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Virtual Service

For Building a Successful Customer-service Culture: A guide for Library and Information Managers

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ABSTRACT

Introduction

Virtual service is a bit of an oxymoron. After all, an organization either provides service to customers or not. It may be good service or bad, but it is still service. Of course the reason we qualify any term with digital, virtual, or electronic is to distinguish it from what many libraries have done in a physical space, or within the confines of geography. Some say the ultimate success of a "virtual" service, be it reference, or resource access is to drop the qualifier and simply call it reference, or service. However, I am not so sure.

Certainly, digital reference is simply just a type of reference, and virtual service is only part of a much larger concept of service. However, there is some analytical power to making the distinction to what we do on the Internet and what we do in person. For one, we are relative novices at the online world (as are the vast majority of organizations). Secondly, things are simply different online. There are very different skill sets for patrons and librarians for one. Concepts of identity and privacy are radically different in the online environment as well.

Ultimately it is worthwhile to discuss virtual service, with the understanding, that the ultimate success of any virtual service is its fit into the overall goals of the organization, virtual or not. In this chapter the author will discuss how electronic networks, with a special emphasis on the Internet and the world wide web, can be used to create a "virtual library branch" that better serves customers in cyberspace.

Defining Virtual Service

For the purposes of this chapter let's define virtual services as a means of connecting the library to the public via an electronic network. While it might be easier to simply say "through the Internet," there is a wide range of electronic networks, from local area networks connecting workstations and printers, to wide area networks linking organizations around the globe. While this chapter, and the literature at large, will focus on the Internet, it is important to understand that services may be offered within an organization, through a so-called intranet. These services share much in common with Internet services, often utilizing the same software, but have marked differences. Intranet's are defined by a greater degree of control (i.e., an organization can mandate a given piece of software, or a certain degree of training) and knowledge of the user population (i.e., knowing who has logged into a service, or knowing the exact computing platform of an organizational member). While this chapter will concentrate on Internet services to the general public (or at least a population over which the library has low knowledge or control), where appropriate the author will point out intranet possibilities.

It is also worth a quick discussion of the term service on its own. The author adopts a simplified definition of a library. A library is an organization that provides a user a collection of materials and

a set of services. These services are often tied to the collection, but may well exist in absence of a collection. We'll adopt the term "coupling" to describe how closely tied a service is to a collection or another service (tightly coupled), or how independent, or operating in the absence of knowledge of a collection or service (loosely coupled) a service is. While at first glance it may seem the objective would be to tightly couple services and collections, this is not always the case. A few scenarios may be useful.

Scenario 1: Tightly Coupled Services

A library has a strong collection of local images, pictures and slides. In order to make this collection more accessible to local patrons, as well as scholars and interested users worldwide, the library digitizes the images. The digitized images are placed in a database and the database linked to a web server connected to the Internet. Now with a simple URL, users can browse and search the images. The library adds a virtual service that allows an Internet user to pay a fee and receive high-quality prints of the images as well. Finally, due to the interest in the collection, the library begins to field questions from Internet users via e-mail. This digital reference service helps users find relevant images, answers questions concerning copyright, and uses repeating questions to add a "Frequently Asked Questions" area to the web site as well as highlighting popular images.

Clearly these services (digitization, web access, print on request, digital reference) are tightly coupled. Any of the services become quickly irrelevant if the original collection were to go away. However, many services are much more loosely coupled.

Scenario 2: Loosely Coupled Services

A library begins a list of useful web links on its web page. At first the set of links is organized as a simple list. Later the list is divided into subject headings (science, genealogy, local interest, travel, etc..). Abstracts are then added to links. Finally the library purchases web indexing software, and the links are actually remotely indexed over the Internet, and patrons can search a special database of selected web sites.

While these services are no less technically involved than the first scenario, it represents loosely coupled services. The sites being linked to, and later indexed are most likely unaware of the service being offered to library patrons. Indeed, the indexed services do not have to do anything for the service. Web search engines are examples of loosely couple web services. Compare these to union catalogs where tightly integrated technologies such as Z39.50 must be employed. As a general rule the tighter the coupling the service, the more resources needed to maintain and grow the services. Loosely coupled services, virtual or otherwise, are often fast to implement and more scalable.

