The Future of Digital Reference Services

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As part of their overall mission, libraries endeavor to provide information and other related reference services to their patrons. In the past several years, due to the increased demand by users for online reference, many libraries have begun to offer digital reference services. This has become necessary as libraries strive to offer virtual reference services to satisfy their patron’s needs. As technological advances continue, reference librarians are finding that many of their patrons are seeking expediency and assistance for their information needs. In this short paper, we will briefly discuss how reference librarians are embracing new online reference technologies, via the synchronous as well as asynchronous delivery, as they seek new ways and methods to meet the current and future information-seeking needs, of their online users.

In the past fifty years, there has been a rapid development or explosion in the various forms of digital communication, computers, and internet technologies (Luo, 2008, p.297). Early real-time chat reference services were hindered by the need for proprietary software, incompatible browsers, and internet communication limitations (Oberhelman, 2007, p.7).

Libraries have traditionally been thought of as fixed brick-and-mortar establishments. But, in recent years, with the advent of computer and mobile technologies, many libraries and research institutions have found it necessary to change and expand from a traditional walk-in print service to one which consists of a “diversified organization capable of providing digital reference services without the restrictions of geography and time” (Oberhelman, 2008, p. 297).

As Radford noted, since 1999, with the advent of new technologies, web-based virtual reference services or (VRS), have emerged as an essential addition to the traditional face-to-face or telephone reference encounter (2006, p. 1046).
It should therefore be no surprise to learn that a number of libraries and archives have been striving to address the need to go beyond their existing traditional library services. Parallel to this change has been an ever increasing demand by patrons whom find it more expedient and convenient to use the virtual medium, as opposed to the traditional face-to-face format, for their primary information needs (Connaway and Radford, 2011, p. 30).

In fact, this demand for virtual reference services has been aided by the rapid growth and development of online electronic resources which are expanding and becoming accessible beyond the walls of the physical library (Sims, 2002, p. 267).

The information-seeking user, whom at one time utilized the face-to-face format, is increasingly opting to seek information in an anonymous, distant, and in real-time format. As Oberhelman noted, “…reference service is constantly evolving as (librarians) adopt to new technologies…as new opportunities for reaching… patrons have emerged” (2007, p.7).

In fact, there is evidence which points to a rapid decline in the number of face-to-face reference desk transactions and, more generally, to less in-house use of academic libraries (Tenopir, 2001, p. 38). According to Tenopir, many librarians are beginning to explore alternative approaches for interacting with their users (Ibid, p. 38). And, libraries are making an increasing number of electronic resources available via remote access (Gray, 2000. p. 366).

So, what types of virtual digital reference services are libraries providing to their patrons? Current forms of virtual reference are available in both synchronous as well as asynchronous formats. There are several online synchronous services. They can include chat, text, or instant messaging (IM) and are in “real-time.” Examples include QuestionPoint (Images #1-3), Facebook chat (Image #4) and IM/chat (Images #5-6). Asynchronous reference services usually involve lag time. They include e-mail reference services, such as the iPL2 email reference
service (Images #7-8).

An example of asynchronous reference is when a user submits a question through e-mail and web form and the librarian responds at a later time (Ramos & Abrigo, 2011, p.1). While the asynchronous format (email reference) has been around for some time, the synchronous format is becoming increasingly popular due to user demand. Computer communications are synchronous when the participants are engaged in real time interaction with others whom are online simultaneously (Spencer and Hiltz, 2003, p. 1).

As noted by Radford, the synchronous format is increasingly becoming a common feature for both public and academic libraries (2006, p.1046). The web-based synchronous format enables users to request reference assistance online. Both the reference librarian and the patron enter the same online window or chat room, and type their comments to each other. As soon as the user clicks "enter" his text message appears immediately on the screen of all users who are in the "room." Messages appear in the order in which they were entered. An example is QuestionPoint.

