments of digital reference services have included in-person interviews (Hahn, 1997), telephone interviews (Miwa, 2000; Southwick, 2001) and e-mail surveys (Garnsey & Powell, 2000).

Results of these studies have revealed some differences in the perceptions of users and librarians, such as Silvia Barcellos Southwick's finding that intermediaries did not wish to "bother" users by engaging them in question negotiation, whereas users expressed confidence that intermediaries would contact them if clarifications were needed (Southwick, 2001: 243). The need to incorporate user perspectives in evaluating digital reference services is clear, but our survey of the literature indicated a general lack of published research in this area.

In 1999 an Association of Research Libraries survey of 78 academic libraries found that while 96% provided digital reference services and 80% had been doing so since 1996 or earlier, only 13% (10 libraries in the survey) had conducted any sort of user evaluation of their services (Goetsch et al., 1999), and in a 2002 survey of librarians, Dr. Joseph Janes found that only 9% reported having done any kind of systematic evaluation of their digital reference services (Janes, 2002). The development of a methodology for analyzing user e-mail "thank you" messages would add a new evaluative tool for libraries interested in adding user feedback as an evaluative component for digital reference services.

Our exploration of quality elements in digital reference answers was also substantially guided by an extensive review of the literature on reference evaluation (Lynch, 1978; Goldhor, 1979; Childers, 1980; Gers & Seward, 1985; Bunge & Murfin, 1987; Murfin & Gugelchuk, 1987; Whitlatch, 1989; Dalton, 1992; Dewdney & Ross, 1994; RUSA, 1996; RUSA, 2000). An initial list of digital reference quality factors for our codebook was drawn from the existing research literature, and further refined during the intercoder reliability testing process.

Methodology

The setting for our research into user perspectives on quality in digital reference services was the Internet Public Library (IPL), a virtual library on the Internet which has been in existence since March 1995. The IPL's reference service answers e-mail questions from users around the world without affiliation-based or geography-based restrictions. Users access the question-answering service either by sending in an e-mail question or by filling out fields in a detailed online Web-based question form located on the Internet Public Library's Web site (http://www.ipl.org/div/askus/). The Web form asks a series of questions designed to encapsulate the reference interview process and to elicit a comprehensive description of the user's information need.

We analyzed 558 Internet Public Library digital reference transcripts that had received "thank yous" from users, and 252 transcripts that did not receive "thank you" messages, for a total of 810 digital reference interactions. Systematic random sampling techniques were utilized to ensure that random proportional samples of both "thanks" and "no thanks" digital reference transcripts were drawn from each month in the dataset for January-December 2002.

We also examined the sample of 558 "thank you" messages from Internet Public Library users during January-December 2002 using content analysis and qualitative coding for users' comments and assessments regarding the digital reference service they had received. A codebook for quality factors in digital reference service was developed based upon an extensive literature review of the research on reference evaluation and reference assessment. We tested the codebook during August and September 2003 with three rounds of intercoder reliability testing, with observed proportions of agreement at 75%, 85%, and 80%. Cohen's Kappa was also computed to correct for chance agreement, and was found to be at or above the 70% satisfactory level for all three intercoding sessions (.70, .83, and .77). The Thank You Study Codebook, which divides applicable codes into the three areas of *Quality Factors, Actions & Outcomes*, and *Socio-Emotional Factors*, is included here as *Appendix A*.

Quantitative Results

Thank You Rate

Our study found that of 5,400 questions answered by the Internet Public Library in 2002, "thank you" responses were received from 861 users – an overall "thank you" rate of 15.9% for the twelve months of 2002. The previous Janes & Carter study had analyzed January-March 1999, finding that out of more than 2,300 questions, the users sent back 458 spontaneous and unsolicited thank you responses - a 20% "thank you rate" for questions received during the first three months of 1999.

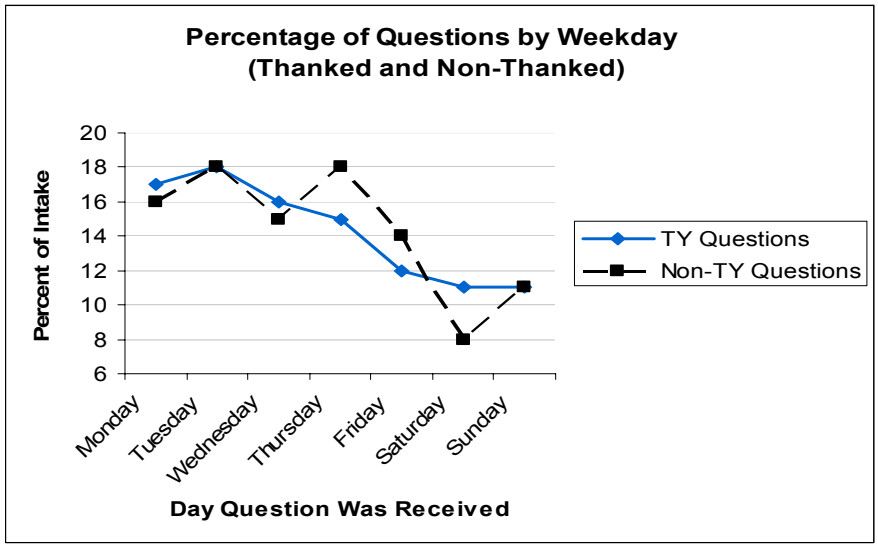
User Demographics

For both users who sent "thank yous" and those who did not, we noted that approximately 80% provided a general geographic location. Of these, approximately 70% were located in the United States and 30% in other countries such as Canada, India, United Kingdom, Singapore, Pakistan, South Africa, France, Philippines, Spain, Mexico, Japan, Taiwan, Germany, Norway, Indonesia and South Korea.