And so now, with a fuller understanding of virtual services as being delivered through an electronic network along a continuum from loosely to tightly coupled, we can begin to explore how virtual services can be used to build a successful customer-centered culture.

Advantages and Disadvantages of the Virtual Environment

As we proceed with our look at how to offer virtual services we must realize that for every positive of using the Internet to interact with customers, there is a negative. The trick is to balance the two to maximize the usefulness of the service to customers, while upholding the needs of the organization. For example, while users would love us to digitize large portions of our collections for access via the Internet (certainly a positive for the users) the library can neither afford to provide such a service, or in doing so would violate licensing or copyright restrictions. The art of

virtual service, where the users are potentially enormous, and the information environment that we're entering into is immense, is finding what a library can do most effectively for the customer to promote the mission of the library. It is quite possible, that some services, while viable from a resource and economic perspective may still be inadvisable in view of the mission.

Reaching Customers through the Web

A webpage is not a digital library. A web page is a virtual service, but is not sufficient to be good service. These may be obvious statements to some, but many libraries and organizations use the web as a virtual library or as a poor cousin to real library service believing that only services in the physical library count as real. This bias towards physical, or traditional library service as real, and the web or network services as nice additions is dangerous. It leads to virtual services that both frustrate online users as well as diverting resources from other library activities. Simply stated, either the web is part of the services you offer, with the same level of commitment, or it is a liability.

It may seem heresy to suggest in these Internet days, not to have a website (particularly in a chapter about virtual services), but a rule of thumb is that a bad website is worse than no website at all. A website that leads to user frustration, presents the library in a bad light, or represents all that the library is against (bad organization, untimely information, lacking a human face) will do more damage to a library than simply concentrating on getting customers in the door and making sure they are satisfied with traditional services.

So, this leads to two questions: why is it worth building a web site, and what makes a good website anyway.

<u>Why the Web</u>

There are of course a multitude of reasons to go to the web. Some are customer driven (providing information after hours, providing remote access to online materials) and some are purely organizational (the parent institution wants one, or some information is only provided via the web). Let me outline key forces and needs that can be met on the web.

Remote Access to Users

Clearly a primary advantage of the web is providing access to digital information to customers outside the physical confines of the library. It is well known in information science that the resources that customers turn to the most are not predicated on quality or reputation, but convenience. Scholarly studies have even shown that academics will cite resources in their office first, the resources available to them in their physical department second, and those in an academic library a distance third. The promise of the web is to put the library "into the office" or convenient proximity of the customer when they need the information.

Certainly not all the resources of a library can be sent down a modem, but at the very least their existence can be made plain and obvious. The point is to put the library "in the face" of the user. This is more than simply putting a website on the Internet, it involves placement of the site. How close is the site to a user when they first bring up their web browsers? Is it their home page? In an academic setting is it linked from the top page of the college or university? Is it a simple URL that users can remember? Never underestimate the power of a good URL. For example to get to my local public library I must type in the following URL: http://www.ocpl.lib.ny.us/. However to get to the Boston Public Library it is http://www.bpl.org. Also, how will users know this URL? Do they have bookmarks? Pamphlets? Newsletters? E-Mail newsletters? The point is to make the library truly ever present.

As stated earlier, with every positive is a potential for substantial negatives. One of the factors that must be considered for remote access, is a potential expansion in the population you are serving. Like it or not, the web is a world-wide phenomena. Once you have a service on the web, anyone can get to…unless you deliberately prevent access. Preventing access can be through some form of IP filtering (restricting access based on the Internet address of a user's computer), username and password or some existing means of access restriction such as a library card or student ID.