The QuestionPoint reference service (Images #1-3) was an online activity assigned to my INFO740 class. This was a “real-time” online exchange where the patron was looking at his or her computer screen, waiting for an answer.

An issue experienced during this exercise was the limited time to effectively researching a question. Therefore, while I think this service has merit, I think this type of reference service would be best used if parameters were set to limit the librarian to one reference link and a referral to a local library.

IM/chat applications (Images #5-6), is a synchronous digital service. It is used by many libraries as it is a low-cost data exchange platform, and many library patrons appreciate its convenience.
This synchronous reference platform is advantageous to both libraries as well as library patrons as a method for wireless chat based reference, since most IM/chat applications are free.

The AOL Instant Messenger (AIM), MSN Messenger, and Yahoo! Messenger, are three examples of free instant messaging programs. Their advantage to both the library and patrons is that unlike commercial chat software programs, instant messaging programs are generally free of cost to both the library and the user.

An example of an IM activity was an exercise done by my Drexel University INFO740 class. The class was directed to choose from a selection of IM services. My 2-person student team chose the Facebook chat option (Image #4) as both of us had existing Facebook accounts.

Facebook has been described as a service which “provides the most promise and possibility as a reference utility” (Steiner, 2009, p. 4). Based on our class exercise, it appears that Facebook’s cost-free online chat feature may be a useful option for online reference. In fact, in recent findings from the PEW Internet Project, Rainie noted that “among internet users, over 69% are social networking site users” (2012, slide 4). In the future, Facebook may find it advantageous to exploit this resource by creating an application for chat forum file exchange.

Usage of a text/SMS service was another activity done by my Drexel University INFO740 class. A service, Mosio’s “Text a Librarian” was used (Images #8-9). Per Franz and Tucker, Mosio was designed specifically for libraries and library reference services (2011, p. 8). In this exercise, short answers and the inclusion of abbreviated urls via a (tinyurl.com) link worked best. As many users have smart-phones, this format will probably be used more frequently in the future. As Walsh noted,” giving library users the chance to text quick messages to the library…is an easy way to take advantage of text messaging“ (2009, p. 10).
In regard to virtual reference, Connaway and Radford noted that “virtual reference must grow and change to stay current in today’s information ecosphere” (2011, p.69). This observation appears to have merit. In fact, there are a number of statistics which support this trend. According to a 2011 Pew Research Report, approximately 47% of all American adults are seeking out news and information on their cell-phone, laptop, or tablet (Purcell et al., 2011, p. 2). In addition, 42% of mobile device owners report using their devices for weather updates and 51% report using the devices for local news (Purcell et al., 2011, p. 2).

Thus, regardless of the topic, it is apparent that the public is becoming increasingly comfortable with using their mobile devices for information retrieval. What are some potential ways to promote and improve virtual library services? According to a recent OCLC survey data, suggestions to improve VR services include: a) improve public awareness of VRS services, b) ensure that the services are convenient, c) ensure that the information provided is clear and understandable (Connaway and Radford, 2011, p. 69)

Another issue is whether the library can effectively meet the current and future needs of these virtual users. There are many important issues which will affect the ability to provide these virtual reference services. Four of these include: a) available budget, b) availability of services provided, c) an expanded role of librarians, and d) the changing nature of information-seeking users towards a reliance on remote access via mobile devices.

If users no longer need to belong to, or visit a local library, will the local library have enough funds to support the virtual reference services? For smaller libraries, this could limit available virtual reference hours, or force a cut in existing reference services.

A possible solution would be for smaller libraries to enter into a cooperative collaborative agreement or consortium with other local or regional libraries. This concept, cited by
numerous authors, would enable the smaller member libraries to pool resources while still being able to serve their online virtual patrons (Rozaklis and Macdonald, 2011, p.308; Lankes, 2008, p. 11; Pomerantz, 2006, p. 46). This would help alleviate shortages of staff, allow the member libraries to pool database costs, and help improve the quality of service.