Geographic location did not affect "thank you" responses. We found no difference in "thanks" and "non thanks" from users who were located in the U.S. and users located in other countries.

Daily Patterns of Question-Asking

We observed the patterns of question-asking for each day of the week, noting that the largest number of questions was received in the early part of the working week (Monday through Wednesday), tapering off to a smaller number of questions toward the end of the week and the weekend.



Approximately half of the questions were received within the first three days of the working week (Monday, Tuesday and Wednesday) – 48.9% of the "non-thanked" questions and 51.5% of the "thanked" questions. The smallest number of questions were received on the weekend days (Saturday and Sunday) – 19% of the non-thanked questions and 21.9% of the "thanked" questions.

Table 1: E-mail Question Intake by Weekday

Intake Day	**Non-Thanked**	**Thanked**
Monday	40 (15.9%)	97 (17.4%)
Tuesday	46 (18.3%)	102 (18.3%)
Wednesday	37 (14.7%)	88 (15.8%)
Thursday	45 (17.9%)	81 (14.5%)
Friday	36 (14.3%)	68 (12.2%)
Saturday	21 (8.3%)	60 (10.8%)
Sunday	27 (10.7%)	62 (11.1%)

Our findings regarding these question intake patterns were consistent with case study observations from the literature review which reflected that a majority of digital reference questions appear to be sent while libraries are still open, and that the numbers of incoming digital questions are often observed to be highest Mondays-Wednesdays (Kibbee et al., 2002; Lederer, 2001; UCI Libraries, 1999; Bushallow-Wilbur et al., 1996).

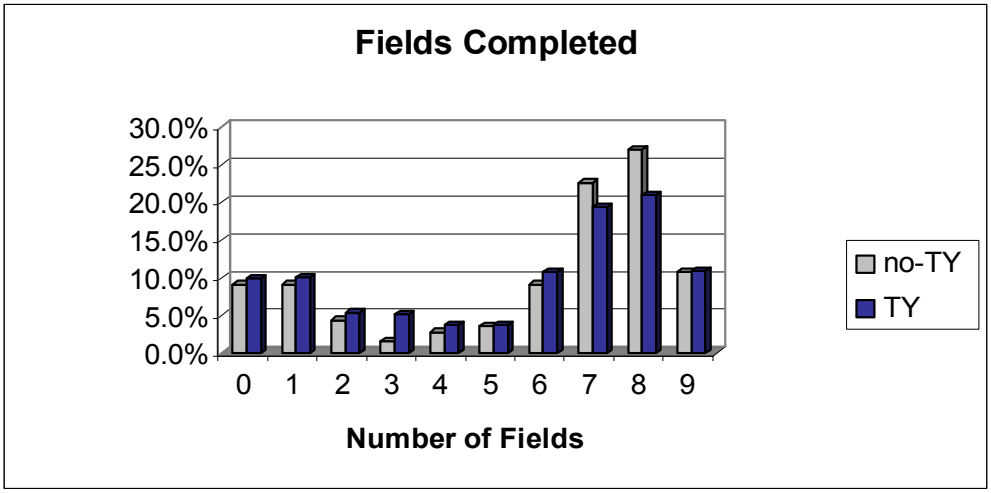
Use of the Reference Web Form

The Internet Public Library's detailed reference intake form provides a "systematic approach" to eliciting the user's information need as recommended in early research on the e-mail reference interview (Abels, 1996) and is designed to ask a detailed series of questions encapsulating the full range of reference interview questions which Robert Taylor classes in his *five filters theory* (Taylor, 1968) as *subject, objective and motivation, personal characteristics of the inquirer,*

relationship of inquiry to file organization (available tools, resources and systems), and *anticipated or acceptable answers* (type, formats and amount).

Users can choose either to send their questions through a reference Web form or to send by e-mail, but most do use the guidance of the reference Web form – more than twice as many as use the plain e-mail. We found that 69% of "thanking" users and 73% of "non-thanking" users had submitted their questions through the reference Web form.

We also observed that the majority of both "thanking" and "non-thanking" users demonstrated a willingness to respond to questions that were voluntary on the IPL's detailed reference Web form. The Web form included required fields (e.g., e-mail address, question) and as well as fields not required (e.g., preferred formats, occupation, preferred answer type). Six or more Web form fields were completed by the majority of both "non-thanking" users (69.4%) and users who sent "thank yous" (61.8%). Five e-mail users also voluntarily followed Web site instructions and answered six or more IPL intermediation questions in e-mail messages not sent through reference Web form.



The willingness that we observed among the users to voluntarily complete fields on a detailed Web form is an interesting result in light of a commonly held perception among information professionals that they cannot use a detailed Web form to obtain a comprehensive digital reference interview because the users won't fill it out.