Expansion of Service in Time

When the Library of Congress first put their catalog online (way back in the days of Gopher) they were open 9-5 eastern standard time. I'm not making this up. While this may have been to provide quick support if a server went down, or if a patron needed assistance, it was still very odd. The Internet is about having information anytime, anywhere. Users expect to have web servers waiting for them, not the other way around. Certainly in the case of providing remote access to digital information, there is little reason not to provide access 24 hours a day. In many libraries customers can put hold on items, search the catalog and databases, and access web-based applications regardless of the time of day. This allows the library to serve its customers beyond the limitations of staffing and security.

Unified Interface

The web was revolutionary. What first caught people's attention was the embedding of images in text. The second thing that captured our imagination was hyper linking. Yet, the true revolution lay in the web's expandability. Unlike previous Internet protocols, the HyperText Transfer Protocol (HTTP) built a single protocol that could transmit text, images, video, sound, and software. In essence, if the browser could read it, and the server could send it, you could do it via the web. This may seem like a very technical view, web as general transport layer, but don't underestimate the power of a good protocol. Because the web (once again, more technically, HTTP) could ship almost any binary information it was quickly adopted by software developers and service managers as a platform independent interface.

In the old days software developers would have to develop a piece of software two to three times, once for each computing platform it was going to run on. So one CD-ROM search interface program was developed for Windows, one for Mac, and one for the mainframes or minicomputers still very much present in libraries today. Not only would they have to develop the end-user software, often they would have to do special development if the application was networked in some way (one for Z39.50, one for telnet access, etc…). With the web, these development problems were quickly rectified. Now developers could write one piece of software for a server, and just assume a web client could handle the end-user interface. Not only that, but the interface was often as simple as HTML text files that could be altered in seconds.

This lead to the wide-scale adoption of the web as an application environment. CD-ROMs were costly not only to libraries, but vendors as well. A vendor had to create a separate CD for each platform, then had the added cost of producing and shipping a physical product, and added to that was the cost to man help-desks and provide technical support for the product. With the web: program it on one server, and let the libraries access the product through a web browser the library supplied and supported. Also, on the web there were no space limitations that were common with CD's. The end result is that today vendors who used to sell CD's are making a rapid transition to web based applications.

Libraries can take advantage of this transition as well. The web site can be more than simply a place to post hours and programming, it can become a unifying interface for other library services. Now the hundreds of electronic resources the library provides can be linked from a central web page. More over, the library can provide value additions to this access, providing customers with help in selecting the best online source, online tutorials or, as will be discussed later, real-time assistance. What's more, this need not only be a unified interface for online users, it can provide some valuable coordination of access for in-library use as well. By making the same interfaces available on the library's intranet the web can become a central point for disseminating news, maps and pathfinders. Just as in-library users used to see the search interface of the online catalog, now they can see the library's home page, giving the library an opportunity to present the user a larger view of what the library does. The web allows a library to more tightly couple the diverse offerings of electronic information it offers to customers.

A Diversity of Unification

There is another unique situation created by the migration of information to a web interface. The web interface need not be exactly the same for all users. I know this seems contrary to my previous point, but stick with me. What the web has done is disconnect the interface from the underlying information. The web does not expose the database a user is searching, nor does it prescribe exactly how information is displayed in the browser. We've all experienced the fact that a page can look one way in Netscape, and quite a different way in Internet Explorer. This can work for you.

Once you have created a single access point to electronic resources, you can have multiple views of that access point. So you have a graphic intensive interface within the library where you know you have high-powered computers and fast network access, and stripped down interface for the outside world, or an image free interface for the blind, or even foreign language instructions and tutorials for target language groups. You are still providing a single point of entry for customers, but you take the differences of your customers into account. I call this approach the "one-stop, any-stop" approach.

The concept is that the user only has to go to one interface (one web page) to get to all the services your library offers, but that page may exist in different forms (or on different servers) for different user communities. So, a library can create an expert interface to the online catalog showing all the indexed fields and Boolean operators. They can also create a novice interface with one big search box and some online help. Both pages will search the same catalog (the one stop), but users can choose their preferred interface (any stop).