An example of this cost-effective collaboration is the Collaborative Digital Reference Service of the Library of Congress and the 24/7 Reference consortium in Southern California, which merged into the OCLC QuestionPoint system (Janes, 2008, p. 9).

According to a 2011 iPL2 report, the following items represent key issues relating to the future of virtual digital reference: 1) multiple modes of reference represent a reference overlap and need to be integrated, 2) reference in the future will be even more of a collaborative process between librarians and information-seekers, 3) Online virtual reference chat sessions can be “real-time,” and fast paced, 4) Reference questions are becoming more complex and research intensive, 5) Librarians need to continue to experiment with new technologies (Abels, 2011, p. 289).

In regards to the iPL2 report, I agree with the need to create additional guidelines for online reference services. The iPL2 has a very useful published student training manual. The iPL2’s “Six mandatory elements” contains very useful guidelines for reference librarians (Drexel, n.d.). Perhaps these guidelines could be adopted worldwide. The iPL2’s Student Training Manual could be reviewed and incorporated by all online reference librarians as part of their standardized chat format.

It has been suggested that in order for libraries and their staff to effectively deal with the move to virtual reference services, they will need to “deliver services and collections in the virtual spaces that students and patrons inhabit” (Tallent, 2011, p. 84). Tallent also
suggested the idea of centralizing information requests: Reference queries or referrals could be directed or re-directed from a central portal (Tallent, 2011, p. 85).

There are several possibilities to expand this concept. Three examples include: 1) the expanded use of the iPL2 “resources by subject.” (http://www.ipl.org/div/subject/), 2) the expanded usage of dedicated widgets, search forms, and toolbars, and 3) usage of the LibX toolbar as a reference search engine (Tallent, 2011, p. 85).

In addition, online forums such as blogs, Facebook, and twitter are additional avenues for virtual reference usage. QR codes (Quick response codes) could be used by librarians to help direct users to online material (Ruleman, 2012, p.25).

So, what does the future of reference hold for digital reference services? There are undoubtedly a number of future challenges and issues which will impact virtual reference services. Three of these issues or needs are: a) a need for greater collaboration between individual libraries b) cost or staff limitations requiring libraries to place a time or page limit on online virtual reference services, and c) a need to devote more library staff and IT services to handle the increase in the volume of reference inquiries generated by mobile devices.

The literature cited suggests that the demand for online virtual reference services is increasing. As I see it, there appears to be a growing divide in the technical proficiency of users whom are attempting to access and retrieve online data. While many younger patrons appear to be comfortable with current technology, it appears that there are a number of older patrons whom feel “technologically challenged.” I believe it will continue be incumbent upon librarians to help educate the user regarding the usage, access, and retrieval of online reference services. This can be done via classes both within the local library and online.
Rebekah Kilzer, a Drexel University librarian, predicted that, “due to the changing environment, updates in technology, and other advances, will result in closer partnerships and more collaboration between libraries and other entities” (2011, p. 297). I agree. This process could also include library consolidations if libraries find it economically beneficial to merge resources.

I believe there will soon come a point where limits on staff, budgets, and technological infrastructure will necessitate that libraries and archives rethink individual branding and consider pooling their online resources and access. While it may be desirous for libraries to offer free online information, they are often self-limited by budgetary considerations. If individual brick and mortar libraries and archives are to effectively service their existing clientele, they may need to establish a limit for free online data and pose a mandatory fee for online access.

Future reference possibility #1: An innovative digital reference service: The Bryn Mawr College library, (Tri-County Library) offers students the service where they can access the college’s library catalog, and text the call number of a book to their phone (Hahn, 2008, p. 282). This type of reference service is an example of how virtual reference services have an almost unlimited potential for future expansion. If online reference today includes emailed attachments of PDF articles, tomorrow it could be e-books or other data sent directly to the users smart media device.

Future reference possibility #2: My little two year old cousin was observed watching a cartoon on his grandmothers iphone. He represents our future generation and is already becoming accustomed to hand-held devices for information retrieval. He is the future user who will want information on demand.