Reasons for Asking

We found that most of the users reported seeking information for non-academic purposes. A little under one-quarter of all the users described asking questions about assignments, while about twice as many indicated that they did not consider their questions to be assignment-related.

- 350 of the "thanking" users (62.7%) described whether the question had resulted from an assignment or not, and 114 said that, yes, it was an assignment (20.4% of all "thanking" users) while 236 said that no, it was not an assignment (42.3%).

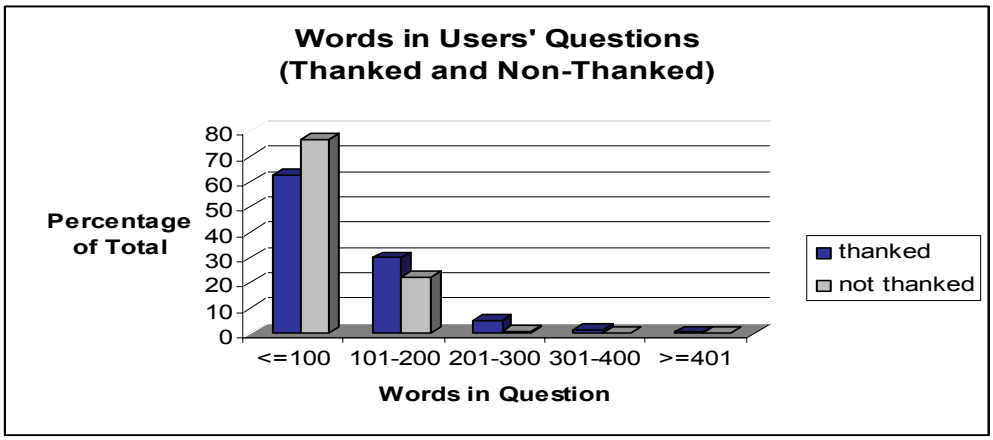
- 172 of the "non-thanking" users (68.3%) reported whether the question had resulted from an assignment or not, and 71 said that yes, it was an assignment (28.2% of all "non-thanking" users), while 101 said that no, it was not an assignment (40.1%).

Users also reported asking questions as proxies for other people – a phenomenon that has been studied by Melissa Gross and Matthew Saxton as "imposed queries."(Gross & Saxton, 2001) Among the "thanked" questions, 57 users reported seeking information on behalf of someone else such as a relative, friend, employer, or client (10.2%). Among users who did not send "thank yous," 17 reported "imposed queries" (6.7%).

Words in the Question

Users tended to briefly communicate the substance of their questions. We observed that in both the "thanked" and "non-thanked" questions, the majority of users described their information need in 200 words or less.

- 98.8% of the "non-thanking" users asked their question with 200 words or less.
- 92.6% of the "thanking" users asked their question with 200 words or less.



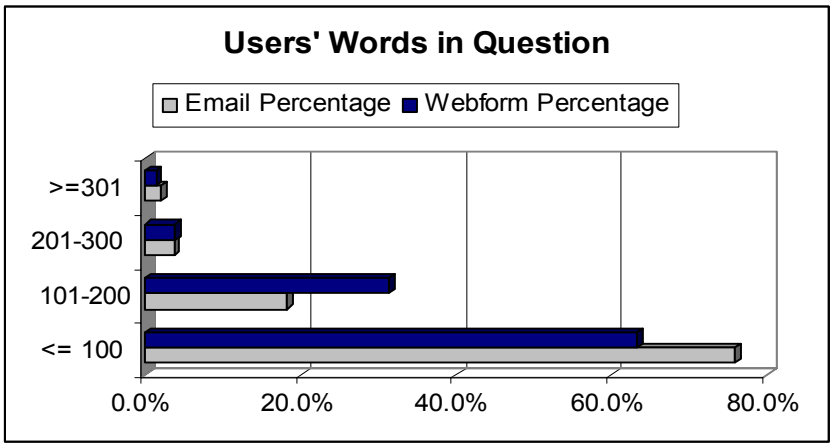
A greater tendency toward using more words in the question was observed among the "thank you" users. We found that 37.3% of "thanking" users exceeded 100 words in their questions, as compared to 23.2% of "non-thanking" users.

Table 2: Number of Words in Users' Questions

Words in the Question	**"No Thanks"**	**"Thanks"**
Up to 100 words	193 (76.6%)	350 (62.7%)
101-200 words	56 (22.2%)	167 (29.9%)
201-300 words	2 (.7%)	29 (5.2%)
301 or more	1 (.3%)	12 (2.2%)

The smallest number of words in a question was 8 words. Of the five questions received which had nine or fewer words, all five were submitted via e-mail rather than through the reference Web form. Similarly, of 25 questions with 20 or fewer words, only one was submitted via the

Web form. Overall, it appears that the guiding questions asked in the detailed reference Web form encouraged the Web form users to include more words during the process of expressing their questions.

