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TECHNOLOGY AND WEB 2.0

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Introduction

Technology and Web 2.0 applications have infiltrated our lives and our libraries. The internet and other technological advances have allowed for the mass proliferation of information. Publication no longer rests in the hands of the few—anyone with access to a computer can self-publish. This explosion of resources makes it impossible for libraries to purchase everything their users need, which necessitates an increased focus of library resources on access versus ownership. Interlibrary loan plays a crucial role in managing this change in focus.

The ubiquity of technology is a double-edged sword for the ILL practitioner. ILL users are easily able to identify resources from around the world, many of which are difficult to borrow through interlibrary loan. Anyone can locate a potential resource via the internet whether through Google, WorldCat, or a library catalog. When a user requests an item, she expects to get it. With the speed of new technology, our users are also accustomed to instant gratification in their information seeking process.

At the same time, however, technology has made the ILL practitioner's job easier. Our systems are no longer paper-based. Virtually all the resources we need to achieve success can be contained on our computers. Citations and holdings are verified via online resources. Communication and collaboration between librarians is more easily accomplished through e-mail and software systems created specifically for our workflows. Articles are scanned and delivered electronically, eliminating waste and speeding turnaround times. The tools to locate and borrow materials have been placed at our fingertips thanks to technology.

This chapter serves as a guide to technological tools that can increase the effectiveness and efficiency of ILL departments.

ILL Management Systems

Thanks to technology, ILL practitioners are able to move away from the stacks of paper that once surrounded them. Several software applications are available from which to choose. This section provides background on each in order to help in your decision-making process.

OCLC (Online Computer Library Center) Systems

Although some libraries choose to manage their ILL operations using homegrown systems, many libraries use vendor-based products. One of the major providers of ILL management systems is OCLC. Libraries can choose to subscribe to OCLC WorldCat Resource Sharing (WCRS) or license OCLC ILLiad. The internal management capabilities of ILLiad are far greater than that of WCRS,

which is primarily a request platform. While designed to work in conjunction with OCLC WCRS, ILLiad can be used to manage requests outside the OCLC system and, in theory, could be used completely independently of OCLC. According to OCLC, over 10,000 OCLC member libraries use WCRS, while over 1,000 libraries and other institutions use ILLiad.ⁱ

WorldCat Resource Sharing (WCRS)

WCRS is a web-based platform accessible through the OCLC FirstSearch interface. Subscribers are able to search for requested items in the WorldCat database, view and select potential lenders, and send requests. From the main Resource Sharing screen, ILL staff can view how many requests are in each OCLC status, such as Request Pending, Shipped, Received, and Returned. Benefits of this product include direct request, custom holdings and constant data profiles, all of which save large amounts of staff time when implemented as they increase automation of routine tasks.

Direct request allows for the unmediated sending of requests into the OCLC ILL system. You can create a direct request profile to specify the types of requests you want sent automatically including limiting by format. Direct requests must include either an OCLC or ISxN number in order for OCLC to identify the item. Before choosing a lender string and submitting the request, the system checks the item against your own holdings as well as any other library groups you identify in the profile. In order for WCRS to choose the most appropriate lender string, it is helpful if you also create custom holdings groups.

Custom holdings are groups of potential lending libraries defined by the borrowing library. A borrowing library can use a number of criteria to establish these groups including geographic proximity of the potential lending library, preferred delivery method, and lending fees that may be incurred in the transaction. In addition to working in conjunction with direct request, library holdings are displayed in these customized groups when processing a request manually. Creating groups of preferred lenders has the potential to save both time and money by reducing turnaround times (geographic proximity groups) and fees paid (reciprocal library groups).

Constant data profiles are another useful WCRS tool. You can establish multiple profiles as needed that automatically populate request forms with information regarding your library including address information, preferred delivery methods, and the maximum cost you are willing to pay for borrowing an item. You will have one default constant data profile, but can choose another profile at the point of request processing.

