

Reference Philosophy in a Mobile World: Evidence for Service Provision and Sustainability

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Abstract

This paper explores the intersection of technology and service philosophy by analyzing a recent transition between service models for text reference in a large academic library. It builds on two previous studies that analyzed text reference transcripts, bringing new data to existing metrics that analyze content, timing, and efficiency. In light of the service transition, new questions are asked of the data, exploring scenarios for consistency in service philosophy across a landscape of technological change.

Introduction

Text messaging—or Short Message Service (SMS)—is a growing medium for reference service in academic libraries, rapidly taking its place alongside in-person, email, and IM as a service option. While library users are most likely to text their libraries directly from mobile devices, the options for librarians to reply are many. These include vendor-produced web platforms as well as do-it-yourself solutions that typically incorporate mobile devices and/or SMS gateways. Because the basic parameters and outcomes of providing SMS reference services are still very much in formation, an examination of the impact that choice of service model may have on a service seems warranted.

This paper aims to explore the intersection of service models and service philosophy, with discus-

sion and analysis of SMS reference options that are informed by the goals and standards associated with the provision of high quality reference service. Specifically, we focus on a recent SMS service model transition at New York University, comparing data from the most recent year of service against data from earlier studies.¹ In this paper, we will discuss noteworthy changes to the service and describe the reasons that we selected a new model. Working from quantitative data gleaned from our transactions, we will examine questions related to content, timing, efficiency, and user satisfaction, and compare our two service models using these metrics. Finally, we will examine the impact of this type of transition on maintaining a consistent service philosophy even as technologies change.

Background

At New York University Libraries, we have offered a text reference service for about three years and have utilized two distinct service models and sets of technologies in its provision. The first model, in effect throughout our eighteen-month pilot phase, entailed the shared use of a single mobile device among participating librarians. The second model, currently in effect, also utilizes a dedicated mobile device but employs an SMS gateway to route messages to a web interface, namely, LibraryH3lp.² The same philosophical underpinnings have guided our selection of both

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models, beginning with the premise that SMS communication is no less viable an option for reference service than any other venue in which we are available to patrons. Both models have been implemented with the goals of minimizing barriers to user-interaction and meeting the same standards for quality that we set in all points of reference service.

In evaluating the first service model, we observed several advantages, not least of which were its low cost and ease in getting started. However, a formal analysis of data from the first year of service indicated disadvantages as well, especially from the point of view of service philosophy. For example, our data indicated an initial response time that was, on average, slower than desired.³ We ultimately attributed many of the service's shortcomings, both mechanical and philosophical, to the model itself, which demanded careful coordination. Accordingly, we undertook our eventual transition to LibraryH3lp with the idea that reconciling logistical challenges associated with the first model would in turn facilitate better service for our users. Because we are also using LibraryH3lp for our IM client—and are staffing both services independently from the physical reference desk—we have effectively streamlined our staffing model and significantly expanded our hours of service.

The two earlier studies of SMS transcripts at NYU demonstrated several intriguing trends about the service. First, interactions with users tended to occur over longer periods of time and to comprise a higher number of back and forth messages than we predicted. We also noted that users often texted us from locations with close proximity to physical reference desks. Perhaps most striking in these earlier studies was a demonstrated tolerance for interactions that were more asynchronous than we expected. We found no evidence that users only expected or were satisfied by instantaneous replies. Instead, users were frequently willing to carry on long-duration interactions that unfolded over hours or even an entire day. Indeed, nothing in our first year of data suggested that users opted to text us with short-answer questions only. Rather, questions were frequently as involved and challenging as elsewhere in our reference environment, and many users were content operating in this asynchronous mode.

These findings in many ways belied conventional wisdom about what text reference was or could be, as previous research had been focused on concerns

about the efficacy or appropriateness of the medium.⁴ In considering the evidence available in a relatively large set of transcripts—evidence gathered through the use of transcript coding and analysis employed by a number of high-profile virtual reference studies⁵—we were struck with the viability of this medium for delivering reference. However, we were also wary of any unintended consequences as we transitioned from a shared smartphone to an IM/SMS integrated service infrastructure. A follow-up transcript analysis would help us assess what we gained or lost in transition, while also providing new data to help us understand the intersection of our desired reference philosophy and the medium used to deliver service.