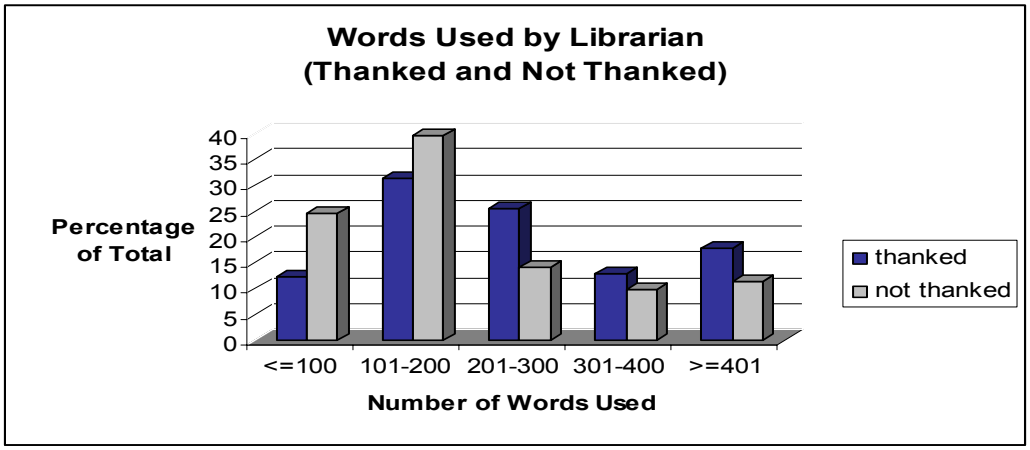


We found that less than one-fourth (24.1%) of the e-mail users described their information need with more than 100 words, as compared to over one-third of the Web form users (36.8%). This result suggests that for institutions seeking more detailed descriptions of information need from users, a detailed Web form or a page of guiding questions for e-mail users may offer a means of increasing the level of description from users.

Words in the Answer

We found the number of words in the librarian's answer to be a factor influencing the thank-you rate:

- "Thanked" librarians tended to use more words in answers, with more than half of the thanked librarians (56.3%) using over 200 words in their answers.
- "Non-thanked" librarians responded with fewer words in their answers.



Only about one-third (35.7%) of the non-thanked librarians were found to have exceeded 200 words in their responses, while the majority of non-thanked librarians (64.3%) responded with 200 words or less.

Table 3: Words in Librarians' Answers

Words in the Question	**Thanked**	**Not Thanked**
100 or less	69 (12.4%)	62 (24.6%)
101-200	175 (31.4%)	100 (39.7%)
201-300	142 (25.4%)	36 (14.3%)
301-400	72 (12.9%)	25 (9.9%)
401+	100 (17.9%)	29 (11.5%)

This is an intriguing finding which may reflect that e-mail is often seen as a communications medium best used for short, quick messages rather than lengthy communications. There may be a need indicated here to train librarians to reframe their perceptions of the e-mail medium from a means of "dashing off a quick note" to a means of "writing a letter" to encourage a lengthier e-mail responses to users' questions.

Standard Answers or FAQs

The answer least likely to generate a "thank you" response was found to be the frequently asked question (FAQ) or pre-written "standard answer." While FAQs were one of the largest, top-ranked categories among "non-thanked" questions (25 of 252, or 9.9%), they only ranked 19th among the "thanked" questions (9 of 558, or 1.6%). Nearly 3/4 of the FAQ pre-written answers in our sample did *not* receive thank yous (25 of 34, or 73.5%), as compared to opposite proportions for other answer categories (e.g., 70 of 91 Literature questions received thank yous, or 76.9%; 38 of 47 Biography questions received thank yous, or 80.9%).

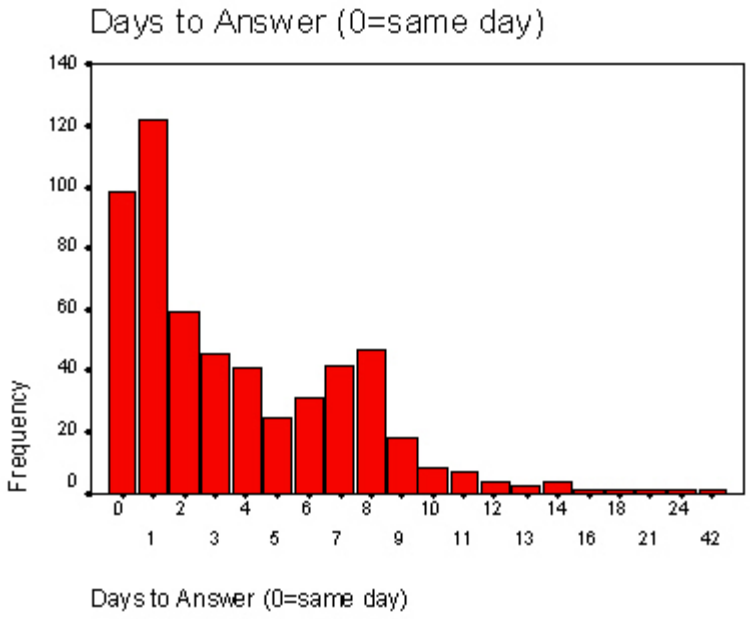
This finding is particularly intriguing since the use of pre-written FAQ "standard answers" is common among busy online question-answering services. The Internet Public Library answered 601 questions with FAQs in 2002, about 11% of all answers overall and one of the largest answer categories. There may be a need to evaluate whether use of standard answers is appropriate in all cases to meet user information needs, and also whether answers might be redesigned or rewritten to improve their usefulness and effectiveness in answering user questions in a satisfactory manner.