ILLiad

ILLiad, or InterLibrary Loan Internet Accessible Database, is a software package that provides increased automation of ILL procedures over what is possible in WCRS. Developed in the interlibrary loan department of Virginia Tech University Libraries, ILLiad was launched in phases from 1997 to 1999. Since 2000, it has been a product of Atlas Systems and licensed by OCLC. ILLiad uses a web-based patron interface that allows users to directly submit and track ILL requests without staff mediation. Requests are stored in the database and are accessible to library staff through a separate interface, or client. Transactions are divided into three modules, Borrowing, Document Delivery, and Lending within the client. The ILLiad Client allows staff to search and order on OCLC as well as track requests that fall outside the OCLC workflow. ILLiad

also has an integrated scanning utility called Odyssey, which will be discussed later in this chapter. Standard ILL practices can be automated and managed through the use of several companion pieces including Odyssey Helper, Web Circulation, and the Staff, Billing, Database, and Customization Managers.

Odyssey Helper, released with ILLiad 7.3 in 2008, imports TIF images from a specified networked folder and sends and auto-updates article requests in ILLiad as well as external services such as OCLC or DOCLINE. This allows ILL staff to utilize scanners and software outside the department to create electronic files and batch send them at a later time. Odyssey Helper works with Document Delivery and Lending requests.

Web Circulation, also released with ILLiad 7.3, is a web-based interface that allows access to ILLiad's circulation functions without requiring access to the Client. The ability to check out, mark in transit, check in, and renew can all be controlled through settings in the Customization Manager. Web Circulation users can also search for and retrieve basic request information to respond to patron queries.

The Staff Manager, previously the User Manager, is used to create staff user accounts and set permissions for each staff member. An ILL supervisor can grant access to each of the other ILLiad managers and to specific modules within the client. While the use of other companion pieces is largely optional, the Staff Manager must be used to configure staff users before they can use the Client.

The Billing Manager allows you to generate and print invoices and track payments. Like the ILLiad Client, it is divided into Borrowing, Document Delivery and Lending modules. A library can choose to use any combination of these modules depending on its fee policies.

The Database Manager is a powerful tool that should be used with caution as its purpose is to delete information from your ILLiad database. There are four tabs within the Database Manager: Transactions, Patrons, Other and Billing Manager Test Mode. There are three keys in the Customization Manager to help protect transaction data from being deleted based on status and date of request. Patrons can only be deleted if there are no transactions associated with them. A variety of non-transaction and non-patron information can be deleted using the Other tab. The Billing Manager Test Mode allows you to delete any data created during the testing phase of Billing Manager setup.

The ILLiad system is highly customizable and most of this is accomplished using the Customization Manager. There are numerous keys that allow you to configure your own settings including the definition of file names for the various print and e-mail templates used by ILLiad and date sensitive tasks such as the number of days before sending overdue notices. The Customization Manager is also where Web Circulation options are set. There are also tables for Reasons for Cancellation, E-Mail Routing, and Custom Queues, among others, all of which are customizable.

All of the WCRS features previously discussed are also available in ILLiad. Added benefits to using ILLiad include custom web pages, print templates, e-mails and request queues. The custom e-mail and queue features allow for custom integration of non-OCLC requests into ILLiad. Virtually all requests can be tracked within the system, often with the aid of

customizable routing and request queues. For instance, you can create a custom e-mail for frequent suppliers who do not use OCLC such as the National Library of Medicine or for international requests, which also are regularly outside the OCLC workflow. These requests can be routed to a custom queue such as “Awaiting E-mail Response from Lender” as a reminder to follow up at a later date. More information about ILLiad customization can be found at the Atlas Systems web site and the IDS Project Workflow Toolkit, which will be described later in this chapter.

ILLiad is also compatible with DOCLINE and RapidILL, two services that will be discussed later in this chapter.