Methodology

We have saved transcripts from the SMS service since we began offering it. In the first service model, we forwarded the transcripts directly from the phone to a password-protected blog. During the second model, we used LibraryH3lp's internal transcript mechanism. In both cases, transactions were anonymized and then coded for analysis using a standardized question categorization scheme that resembles those used in other virtual reference studies. Among other data points, each transaction was coded for the following:

1. Time to first librarian response
2. Total duration of the SMS transaction
3. Number of total SMS events within each transaction
4. Type of question (i.e. reference, directional, ready reference)
5. Displays of appreciation and other conversational, non-content language.

We developed a glossary of terms when we published the results of one of our previous studies⁶ and are applying the same terminology here:

- **Event:** text message sent by either user or librarian
- **Transaction:** sum of all events related to one user query
- **SMS:** short message service, also known as texting

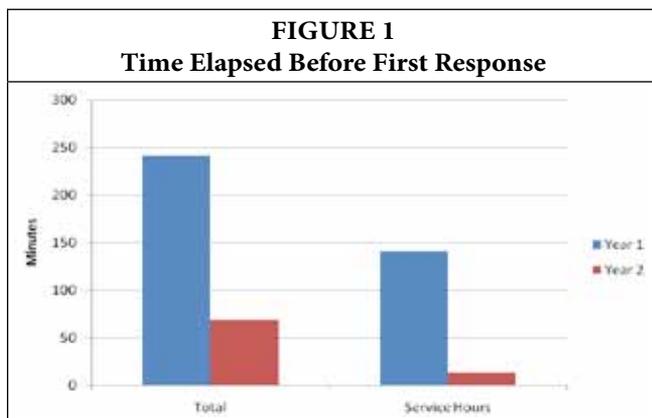
Data were entered into a spreadsheet with numerical values for processing and cross-tabulation purposes. Data for each service model were sorted in the following ways: all questions received, all questions received during service hours, all reference questions received, and all reference questions received during

service hours. The data for each service model were then compared. The comparisons are discussed below.

Results

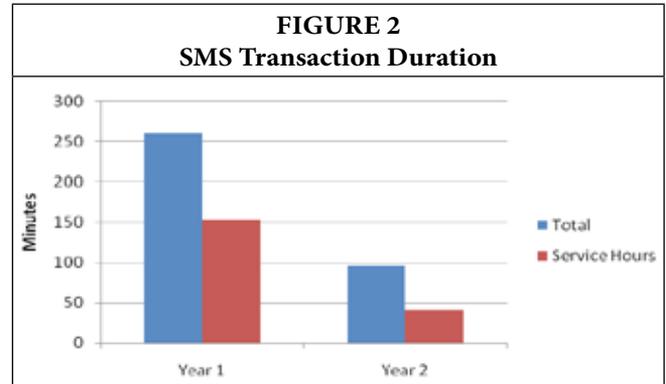
Analysis of the pilot service data (year one) includes 577 transactions, representing 628 questions, which were collected over a one-year period from June 2008 to May 2009. Analysis of the LibraryH3lp service data (year two) includes 664 transactions, representing 761 questions, which were collected over a one-year period from October 2009 to September 2010.

The time elapsed before first librarian response to an SMS query in the pilot service was on average 241.13 minutes, and that same time was on average 68.63 minutes for the LibraryH3lp SMS service, making the SMS response after the service change 3.5 times faster. When the numbers are controlled for just those transactions that occurred during service hours, the time elapsed before first librarian response dropped to 140.23 minutes for the pilot service and 13.14 for the LibraryH3lp service, making the SMS response after the service change about 10.7 times faster (fig.1).