Speed of Answers

Did users send thanks more often for fast answers? We found the speed of answers to be similar for both "thanked" and "non-thanked" questions as well as for the IPL overall.

- 50.2% of the users who sent "thank yous" had received an answer either on the same day or within the next two days.

- 57.5% of the "non-thanking" users also had received answers within the first few days, as did 59.5% of all IPL users overall in 2002.



The slowest rate of answers was not, as might have been expected, for the "non-thanked" questions (57.5% answered within the first three days) but for the "thanked" questions (50.2% answered within the first three days.) Did this reflect a willingness on the part of "thanking" users to wait for answers? How effectively did the speed of answers match users' expected timeframes?

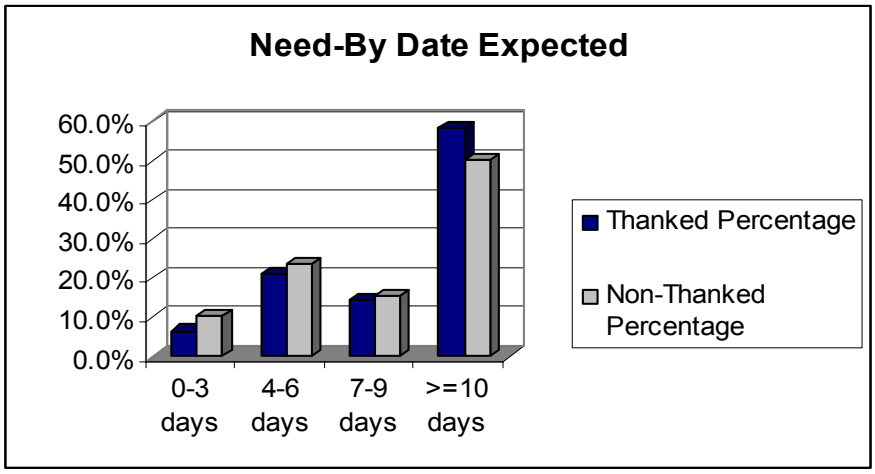
Need-By Dates and Answer Speed

Approximately half of all the users (421, or 51.9%) included a "need by" date for the expected timeframe of answers. This included 143 users who did not send thanks (56.8%) and 278 "thanking" users (49.8%).

- 96% of the "thanking" users (267) had their expected "needby" date either met or exceeded, while another 11 users or 4% did not receive their answers within the expected time frame but thanked the service anyway.

- 96.5% of "non-thanking" users (138) had their expected "needby" date met or exceeded, and 5 did not have their need-by date met.

We also found a willingness among the majority of both the "thanking" and "non-thanking" users to wait for answers. Among the users who sent "thanks," nearly three-quarters (202 users, or 72.7%) provided a "need-by date" of 7 days or longer. Similarly for the "non-thanking" users, more than three-fifths (94 users, or 65.7%) had listed a "need-by date" of 7 days or longer.



Users who did not send "thank you" messages were slightly more likely in general to request a faster need-by date, with 34.3% of the "non-thanking users" requesting an answer within six days, as compared to 27.4% of the "thanking" users. However as noted, we did not observe a difference in meeting of the users' expectations for answer speed, with approximately 96% of both the "thanking" and "non-thanking" users receiving answers either by or in advance of their specified "needby" date.

Speed of Thanks

We found the "thanking" users to be relatively quick to respond upon receipt of the answer to their question, generally sending a "thank you" response within days of receiving the answers.

- Nearly half of the "thank yous" (266 or 47.7%) were received on the same day the answer was sent.

- More than 3/4 of the "thanking" users had responded by the day after the answer was transmitted (432 or 77.4%)

By the third day, more than 4/5 of the users had sent in their "thank you" messages (479 or 85.8%). This suggests that information services might expect in most cases to see "thank you" responses within the first several days after the answer is sent, and that the likelihood of a thank-you response decreases as time passes.

"Thanks for Asking"

Did an expression of thanks for the question from the librarian to the user affect the thank you rate? We examined the answers by the librarians for use of phrases such as "thanks for asking" or "thank you for your question,"

- 89.4% of "thanked" librarians expressed variations on "thanks" or "thank you" in their answers.

- 90.1% of "non-thanked" librarians had included in their response a thanks to the user for asking the question.

We found no appreciable impact from the use of these formulations on the users' "thank you" rate.

Qualitative Results

How Users Expressed Thanks

We conducted qualitative content analysis on the "thank you" messages to study how the users themselves described quality factors, actions and outcomes, and socio-emotional factors related to their experience with the question-and-answer interaction.

In our initial results, we found that in about one-quarter of the messages, users did not describe any specific details about the answers they had received. These messages, which included 157 of 558 users' "thank yous" (28.1%), basically expressed a variant of "thanks" or "thank you" but did not otherwise provide further insights into the user's perceptions of quality factors, socio-emotional factors, actions or outcomes as a result of the answer.