Other Systems

Clio

Clio is another ILL management system that operates similarly to ILLiad, working to automate and track interlibrary loan tasks. Clio Software is a family-owned business that has provided interlibrary loan software in the United States since 1994. Clio is completely compatible with WCRS and the National Library of Medicine’s DOCLINE system. The software also interacts with Ariel and Odyssey electronic delivery methods, which will be discussed later in the chapter. Patrons can submit requests through an online interface referred to as ClioWeb with the ClioAdvanced product.

Relais

Another popular provider of ILL management products is Relais International. Relais ILL also works to electronically manage interlibrary loan requests with capabilities similar to ILLiad and Clio. For increased productivity, Relais also offers integrated scanning and electronic delivery components.

Scanning Technologies

Overview

Interlibrary loan operations vastly improved with the creation of scanning hardware and software. Scanners transform printed documents into electronic files that can be sent to lending libraries via a variety of electronic delivery methods. Scanning capabilities have aided in the automation of interlibrary loan operations, improved the speed of delivery, and provided new conveniences for patrons.

Types of Scanners

The three most common scanning devices within interlibrary loan are: flatbed scanners, feeder scanners, and overhead scanners. The construction of each varies, but all three types work similarly to create a digital rendering of a physical document. To use a flatbed scanner, items are placed face down on the glass component of the machine. Users manually turn pages and repeat the process to scan multi-page documents. A feeder scanner, which can be included as a component of a flatbed scanner, automatically feeds loose pages through the machine. Overhead scanners are sometimes referred to as book scanners. With this method, items are

placed face-up, reducing the impact on the books or other bound items that are being scanned. Overhead scanning also requires less time and effort than flatbed scanning because it is not necessary to remove the book from the scanner in order to turn pages.

Specialized Scanning Software

Scanners work to digitally render analog data, but additional components are necessary to create usable files. A scanner driver serves as the communication link between a scanner and scanning software application to facilitate the creation and manipulation of digital files. Various drivers exist to interface between scanner hardware and software; and both the software and the hardware must be compatible with the same driver to operate correctly.

Once a digital file has been imported into the designated software application, it is ready to be manipulated according to your needs. For example, pages can be split, rotated, inserted, or deleted.

A variety of scanning software applications have been developed specifically for interlibrary loan. Ariel and Odyssey are the two most common examples, however new software options to streamline interlibrary loan even more are constantly in development. Ariel and Odyssey products offer both file editing options and mechanisms for electronic delivery through an Internet connection. Ariel, managed by Infotrieve, is a standalone product. Odyssey, developed by Atlas Systems, Inc., is a component of OCLC ILLiad and can also be used as a standalone product.

Ariel

The Ariel software allows you to scan and send documents to the Ariel workstations of other libraries, or the files can be directly sent to a patron's e-mail address. Documents can also be received from lending libraries using Ariel. The software converts the files from Tagged Image File Format (TIFF) to Portable Document Format (PDF). The PDF file format is preferable for various reasons. TIFF files are typically very large, whereas PDFs are compressed and thus easier to transfer. Additionally, PDF viewing platforms are especially prevalent. As mentioned, Ariel is a standalone product, but various ILL management systems have incorporated Ariel into the workflow of their products.

If you are interested in learning more about Ariel, Infotrieve maintains an in-depth user's manual, which can be downloaded from the "Ariel Information Center" web page (currently located at <http://www4.infotrieve.com/ariel/ricari.html>).

Odyssey

The Odyssey software operates similarly, allowing you to scan and send documents to borrowing libraries that are using the same protocol. Documents can also be received from lending libraries that use Odyssey. For libraries using ILLiad, electronic documents received through Ariel or Odyssey are imported into ILLiad, converted to PDFs, and posted to a web server. The OCLC record is automatically updated at this point, if appropriate. An e-mail notification is then generated alerting patrons that their requested article is available. To access the file, patrons simply login to their online ILLiad account where the file can be accessed.