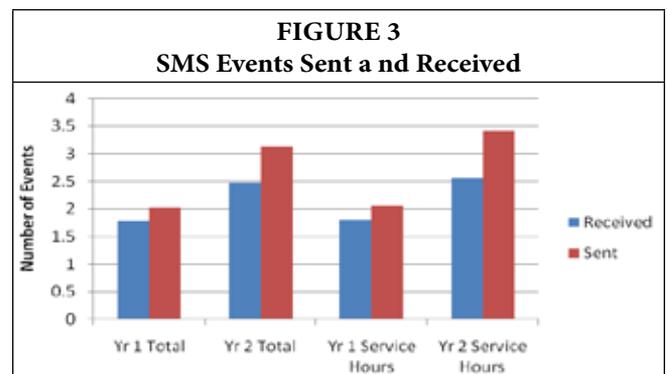


In the pilot service the average SMS service transaction was 260.48 minutes, and after the service transition the average SMS service transaction was 96.13 minutes, more than 2.7 times shorter in duration. When the numbers are controlled for just those transactions that occurred during service hours, the duration of pilot SMS transactions averaged 153 minutes, and the duration of LibraryH3lp SMS transactions averaged 40.86 minutes, more than 3.7 times shorter in duration (fig. 2).

During the pilot SMS service we received on average 1.78 text events per SMS transaction, and that

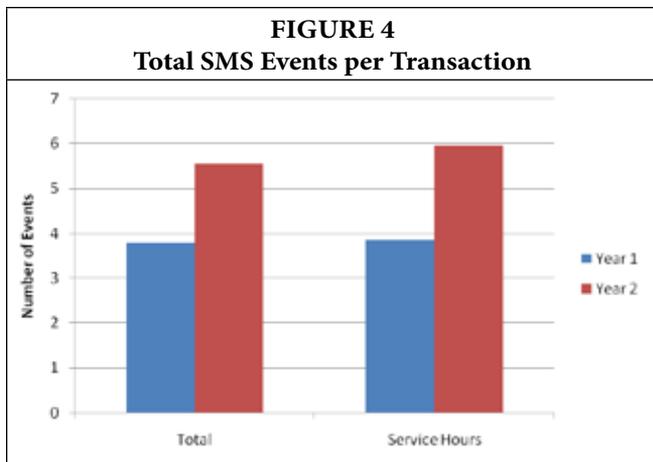


number rose slightly to 1.8 when controlled for service hours. During the LibraryH3lp SMS service we received on average 2.48 text events per SMS transaction, and that number rose again slightly to 2.57 when controlled for service hours. During the pilot SMS service we sent on average 2.02 text events per SMS transaction, and that number rose slightly to 2.07 when controlled for service hours. During the LibraryH3lp SMS service we sent on average 3.13 text events per SMS transaction, and that number rose again slightly to 3.42 when controlled for service hours (fig. 3).

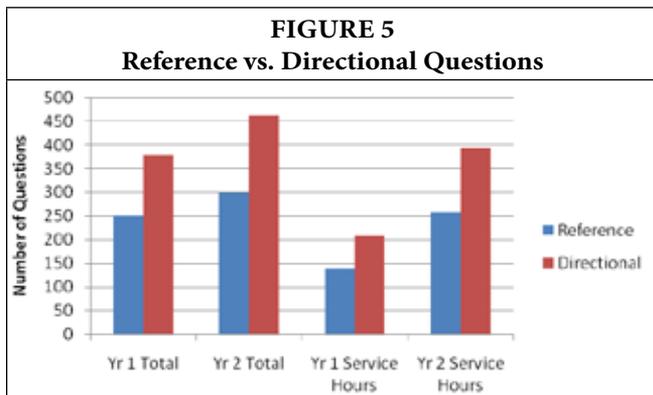


The total number of events per SMS transaction during the pilot service averaged 3.79, and the total number of events per SMS transaction during LibraryH3lp service averaged 5.54. When these numbers are controlled for service hours, the average number of events per transaction rose to 3.85 for the pilot service and 5.96 for the LibraryH3lp service (fig. 4).