Some positive affective indicators did appear within these non-specific messages such as multiple exclamation points ("Thanx a lot!!!!"), use of capital letters ("REALLY appreciated"), interjections ("WOW!"), magnifiers ("Thanks a hundredfold"), and person-directed comments ("bless you," "best of luck to you"). In other "non-detailed" messages, a lower-keyed, flatter affect is seen ("Thank you," "thanks for the info.")

While we noted the possibility that a further analysis might glean distinctions from these "non-detailed" messages through exploration of user affect in these textual indicators, this was not the focus of our research regarding user-identified quality factors, so we did not attempt to further analyze these 157 non-specific "thank you" messages. However, we note here the possibility that future researchers may consider analyzing these "non-detailed" responses by developing a taxonomy for textual affective content.

User-Identified Quality Factors in Digital Reference

For the remaining majority of "thank you" messages provided more detailed user feedback, we observed the frequency with which users mentioned specific quality factors in the answers they had received. We found 367 user comments on these answer quality factors among the 558 "thank you" messages. Observations were coded for the following answer quality factors:

Table 4: Coding for User-Identified Answer Quality Factors

CLARITY	Clarity of the answer - clear and understandable.
COMPLETENESS	Amount of information - thorough, comprehensive
EXPERTISE	Librarian's expertise, knowledge, and skill
HELPFULNESS	Helpfulness or usefulness in adding or providing value
INSTRUCTION	Teaching and explanation of new skills and techniques
PRECISION	Exactness and accuracy, well selected, and appropriate
SPEED	Quickness, rapidity, promptness, fast and timely

Helpfulness of the answer was mentioned by 148 users, about 1/4 of all the "thank you" responses and 40% of the answer quality factor observations. Users spoke of the answer as "helpful" or "useful," and also mentioned specific dimensions of the helpfulness in terms of "direction," "getting started," "suggestions," "strategies," "great leads," "verifies information," and "confirmation."

Expertise of the librarian was noted by 69 users, about 12.4% of all "thank you" responses and 18.8% of the "answer quality factor" responses. Users described the librarians' efforts as "exemplary," "professional," "literate," "invaluable help," "great research," and "excellent service." Interestingly, in addition to the praise for the librarian's skills and professionalism there were often defensive or apologetic formulations from the users – comments such as "apologies for my lack of web browsing skill," "I didn't look hard enough," "I didn't dig deep enough," and "I didn't allow enough time."

S*peed* of the answer was mentioned by 56 users, approximately 10% of all "thank you" responses and 15.3% of the "answer quality" comments. Users mentioned that the answer was "quick," "speedy," "fast," "prompt," "timely," and allowed them to move forward "without delay."

Precision of the answer in meeting needs was referred to by 44 users, approximately 8% of all "thank you" messages and 12% of the "answer quality" focused comments. Users described the answer as "perfect," "right on target," "just what I needed," and "exactly what I was looking for."

Completeness of the answer was noted by 32 users, about 5.7% of all "thank you" messages and 8.7% of the "answer quality" responses. Users mentioned that answers were "thorough," "exhaustive," "detailed," "in-depth," "very complete," and "a lot" of information.

Instruction as in "bibliographic instruction" (showing techniques and methods by which information was found) is a required element in all Internet Public Library answers, so it is interesting that this was one of the least mentioned answer quality elements. Instruction was mentioned by only 17 users, about 3% of all "thank you" responses and 4.6% of "answer quality" comments. Users described learning "how to find sources," "how to do a better search," "search terms," and the ability to "use this approach in future."

Clarity was the least mentioned quality factor. Though considered important by service providers, it is not something that users appeared to notice or mention. Only one user commented on how "accessible" an answer was.

User Actions and Outcomes as a Result of Digital Reference

The issue of "compliance" or whether the user actually follows up on the librarian's recommendations in an answer has not received much attention in library and information science research, although in other fields such as medicine it has been found that compliance with a doctor's prescriptions and recommendations is affected by the patient's satisfaction with the medical interview (Francis et al. 1969). We coded users' "thank you" messages for reported or intended *actions* in response to the librarian's answer, observing 209 comments about actions, intended actions, and outcomes.

Table 5: Coding for User-Reported Actions

ACTION	Intent to take an action based on the answer.
OUTCOME	Outcomes made possible as a result of the answer
RECOMMEND	Intent to recommend the information service to others
RETURN	Repeat user, or intent to return to ask another question

In 104 of the 558 "thank you" messages (18.6% or about one-fifth of all "thank yous"), users specifically described plans to take an *action* in response to the information received, such as reviewing resources, visiting the library, or following up on referrals. Users wrote of intentions to "follow up," "take it forward," and "get in touch" with referral sources or "go to the library" for access to local library resources and interlibrary loan services.

We also explored user-reported *outcomes* of the digital reference interactions, finding that 65 users reported specific outcomes in their "thank you" messages (11.6%). Users reported that they "found the book," "found the source," "got an A+," and were able to receive information from the librarians for a wide range of information needs from speeches, projects, reports, and teaching to "settling a family argument" and even baking better pies.