Branding of Information

The unified, one-stop, any-stop approach to interfaces through the web also leads to an important new ability of the library, to brand access to electronic resources. Access to information is a rather invisible entity - so invisible we take it for granted. When a customer is in a library accessing information there is little doubt as to who provided that access. The chair the customer sits on, the computer in front of them, all of these are branded as part of the library because of the constant physical reminders as to where the user is. Online, these obvious cues are gone, and all the user is left with is the web page on their screen.

Often in today's web based interfaces libraries provide web access to online information by simply linking the user from the library's web server to a vendor's server. The user is left with a very valuable resource that is only identifiable from the branding of the vendor. Add to this the ability of the user to bookmark resources, and the user will often use the resource with little

thought to who is paying for this access, or any other role the library played in the access. There are no walls to remind the customer who provided the access.

As discussed before, the web can be the solution. HTML pages are easily modified with the logo of the library, or a link back to the library home page. Because modifying web interfaces is relatively easy, vendors are normally very open to making modifications indicating the library's role in the transaction. The point is to not only brand the information with the vendor who has compiled the resource (the visible portion of a resource), but with the library that is providing access (the often invisible contribution of a library).

So What Makes a Good Web Service Anyway?

There are many books and websites devoted to what makes good websites. They explore aspects of the web including: aesthetics and design; response time; and proper HTML coding. I will not try and summarize all the advice here. Rather I will concentrate on what makes a good *library* web. Certainly those things that make a good web site apply, such as pleasing design, and responsive load times, but I feel there are unique aspects to a library on the web that must be maintained. These aspects are the hallmark of any good library service, simply transferred to the web.

Interactive

The point of a library is not simply to collect a set of information and warehouse it in some structure often with columns. Rather a library, as we all know, is a living interactive information provider in the community it serves. The web site of a library should be no different. People come into the physical library to interact with information, not be confronted with it. The same should hold true on the web. Rather than having a simple site with hours of operation and a phone number, give the users some means of interacting. Let them search the catalog or databases. Give them some collection of data they can use in research. Don't ask them to change medium (web to phone) to accommodate the library, rather meet the user at the point of service (a discussion that will be continued as we explore digital reference further along). Having a face on the Internet is more than a logo and a list of hours…that would be like having the patrons use the library through a mail slot in the door ("push in your requests and we'll push out the answers").

The point is to make the web site a destination, not simply another form of placard outside the library walls. A library website should not be a poster or brochure, but more of a branch. It should have services and collections that can be used. Anything less is a bad reflection on the library, and a very loosely coupled service to the physical services. If you are going to require the user to come to your physical facility to get information (which makes sense with special collections), at least give the user a strong reason to get out of their office (home, car, etc…) and come in to your library.

Representative of the Library Collection and Services

If your library offers reference services, readers' advisory, an extensive genealogy collection and a great popular fiction collection, why does your website simply list the catalog? Use the web to showcase your good work, and more importantly, your good librarians. Put a human face on the library's presence in cyberspace. If you are not ready for a real-time reference service, how about a collection of reference sources…compiled by an information professional. Take a theme you know will be important to your community (holidays, issues under discussion, a local election) and craft part of your web to lead people through the catalog. Demonstrate that a library is more than a collection, but a set of experts to make sense of all of the information. Have your librarians sign the pages they put online. Let the customer know a real person is working on this web.

Another way to represent the spectrum of services you have is not to try and cram all of those services onto a single web site, but a unique site for each customer type. The public library of Charlotte & Mecklenburg County (http://www.plcmc.lib.nc.us/) lists no less than 9 unique websites it hosts for special customer types. From business to health, to kids they all have a home that looks and feels like home.

Maintained and Updated

A great library should have a great website. If you don't have a great library, feel free to save money on your web site. Of course, we all aspire to being great libraries, don't let the web drag you down. For a number of libraries that are obsessed with an inviting physical facility and excellent desk service, the web simply becomes a far distant second in terms of priorities. I cannot tell you the number of library websites I've been to that list events that occurred in the past. News releases from over three months ago are litter, not information. The point is that libraries are in the business of informing their communities, we pride ourselves on our currency of knowledge and skills - an outdated website in the information medium of the web is a clear statement that we are not practicing what we preach. Every page should have an update date on the bottom, and it should be reviewed daily for updates.