During the year of pilot service we saw 251 reference questions and 379 directional questions, and in the year of LibraryH3lp service we saw 299 reference questions and 462 directional questions. While the service is growing, the relative number of reference

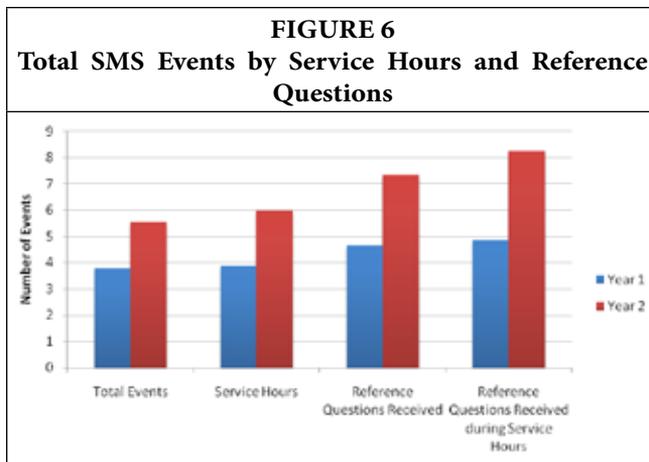


versus directional questions stayed the same at 60% directional and 40% reference. When controlled for service hours, that ratio still holds with 139 reference questions and 207 directional questions in the pilot service and 258 reference questions and 393 directional questions during the LibraryH3lp service (fig. 5).

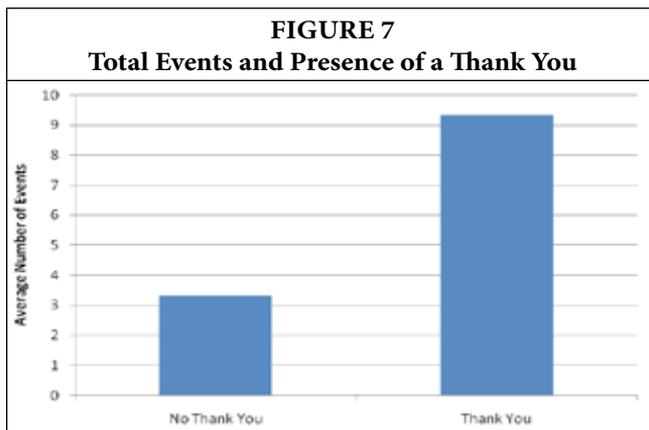


In the pilot service, reference questions during service hours contained 25% more total events when compared to all questions during service hours. In the LibraryH3lp service, reference questions contained 38% more total events when compared to all questions during service hours (fig. 6).

Additionally, we examined our data for transactions in which the user texted “thank you” in response to SMS service received. Response time for transactions where a thank you was received was on average three times faster than the response time for those transactions in which no thank you was received. This ratio holds true across both our pilot service data and our LibraryH3lp data even when controlled for service hours. The duration of transactions received during service hours was almost 24 minutes longer (56%)



for those questions in which we were thanked. There is also slightly more than three times the number of events exchanged in transactions when a thank you was received in our LibraryH3lp data. This is also seen in our pilot data in which 61% of transactions with four or more events yielded a thank you from users (fig. 7).



Discussion and Conclusion

Many results from the present study have confirmed our previous findings. While our patrons are more likely to thank us if we answer them quickly, our general characterization of the service remains somewhere between synchronous and asynchronous. Similarly consistent with earlier findings is the division between reference and directional questions, which hovers at 60% directional and 40% reference.

Turning to a discussion of the present results, we see that our transition to a web-based platform has shortened our time to first response. Our use of LibraryH3lp for SMS has enabled us to offer longer hours of service by collapsing the staffing pools for

SMS and IM into a single virtual reference desk. Indeed, this single desk has helped create a service environment in which we have increased our initial response time tenfold. The fact that the overall duration of SMS transactions has gotten shorter reinforces our observation that we have been able to give the service closer, more immediate attention with our second model.

Interestingly, despite a shorter overall transaction length, we have observed higher event density in SMS conversations, based on a 68% increase in the number of events per transaction. On a mechanical level, the use of a web interface by librarians has contributed to ease in responding to patron queries. As in the previous study, where we noticed a higher-than-expected number of total events per transaction, we see a sustained willingness on the part of users to engage in back-and-forth texting conversations. The faster response times that have come with our new model have likely enhanced this tolerance for multiple events. As in the first model, reference transactions tended to be more dense than directional ones, and this too increased in the second model.

We have operationalized the presence of a thank you in SMS transactions to indicate patron satisfaction with the service. In both studies, transactions that included expressions of gratitude also had initial response times that were three times shorter than transactions without a thank you. Similarly, we were more likely to be thanked in questions of longer total duration. Lastly, consistent across service models was an observation that transactions with a thank you contained, on average, 3.5 times as many events as those in which we were not thanked.