Some users also demonstrated their satisfaction with expressions of a *willingness to return* to ask another question, and plans to *recommend* the service to other users. Willingness to return has been utilized as a satisfaction measure in previous reference evaluation studies by Joan Durrance and others (Durrance, 1995; Ross & Nilsen, 2000; Janes, Hill & Rolfe, 2001). We coded 31 instances in which users expressed their *willingness to return* and ask another question (5.6%) and 9 instances in which users reported willingness to *recommend* the service to others (1.6%). Taken together, about 7% of all "thank you" users reported willingness to return or recommend the service to others. Users who were willing to return specifically described having added the site among their "favorites" or having "bookmarked" the site, or commented on how the service had once again "come through" for them.

Users' Comments on the Interpersonal Interaction

E-mail has been described as a communications medium with reduced social presence cues in which a user's awareness of another person in the interaction is reduced (Daft & Lengel, 1984). We explored this dynamic within the "thank you" messages by coding users' responses related to the librarian as a *person* within the digital reference interaction. We also coded users' socio-emotional comments related to the digital reference interaction – that is, comments having to do with the users' *feelings* in response to the answer or the interaction with the librarian. A total of 149 user comments touching upon some aspect of socio-emotional content were observed.

Table 6: Coding for User Socio-Emotional Comments

AFFECT	Feelings expressed in response to the answer
BOTHER	Concerns of "pestering" or "bothering" the librarian
LETKNOW	Expressed desire to keep in touch with the librarian
PERSON	Librarian's friendliness, courtesy, kindness, warmth

Of the 558 "thank you" messages, 80 users or about 14% of all the "thank yous" mentioned the librarian in the digital reference interaction, including comments that the librarian was "kind and thoughtful," "wonderful," "considerate," "an angel," and "a saint." The Internet Public Library is primarily staffed by volunteer librarians, and some of these users showed their awareness of this by directing comments to "you volunteers." Sixteen users in the sample (2.8%) also expressed an intention to *maintain communication* and an interpersonal connection with their librarians by "staying in touch" or "letting you know." Comments about the librarian represented more than half of all the socio-emotional comments.

In 8% of all the "thank yous," users expressed *affective* content in describing their feelings of being "very happy," "thrilled," "delighted," and "pleased." Users described the digital reference answers as "fascinating" and "interesting."

We also noted six cases in which users expressed their concern about *bothering* the librarian – a concern frequently encountered on the "face to face" reference desk. These users employed words such as "trouble," "hassle," "bother" and "nuisance" in referring to themselves and their digital reference questions.

Summary and Discussion

This exploratory study examined user perspectives on quality in e-mail digital reference service as indicated through the spontaneous, unsolicited feedback provided in user "thank you" messages. A codebook for user comments about digital reference quality factors, outcomes and actions, and socio-emotional factors as described by users in their "thank you" messages is provided for the use of researchers and institutions on our Web site at <http://www.ischool.washington.edu/thankyou/> and is also included in this report as *Appendix A*.

The results of our qualitative study of user comments within "thank you" messages suggest an active and goal-oriented focus among the users. The largest categories of user feedback referred to the *helpfulness or usefulness* of the answer received (26.5%) and the *actions* that users had taken or planned to take as a result of the information received (18.6%). Users also were more likely to say that their questions had *not* been asked as part of an academic assignment. Among the reasons users described for asking their questions were:

- *writing projects*: reports, essays, articles, books, novels or papers
- *speaking projects*: presenting, speaking, teaching
- *acquiring items*: purchasing or obtaining
- *dispute resolution*: settling an argument or a bet
- *helping others*: gathering information for family or friends
- *personal reasons*: reticence to share reasons, or "just curious"

Among digital reference quality factors, users gave tribute to the librarian as a *person* in the digital reference interaction (14.3%), and referred to the *expertise* of the librarian (12.4%). Users also described specific *outcomes* achieved as a result of the information provided (11.6%), and praised the *speed* of the answer (10%) and the *precision* of the answer in meeting their needs (7.9%). About 7% of the users also spoke of their *willingness to return or recommend* the service to others. The digital reference quality factors least mentioned by users were *completeness* of the answer (5.7%), *instruction* provided by the librarian (3%) and *clarity* of the answer (mentioned by only one user.) Six users also spoke of "*bothering*" the librarian and described themselves or their e-mail questions apologetically in terms of "trouble" and "nuisance."

Our analysis of the quantitative aspects of the "thanked" and "non-thanked" digital reference interactions found a key difference in the *number of words in the answer*. More than half of the thanked librarians (56.3%) used over 200 words in their answers as compared to only about one-third (35.7%) of the non-thanked librarians.

In terms of types of answers, we found that pre-written, standardized "*frequently asked question*" responses (FAQs) were the least likely type of answer for obtaining a "thank you" from users. Three-quarters of all FAQ answers in our study did *not* receive thanks from users. We observed that FAQs were one of the two largest answer groups among "non-thanked" questions but only the 19th ranked group among "thanked" questions – a particularly interesting finding when the commonplace usage of FAQ answers in busy digital reference services is considered. This finding raises questions about the use of FAQs in digital reference services and the utility of standardized responses in knowledgebases.

Regarding *answer speed,* we found that the slowest rate of answers was not, as might have been expected, for the "non-thanked" questions (57.5% answered within the first three days) but for the "thanked" questions (50.2% answered within the first three days.) Among the digital reference quality factors in "thank you" messages, *speed of the answer* was mentioned by 10% of users, which was fewer than the number of users who described the *helpfulness* of the answer, praised the librarian as a *person* in the interaction, or mentioned the *expertise* of the librarian.