This is not a call for a full-time webmaster. Actually the best way to keep a site updated and current is to make it part of all librarians job responsibilities. The reference librarians should monitor and regularly update sections on ready-reference resources. The technical service librarian should be providing up to the minute information on the catalog and making sure online help is effective. By distributing the task of web development not only does it lower the library investment, it builds ownership of the web on the part of the staff and leads to a better web presence.

Well Organized and Searchable

Just as out of date information is a bad reflection on library service, so is bad organization. If your customers get lost on the library website, they will never come back. How you organize information on the web, what is commonly called information architecture, is a rapidly developing field. It is more than simply putting the Dewey classes on the home page, the web should be organized by how the customer is looking for information. This means that putting reference services under the heading "Adult Services" will often be misleading to the average customer (not to mention that adult services often have a VERY different context on the Internet). Use the language of the customer. The web is a very different world than that of traditional library cataloging. The web is meant to be flexible, with frequent changes and rapid evolution.

In addition to making the website browsable with a clear and common language classification system, it must be searchable. Today a search function is simply a requirement of a web. Not simply a search of the catalog (that is often segregated to another search), but of all the materials on the site (help files, welcomes from the director, digitized resources).

The point is to make the web presence not simply an information outlet for the library, but a tightly coupled service for the customer. If users can pay bills online, order a book from Amazon and get groceries with the click of a mouse, they had better be able to get at your services just as easily. The web really needs to become a branch library. That is not to say that all Internet services need to involve the web.

Other Virtual Services Related to the Internet

Calling the Internet the web is often convenient, but is simply wrong. The Internet is a set of computers connected together with a common networking protocol, IP. It existed long before the web, and still has many services that cannot be accessed via the web (defined by the protocol HTTP). The recent attention to music sharing services such as Napster and Morpheus is quick proof of this. A user could not use Napster with a web browser. Rather they needed to download a special program that allows them to share files with other users. Libraries tend to concentrate on web sites because they have a far reach (almost everyone with an Internet connection has a web browser) and their relative simplicity to mount (the software comes shrink wrapped or already on many computers).

However, there are other virtual services that a library can offer. E-Mail is an obvious example. While a customer can access e-mail through the web, the infrastructure for the service is completely independent of the web. A library can offer e-mail accounts to its customers. While that may seem outside the mission of a library, it is still an invaluable means to access information, and the library has a vital role to play in providing a stable e-mail address as customer may charge schools, Internet providers or jobs and loose other e-mail addresses.

Libraries can offer chat services, or bulletin boards. These services offer the closest analog to the library's role as social center or information commons for a community. Users can express opinions about issues in the community, or even information specific activities (i.e., customers reviewing books on the library's catalog).

Libraries can also offer networked services to non-computer users. Personal digital assistants such as Palm Pilot devices have become wide spread. The library can provide e-books and current events to be downloaded to PDA's in wireless networks for example. The point is to be where the users are.

Reaching Customers through Digital Reference

As stated before a library can be seen as a collection of collections and services, and one of the invaluable resources in a library setting is a librarian. Trained information professionals constitute a unique source of information and set the library apart from every other information provider. Yet, this expertise and unique human-touch is often lacking in the virtual environment. How can a library network presence be truly representative of the library collection and services if reference is considered a "physical only" activity?