The free Odyssey standalone product does not provide the full range of capabilities mentioned above, but it does allow you to edit scanned images, send files between libraries using Odyssey, and convert file formats.

Both Ariel and Odyssey products also include an address book component to manage contact information for other libraries. These are usually in the form of IP or e-mail addresses.

File Conversion

When dealing with the delivery of electronic documents, you may find it necessary to convert files from one type to another. Ariel and Odyssey, for instance, both use TIFF files for delivery. You may want to convert PDFs to TIFFs to be delivered; or you may need to convert TIFFs to PDFs in the course of troubleshooting. Converting PDFs to TIFFs saves paper and time by eliminating printing and rescanning of articles. There is also the possibility of locating a requested item on a web page, which would require conversion in order to be deliverable.

The National Library of Medicine offers two free file conversion options, DocMorph and MyMorph. DocMorph is a web-based tool that requires no local installation. It is capable of converting over fifty file types into PDF, TIFF or text files, but can only convert one file at a time. If you plan to regularly convert a number of files, MyMorph is the better option. This downloadable program is similar to DocMorph, but allows conversion of multiple files at the same time.

Printing documents to another file type is also a file conversion option. If your Microsoft Office suite includes the Document Imaging program, you can use the Document Image Writer to instantly convert electronic files when needed. The Document Image Writer is a virtual printer that can be used to convert any printable document to a TIFF file. Adobe offers a free PDF Printer Driver plug-in, which also acts as a virtual printer. After downloading, you can convert any printable document to a PDF file. Another option is to install a browser add-on for converting web pages to PDFs.

Other Systems and Services

Article Requesting

RapidILL

RapidILL is a growing service option for ILL departments. While not a management system in and of itself, it can be integrated into the workflows of ILL management systems like ILLiad, Clio and Relais. Following a 1997 flood that devastated its serial holdings, Colorado State University Libraries needed a way to fill the research needs of its users. RapidILL was developed to fill that need by providing quick, cost effective, electronic sharing of journal articles. All participating libraries commit to providing 24 hour turnaround times and free article service to the other participants. When a library joins RapidILL, it joins one or more "pods," or groups of libraries, with which it will share. A library can also choose to include document suppliers such as the Linda Hall Library among its potential lenders. These libraries charge a nominal fee to supply articles. All participants' serial holdings are loaded into the RapidILL database to match requests

to either the library's own holdings or that of another library in the pod. This prevents libraries from requesting material held in their own collections. Library patrons submit their requests in the library's existing system and are unaware of the use of the RapidILL service as the request platform.

RapidILL further automates the ILL process by using unmediated article request processing. The RapidILL client can automatically check incoming borrowing requests against the holdings database; input local holdings information into the request; and send requests into the RapidILL system for fulfillment. Incoming lending requests also include local holdings information. Together these unmediated actions greatly reduce staff processing time. ILL departments using ILLiad as their ILL management system can choose whether to use the unmediated features designed by ILLiad or those of RapidILL.

For more information about RapidILL, visit the RapidILL website at rapidill.org.

DOCLINE

DOCLINE is the interlibrary loan system of the National Library of Medicine (NLM), which facilitates sharing amongst libraries in the National Network of Libraries of Medicine (NN/LM). The system is primarily for requesting articles from medical and health sciences journals. Developed in 1985, DOCLINE now counts over 3,200 libraries among its users.

DOCLINE consists of three modules. The Institutions module contains institutional records. Each institution's record includes contact and policy information as well as more detailed borrowing preferences that enable the system's automatic routing capabilities. Up-to-date serials holdings are recorded and stored within the serial holdings module, SERHOLD. The Requests module is the third component of DOCLINE. This module is used to place requests and brings together the institutional and holdings data stored in the other two modules to appropriately route requests.