Users also appeared to be willing to wait for their answers, with a majority of both "thanking" and "non-thanking" users listing an expected answer "*need-by date*" of one week or longer.

Users also appeared willing to cooperate voluntarily with describing their information needs using a detailed reference Web form. We found that more than twice as many users chose to send their questions through the reference Web form than via plain e-mail. We also observed that more than 60% of the Web form users completed six or more fields on the form, including non-required voluntary fields. In addition, the Web form users tended to use more words in formulating their questions than e-mail users. These findings suggest the value of providing users with the option of a detailed reference Web form as a means of assisting them to more fully express their information needs.

Conclusions and Recommendations

The Thank You Study raises intriguing questions about the results that might be found in extending this analysis to other digital reference services. We found an overall "thank you" rate of 15.9% for questions answered within the Internet Public Library in 2002. Would the result be similar in other digital reference services or in other types of libraries and institutions?

We also questioned whether there might be a greater "tendency to thank" among some users, and tentatively explored this possibility by examining users' initial questions for words and phrases such as "thank you" or "thanks in advance." We found that among the users who did not send back a subsequent "thank you" message, 39.7% had used some variant of "thanks" in their initial message. However among those who later sent "thank you" messages, 56.3% had also expressed appreciation in advance. This finding raises intriguing questions for future study of thanking patterns among digital reference users.

Another area that was briefly touched upon within our research was the role of users' expectations. We observed users' expected *need-by answer date* and found that for both the "thanking" and "non-thanking" users, 96% of those who had expressed a "need-by date" had their expectations met. A potentially useful follow-up study would be to explore users' unexpressed expectations – those not captured within the questions asked by the detailed Web form – and to explore the extent to which these expectations are met by digital reference services.

We encourage other researchers and institutions to adapt and experiment with analyzing their own users' "thank you" messages by employing the theoretical framework and research methodology provided here and at our University of Washington Thank You Study web site: <http://www.ischool.washington.edu/thankyou/>. This framework is intended for broader use, and there remains a great deal to be learned through the comparison of results across institutions and service types. Incorporating user feedback and user perspectives in the evaluation of digital reference services is a critical element in determining whether users' information needs have been met.

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Appendix A: Thank You Study Codebook

This codebook provides qualitative coding for examining transcripts of e-mail "thank you" messages received from users in response to digital reference interactions. The codes are divided into three general types: *Quality Factors, Actions & Outcomes*, and *Socio-Emotional Factors*.

CODES FOR QUALITY FACTORS

CLARITY
Comment on the clarity of the answer supplied, indicating that it addressed the user's information needs in a way that was clear and understandable.

COMPLETENESS
Comment on the completeness, thoroughness, comprehensiveness, depth, exhaustiveness, amount of information supplied in the answer, indicating that it fully addressed the information need.

EXPECTATIONS
Comment about the user's expectations of the service, relationship of expectations to service received.

EXPERTISE
Comment on the expertise in the answer supplied, indicating the user's impression that the librarian was expert, knowledgeable, and showed skill in meeting the information need.

HELPFULNESS
Comment on helpfulness or usefulness of the answer supplied, indicating that the answer elaborated, confirmed, assisted, supported, added or provided value in meeting the information need.

INSTRUCTION
Comment on the instruction, teaching, explanation of researching or resource use techniques provided in the answer, indicating that new skills or techniques were gained from the answer that will help the user in meeting future information needs.

NO DETAIL
User's entire response expresses appreciation or thanks with no other details supplied.

PRECISION
Comment on the precision, exactness, and accuracy of the answer supplied, indicating that selections and recommendations were on target, well selected, and appropriately tailored to the user's unique context and individual needs.

SPEED
Comment on the speed, quickness, rapidity, promptness of the answer supplied, indicating that it met the information need in a fast and timely manner.

CODES FOR ACTIONS & OUTCOMES

ACTION
Comment on intent to comply with or take action based on the answer provided such as following recommendations, purchasing a book, contacting an expert, visiting a recommended library or historical society.

OUTCOME
Comment on outcomes made possible as a result of the answer such as completing a report, getting an A, succeeding in an endeavor.

RECOMMEND
Comment on planning to recommend the information service to others, or having already recommended the service to others in the past.

RETURN
Comment on planning to return to ask another question of the information service in the future, or stating that this is not a first-time visit.

CODES FOR SOCIO-EMOTIONAL FACTORS

AFFECT
Comment expressing feelings and emotion in an affective response to the answer or the question negotiation process including feelings of happiness, unhappiness, delight, interest, enjoyment, anger, fun or other emotion.

BOTHER
Comment by the user apologizing for “pestering” or “bothering” the librarian or hoping the librarian did not feel that the user was a “nuisance.”

LETKNOW
Comment indicating the user’s interest in maintaining contact, that the user will "let you know," “keep you posted” and “stay in touch” about how things worked out.

PERSON
Comment on the person in the question negotiation interaction, indicating an appreciation for the librarian's friendliness, courtesy, kindness, warmth, or other comments showing appreciation for the other person in the interaction.

POLITENESS
Comments that were polite and non-specific on the answer, service or help received, such as a generalized thanks for the answer or thanks for the help.

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