Based on the published literature, it appears that the current and future usage of mobile devices for m-learning will probably transform how users interact with librarians, professors, and data. As Ruleman noted, “the exponential growth of ownership and use of mobile devices has
implications for libraries” (2012, p. 28). Indeed, as Hahn observed, there are endless possibilities, including both “technological and sociological implications” for the usage of m-learning (2008, p. 283). While future implications and the societal impact of m-learning is beyond the scope of this paper, there will undoubtedly be case studies done on this topic in the near future.

Regardless of the patron’s age, geographic location, or informational need, we are already reaching the point as a society where users are actively seeking access to information on a minute by minute basis. Walsh (quoting Hahn) observed, “For our highly scheduled… pressured students, there exists a need for anytime, anywhere information, structured information that is organized and accessible…”(2009, p. 10; Hahn, 2008, p. 273).

This “real-time” global need for information, on a 24 hour/daily basis, appears to be the driving force behind the rush by consumers to embrace virtual digital reference services. In my opinion, it is incumbent upon librarians to seek ways to satisfy this growing demand for information as they work to identify and meet the information-seeking needs of an evolving and learning patron.
Images:

Image #1

Example of QuestionPoint

Source:
http://www.questionpoint.org/support/documentation/gettingstarted/gs_patrons.html#chatses

Image #2

Example of QuestionPoint

Source:
http://www.questionpoint.org/support/documentation/gettingstarted/questionpoint_overview.pdf
Image #3

Example of QuestionPoint

Source: http://questionpoint.blogs.com/questionpoint_247_referen/WindowsLiveWriter/active%20questions.png
Example of Facebook chat


Example of IM/chat
Image #6

Example of IM/Chat

Source: http://www.slideshare.net/twissbrooks/charleston2010-atbforupload  
(slide #5)

![IM/Chat Reference](http://librarybrolo.com/webchat/)

![Jing](http://www.techsmith.com/jing/)

— Embrace technology and be where your patrons are

<table>
<thead>
<tr>
<th>IM/Chat reference</th>
<th>Jing (make quick demos and videos and embed into chat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>librarybrolo.com/webchat</td>
<td><a href="http://www.techsmith.com/jing/">http://www.techsmith.com/jing/</a></td>
</tr>
</tbody>
</table>

Image #7

Example of iPL2


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**Ready Reference Questions**

Hello from the ipl2,

Thank you for your question about who played the Ivan Brothers in the Capital One commercial which aired during the 2010 NCAA Final Four men’s basketball games. I was pleased to search for the answer to this interesting question.

The answer to your question is Peter Cornell and Andrew Zahn.

You can find the answer to this question by viewing the photograph available through Peter Cornell’s profile on the website for the Internet Movie Database (“IMDB.com”) (link below). This photograph is of the Ivan Brothers and names the actors.

http://www.imdb.com/media/rm512008072/nm2880573
Example of iPL2


Research Questions

Greetings from the ipl2!
Thank you for your question about ways to teach video production to students.
I have found a few sources that I hope will answer your question.
1) The website “Kids’ Vid: Video Production for Students” offers various resources for teachers on how to integrate video production into a curriculum:


Example of Mosio’s “Text a Librarian”

Example of Mosio’s “Text a Librarian”

Source: James Gross, Drexel University, INFO740 course exercise.
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Drexel’s Academic Honesty Statement

For the Digital Reference Paper Assignment:

I certify that:
  • This paper is entirely my own work.
  • I have not quoted the words of any other person from a printed source or a website without indicating what has been quoted and providing an appropriate citation.
  • I have not submitted this paper / project to satisfy the requirements of any other course.

Signature: _____James Gross_____________________
Date: ____________Nov 28, 2012_________________

Professor Miller’s instructions: For your signature, you may use an electronic signature or you may simply type your name (and please add the date).