One of our initial concerns with the new model was the ability of librarians to recognize SMS queries and successfully discern them from IM questions. Because of this, we tried hard to encourage librarians to be mindful of the medium used and to try to condense their responses for maximum efficiency in SMS queries. However, we were surprised to find that there was no negative correlation in patron satisfaction to event-heavy transactions regardless of whether the librarian was aware that the question was SMS or not.

These data suggest users' willingness or tolerance for transactions that are longer and more conversational in nature. In contrast to some of the assumptions in the library literature that users would prefer this service medium only for short transactions, our data indicate

that reference service via SMS aligns closely with the services we offer elsewhere and that the same guiding reference philosophies we employ in our other services yield higher levels of user satisfactions.

SMS as a reference medium is still in its infancy, and these studies represent only one institution's experiences with aligning philosophy and service delivery options. While we have always aimed for high-quality reference services at NYU, it is our analysis of SMS transcripts during the past couple of years that has permitted us to fully embrace a venue-blind approach to service. Indeed the act of analyzing our SMS transactions may be one of the reasons for our improved service delivery in this medium; seeing firsthand how users approach the service has freed us to fully align our SMS service philosophy with our overall reference service philosophy. It would be useful in the future for other institutions where the staffing models differ (for example, those institutions that use consortial programs to provide service) or where a service-delivery philosophy is different (for example, only accepting short-answer queries from users) to analyze their data as well and look for commonalities and discrepancies.

Notes

1. Alexa Pearce, Scott Collard, and Kara Whatley, "Say What? An SMS Transcript Analysis at New York University," in *M-Libraries 2: A Virtual Library in Everyone's Pocket*, ed. Mohamed Ally and Gill Needham (London: Facet, 2010); Alexa Pearce, Scott Collard, and Kara Whatley, "SMS Reference: Myths, Markers, and Modalities," *Reference Services Review* 38, no.2 (2010): 250–263.
2. For details, see Pam Sessoms and Eric Sessoms, "LibraryH3lp: A New Flexible Chat Reference System," *Code4Lib Journal* 4 (2008), <http://journal.code4lib.org/articles/107>.
3. Pearce, Collard, and Whatley, "SMS Reference: Myths, Markers, and Modalities," 255.
4. J.B. Hill, Cherie Madarash Hill, and Dayne Sherman, "Text Messaging in an Academic Library: Integrating SMS into Digital Reference," *The Reference Librarian* 47, no.1 (2007): 17–29; Nicola Giles and Sue Grey-Smith, "Txting Librarians@ Curtin," Paper presented at the Information Online Conference, Sydney, Australia, February 1–3, 2005 <http://conferences.alia.org.au/online2005/papers/a12.pdf>; Beth Stahr, "SMS Library Reference Service Options," *Library Hi Tech News* 26, no. 3–4 (2009): 13–15; Laura Kohl and Maura Keating, "A Phone of One's Own: Texting at the Bryant University Reference Desk," *College & Research Li-*

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5. Sandra L. De Groote and others, “Quantifying Cooperation: Collaborative Digital Reference Service in the Large Academic Library,” *College and Research Libraries* 66, no.5 (2005): 436–455; Christina M. Desai and Stephanie J. Graves, “Cyberspace or Face-to-Face: The Teachable Moment and Changing Reference Mediums,” *Reference & User Services Quarterly* 47, no.4 (2008): 242–255; Wendy Diamond and Barbara Pease, “Digital Reference: A Case Study of Question Types in an Academic Library,” *Reference Services Review* 29, no.3 (2001): 210–218; Jo Kibbee, David Ward, and Wei Ma, “Virtual Service, Real Data: Results of a Pilot Study,” *Reference Services Review* 30, no.1 (2002): 25–36; Matthew R. Marsteller and Danianne Mizzy, “Exploring the Synchronous Digital Reference Interaction for Query Types, Question Negotiation, and Patron Response,” *Internet Reference Services Quarterly* 8, no.1–2 (2003): 149–165.

6. Pearce, Collard, and Whatley, “SMS Reference: Myths, Markers, and Modalities,” 251.

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