The recognition of this has lead to an explosion in activity concerning digital or virtual reference services. For the purposes of this paper, digital reference is defined as human-intermediated assistance offered to users through the Internet. Today, libraries are offering human-intermediated reference over the Internet at an increasing rate. Research by Janes and his colleagues (Janes, 2000) found that 45 percent of academic libraries and 12.8 percent of public libraries offer some type of digital reference service. Stephen Francoeur (2001: 190) reports that as of April 2001 he was able to identify, "a total of 272 libraries [that] were being served by a chat reference service, 210 of which (77 percent) were served by one of eight chat reference consortia." However, digital reference services are often ad hoc and experimental. Janes and McClure (1999) found that for quick factual questions, librarians using only the Web answered a sample of questions as well as did those using only print sources. Many libraries conduct digital reference service in addition to existing obligations with little sense of the scale of such work or its strategic importance to the library.

The Multiple Faces of Digital Reference

Digital has many forms and names. Some refer to it as virtual reference, e-reference, electronic reference, real-time reference, chat reference, e-mail reference, but it comes down to a simple concept: put reference librarians at the point of need. More often these days, that point of need is not at a desk, but rather within electronic information sources such as an online database or catalog. That means that even if the customer is located in a physical library facility, they may still need assistance at a computer. Asking reference questions "on the computer" allows the user to keep their computer, keep their place in an online resource, keep their train of thought, and still get expert guidance.

The type of guidance is very dependent on the context of service. Let us take the example of the patron in the library. A customer is having difficulty finding a given book. They have the author's last name, and a subject, but not the exact title of the book. Unfamiliar with the catalog, and indeed fielded searching, they need help. To walk over the reference desk would be to loose the computer they are on, their existing search results, and the delay in finding their way to a reference desk. Instead, the user clicks an "Ask a Librarian" button in the catalog, and the user enters into a real-time text chat with a librarian. After a quick discussion, the librarian actually shares the screen of the user and walks the customer through a search process, highlighting features of the catalog, and even printing the results of the search for the customer. This librarian may well have been sitting physically behind the customer, or half a world away.

Software is available today for libraries to implement the digital reference system describe above. It requires a very fast network connection and having screen sharing software loaded on both the librarian's and patrons computers (making it very operating system dependent). However, it is the perfect application for an intranet. Academic libraries and special libraries that work internal to an organization can build tightly coupled digital reference services that provide reference experts at point of need.

This is not to say that digital reference only works in intranet or intra-organizational contexts. Digital reference has become wide-spread at least in the US and Canada in the public library sector. With software as simple as e-mail libraries can begin to provide a "human face" to the library's cyberspace presence. Years of practice have shown that it is important to have human-to-human communication in order to help users identify information needs and find the appropriate resources to answer those needs (Mardikian and Kesselman, 1995). According to the Library and Information Technology Association (LITA), a division of the American Library Association, putting a human face on the virtual (digital) library is a key need (LITA, 1999).

"It's time to put a human face on the virtual library. What's the crucial factor in the success of the nonvirtual library? The people who work there and serve the user! What do libraries emphasize on their Web sites? Resources, collections, facts with no human guidance or presence! On many library Web sites, the user is hard-pressed to identify the staff, whose names, if they're there, are five levels down. The human factor is still important."

The question in the LIS community is no longer whether to provide reference services in a digital environment, or whether to provide human intermediation services on the Internet, but rather how to best provide such services.

<u>Means of Providing Digital Reference</u>

There are a set of decisions that need to be made before setting up shop as a digital reference service. The first decision point is whether you want to provide an asynchronous or synchronous service. The second is the software you will use. The third decision is whether you will offer a local service, or become part of (or form or extend) a digital reference consortium. Let's take these decisions one by one.

Asynchronous versus Synchronous Digital Reference

Asynchronous digital reference is simply having the customer enter a question and having a librarian provide an answer at two different times. The advantage to the customer is that they can ask the question at any time. Two in the morning or three in the afternoon, the customer can ask their question and wait for the answer.