Most articles requested through DOCLINE are based on bibliographic information found in the PubMed/MEDLINE database or through the NLM Gateway. Requests are automatically routed to potential lenders based on institutional preferences and availability. The requesting library can specify the level of service needed, including rush and urgent patient care. DOCLINE is designed to move these requests through the system more quickly. The DOCLINE system can be used in conjunction with a number of ILL management systems including ILLiad, Clio and Relais. It is also compatible with a variety of electronic delivery methods, including Ariel. Libraries interested in participating in DOCLINE must first contact the appropriate Regional Medical Library to determine eligibility.

DOCLINE libraries may choose to participate in NLM's Loansome Doc. This web-based request system allows individuals who have established agreements with a DOCLINE-participating library to place requests directly. The DOCLINE library becomes the individual's "Ordering Library" in the Loansome Doc system. The "Ordering Library" may supply the requested article from their own collection or obtain it from another DOCLINE library on behalf of the individual. While NLM does not charge individuals a fee for the Loansome Doc service, the "Ordering Library" may charge copy and/or service fees.

Fee Management Systems

In the past, interlibrary loan billing was a complex network of tasks. Invoices needed to be issued for lending requests, and incoming payments for those requests needed to be recorded and processed. Considerable time was also spent receiving invoices for borrowing requests, matching the invoices with corresponding requests, issuing payments, and reconciling accounts. Completing billing tasks required careful oversight and was often time consuming. The labor costs of such tasks also greatly compound the overall expense of interlibrary loan services.

The billing process was significantly streamlined with the advent of electronic billing methods. Electronic billing eliminates the manual completion of the tedious tasks mentioned above. Several different fee management systems exist today to manage debits and credits for interlibrary loan fees electronically. The most common system is OCLC's ILL Fee Management System (IFM). The Electronic Funds Transfer System (EFTS), created by the University of Connecticut Health Center, is another popular system.

OCLC IFM

OCLC states that borrowing libraries can save more than \$45 by using IFM to eliminate tedious per transaction billing tasks.ⁱⁱ Any operation using OCLC WorldCat Resource Sharing can use IFM. To begin, simply select IFM and enter a maximum cost within the workflow or set your preferences within the constant data feature. IFM is a flexible feature. You can easily charge variable amounts based on your interlibrary loan policies. Each month, OCLC will reconcile your account and issue an invoice. The invoice will reflect the credits earned from lending and the charges incurred from borrowing. A minor IFM Administration Fee is also assessed.

If you are interested in using IFM to simplify your interlibrary loan billing process, begin by discussing the option with your accounting department. Depending on your library's budget structure, some workflow adjustments may need to be made.

EFTS

The National Library of Medicine (NLM) uses EFTS as the billing component for the interlibrary loan system DOCLINE. NLM encourages all DOCLINE libraries to participate in the EFTS billing system. EFTS provides the same benefits as OCLC's IFM component. Credits and debits are recorded and reconciled on a monthly basis, which saves individual ILL operations time and money.

To begin using EFTS, visit the University of Connecticut Health Center website to establish an account. Locate the web page for EFTS. The link to the web page is currently <https://efts.uchc.edu/>, but is subject to change. An online application form must be submitted. A Memorandum of Agreement needs to be signed by your institution's fiscal officer and mailed to the designated address. A monetary deposit in the amount of one month's estimated borrowing charges is also needed to open the account. Upon completing these steps, contact your Regional Medical Library to change your DOCLINE profile to reflect your participation in EFTS.

To bill borrowing libraries through EFTS, you can enter transaction information within EFTS, use the Transaction File Builder option within DOCLINE, or import a file created by another

interlibrary loan management system, such as ILLiad. Each system varies, so consult product documentation to learn about capabilities and setup.