As digital reference has progressed there has become something of a "real-time" peer pressure in the reference community to push to only doing synchronous reference, but studies (Lankes, 2002) have shown that so long as the user knows to expect a delay, asynchronous services receive high user satisfaction ratings and have distinct advantages over real-time services. For one, many users seek out these services so they can defer their question – ask it at one point when the question arises, but not be able to use an immediate answer. This was the case in one study of rural school teachers use of Internet resources (Fitzgerald et. al, 2000). A study showed that primary school teachers had only 18 minutes in a day to ask questions and seek information online. These teachers would rather ask the question and get the answer later when they had time to deal with it. This time to process is also useful to librarians who can fully develop an answer without a patron waiting. Asynchronous services can also be very useful in larger digital, loosely coupled digital reference networks as will be discussed below. Asynchronous services also offer a lower initial resource allocation to get started, often simply setting up an e-mail account.

Synchronous services, often referred to as real-time services, seek to more closely replicate traditional reference. They promote themselves as the best way to conduct online reference interviews because there I the natural conversational give and take without the delay of sending e-mails around. Many services also augment this real-time "chat" function with co-browsing (literally guiding a user through a web site or web sites), and transcripts of the session. The cost of entry is higher, and there is greater difficulty in tightly coupling these services across libraries, but they do provide an excellent means of interacting with users ho are looking for information right away.

Software Selection in Digital Reference

Steve Coffman of LSSI provides an excellent framework for making synchronous software decisions in digital reference (http://quartz.syr.edu/ACRL/Software.htm). He lays out four basic software types for digital reference: Email, Chat/Instant Messaging, Remote Control, and Web Contact Center software. While he takes this from the approach of buying software, these types of solutions could also be developed internally as well.

Email is the cheapest and easiest way to get into the digital reference game. This is not to say it is only for beginners. AskERIC, for example, runs an internationally distributed digital reference system for education on e-mail answering over 45,000 questions every year. The issue associated with e-mail is that the library will have to through training and policy development make up for the fact that e-mail was not design explicitly for reference. For example, e-mail does not support the sophisticated statistical reporting one might like to evaluate a digital reference service, and the ability to build in automation (in routing of questions for example) is rather limited compared to other applications.

Chat and Instant messaging solutions have been used in digital reference with a large degree of success. This software is widely available across platforms, very easy to learn, and cheap (normally free). The one significant difficulty with these applications is the ability to queue customers. As customers ask questions windows will pop up on the librarian's screen. Five users

ask question at the same time, five windows. It is also very difficult to have two or three librarians manning the virtual reference desk at a time, because it is the customer who chooses where to send a question. Lastly, there is a dearth of standards to allow easy interoperability in the instant messaging software available. If the patron doesn't have AOL Instant Messenger, they can't send a question to a library that uses AOL IM.

Remote Control software represents the technology used in our previous "in-library" example. This software is very full featured and allows a librarian and customer to work together on a single computer. Some software features include the ability to use special tools like highlighters and onscreen annotations. With the recent inclusion of screen sharing software as a standard part of Windows (in Windows XP it is called "Remote Assistance") we may well see a rise in the use of this approach to digital reference.

Web contact center software is really a migration of e-commerce tools to the library setting. Library integration companies such as LSSI, and 24/7 have taken commercial help desk software and added library features. With these packages the patron clicks on a button and is taken to a "split" screen. Down one side of the window is a chat session, in the other window is a web page that can be changed by either the user or librarian. This ability to "co-browse" allows the librarians to guide the information seeking of the customer, visiting any web page while talking with the customer.

Obviously which type of software you choose will be strongly influenced by which type of service you are offering. Email software, and web-forms for question submission will work for asynchronous services, while synchronous services will require chat, remote control, or web contact software. The costs of thee solutions vary widely, as do the demands on your staff to install and support these systems.

Local versus Consortial Digital Reference

Another factor in which software solution to buy is who, if anyone, do you want to share questions and answers with. A good deal of digital reference is happening at the local level, that is within a given library. Libraries are looking to connect to existing, and possibly new customers that have come to see the Internet as a main source of information. Local service is an opportunity to promote the library, motivate staff to try something new, and meet customers at point of need.

Some have said, however, that the true value of digital reference is through networking the reference function. By teaming with other libraries, new service opportunities become available. Libraries have connected to peer institutions in different time zones to expand the service hours of reference. Libraries have networked with different libraries (public to special or school to academic) to increase the scope of reference services. Some libraries have teamed with other libraries, or library vendors, to expand the number of reference inquiries that can be handled. Still other digital reference networks have been formed to increase the overall quality of reference that can be offered, particularly with small libraries with few professional reference staff.

The network is often built on existing cooperative, or consortial arrangements. However, some are totally new pairings. Two examples of large-scale digital reference networks are the Virtual Reference Desk Network and QuestionPoint (formerly the Collaborative Digital Reference Service). These networks take a very different approach to coupling digital reference service.

The Virtual Reference Desk Network is a loosely coupled service operating primarily on email. Libraries become members of the network and then can send in questions that will be routed to other libraries, a variety of expert answering services (so-called AskA services such as Ask-a-Teacher), and government organizations. The entrance to the network is very low (email) and

there is little in the way of administrative overhead. QuestionPoint, on the other hand, is a very tightly coupled library digital reference network headed by OCLC and the Library of Congress. In this network a library joins by creating an extensive profile, and then agreeing to use an established web-based software package. CDRS has a governance structure, extensive policies, and soon a fee model. Both services aim to expand reference to include scale and scope unachievable at the local level.

<u>The Power of Reference Authoring</u>

Digital reference also allows for the tighter coupling of reference and the collection. Many libraries see the reference function as "sitting on top" of the collection. The collection is developed (weeded, selected, organized) and then reference's job is to improve access to this collection. One of the fundamental realities of digital reference, however, can significantly change this view. A reality of working in a virtual environment is the creation of a "transaction trail." Be it transcripts in synchronous digital reference, or email archives in asynchronous services, some electronic artifact or document is created as the result of a reference process. While this seemingly simple fact raises issues such as privacy, it also allows for the creation of a reference authoring process.

Reference authoring is collection building through reference. Reference archives and transcripts can be mined for statistics such as which library resources are most used, what Internet resources are most used, and what gaps exist in the collection. In the case of pointing to electronic resources, an answer in reference terms can be seen as a beginning, or stub cataloging record. The reference librarian (the cataloging agent) identifies a resource (the location), some abstract or comment on the resource ("this is good for the following question…") and can even add other basic cataloging information such as resource subject. Reference then becomes a form of light-weight cataloging. The answers provided by the reference staff can also be documents in and of themselves. Libraries have long constructed pathfinders to relevant information. A reference answer is a pathfinder. These pathfinders can be used in the library's web presence to aid in putting the human face on the web site. By creating a tighter coupling between reference and technical services the library is a more responsive organization.

Conclusion

Virtual customers are customers. The web and digital reference give the library a set of powerful tools to serve customer. Whether putting catalogs on the Internet, or librarians, the library must be fully committed to virtual customer service, that is interacting with customers in the mode they have chosen. Using the Internet and networks as a means to persuade the user to switch modes from digital to coming to a physical facility is difficult in these days of innumerable information choices. Customers will select the source they find most convenient, and there is no reason that libraries can't fill that role. As information organizations, libraries should quickly adopt to the Internet not simply as a source of information, but as a means to expand current services to new audiences.

It is time to begin considering your library's virtual services as a sort of online branch. While it is arguable if you should staff it as such, users will begin to view websites and digital reference services as a home. For the increasingly connected patrons, the online branch may well be their first stop, only resorting to entering into your physical facility to retrieve a book on hold, or have an in-depth consultation with a reference librarian. The point is to meet the user at the point of need.

Entering into the online world is no longer the daunting task it once was. With increasingly ever-present Internet connectivity, and with out of the box network solutions, simply having a presence online is easy. Having an online presence that is meaningful, and most of all, useful is still as

difficult as ever. The point is not to have a library transform itself completely to an online entity, but rather to have its online virtual services meet the high standards of quality we have come to expect inside our buildings. Bottom line is don't bother being online if you are not committed to meeting customers needs in an online mode. Don't bother being online to entice ptrons into your buildings. Go online to make the online world better.

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