OpenURL

The OpenURL specification was developed by Herbert Van de Sompel and Patrick Hochstenbach at Ghent University from 1998 to 2000. Van de Sompel & Hochstenbach, who called their project SFX, were responding to the desire to easily link from one electronic resource to articles referenced within it sparked by the increase in electronic publishing seen in the 1990s (Apps & MacIntyre 2006). At the conclusion of the project, Ghent University sold the rights to the SFX software to Ex Libris, which now markets its version of the OpenURL service under the same name. Several other vendors have developed their own software based on the original open specification developed by Van de Sompel and Hochstenbach. Examples include OCLC WorldCat Link Manager, Serials Solutions 360Link, Ebsco LinkSource and the UKOLN (Office of Library and Information Networking) OpenResolver. Since its development and widespread acceptance, OpenURL has been adopted as ANSI/NISO Standard Z39.88-2004, the OpenURL Framework for Context-Sensitive Services.

At the most basic level, an OpenURL is a web address, or link, that includes resource-specific metadata in a standardized format. The metadata-enriched URL communicates information about the resource between different information services. The metadata in an OpenURL uniquely identifies a resource. For example, an OpenURL for a journal article might include the ISSN of the journal and volume, issue and page numbers.

EXAMPLE:

<http://www.yourlibrary.edu/servicename/openurl?genre=article&issn=1072303X&title=Journal+of+Interlibrary+Loan%2c+Document+Delivery+%26+Electronic+Reserves&volume=17&issue=4&date=20070901&PAGES=63-76>

For the OpenURL link to be useful, it must be paired with an OpenURL link resolver. Libraries generally choose to purchase OpenURL link resolver software, often from the same company used to manage electronic resource subscriptions. When a user clicks on an OpenURL link within a discovery tool such as an article database or Google Scholar, the resolver redirects him or her to a web page with options appropriate to that user rather than directing the user straight to the full-text provider. This prevents users from hitting a dead end with non-subscribed content. If electronic access to a given resource is available freely or through a library subscription, links to that content are presented first. The user is also notified if electronic access is not available. Users are then given the options to search the library's catalog for print versions, and finally, to link to the library's ILL system if neither electronic nor print access is available.

This bridge between discovery tools and ILL management systems is helpful to both users and staff. The metadata included in the OpenURL will auto-populate the request form, which saves the requestor from having to rekey citation information and ensures ILL staff will receive a complete and accurate citation on which to search. The inclusion of the ISBN or ISSN in the metadata makes matching the item easier. ILL staff is less likely to request an incorrect item which speeds the request and delivery processes. In order for the OpenURL metadata to transfer correctly to ILL request forms, you must map the OpenURL tags in your ILL management

system. This instructs the OpenURL in which fields within the request form to place the resource metadata.

Web-Based Finding Aids

Whether you are trying to borrow out-of-print monographs, theses or dissertations, foreign titles or historical documents, web technology has given resource sharing professionals a plethora of online resources for citation and holdings verification. The likelihood of finding an item freely available online is also increasing as more and more information resources have a digital life.

Many users start their search with Google. Google can also be helpful to ILL staff searching for potential lenders of materials or for discerning complete citations. Sub-services of Google like Google Scholar and Google Books can often yield complete citations and even actual documents. This section will discuss these and other web-based finding aids of which you should be aware.

International Publications

International publications are among the most difficult and time-consuming items to locate and borrow. ILL users can easily locate such items on the internet, but rarely have any concept of the difficulties involved in obtaining them. Luckily for ILL practitioners, the internet also provides a variety of tools for citation and holdings verification. According to a survey conducted by the ALA RUSA STARS International ILL Committee, the majority of international requests are for items from Canada, Great Britain, Australia, Japan, Germany and France, all of which have helpful online resources for ILL practitioners (STARS International ILL Committee 58-59).

Whether you are able to locate holdings information in OCLC or not, the National Library web sites of these countries can assist you in holdings verification and location of policy information. Many developed nations also support online union catalogs to facilitate searching of collections across libraries. Frequently, ILL policy information can be accessed directly from these union catalogs creating a one-stop shop for information essential to request processing.

Open Access Materials

There are a number of electronic book repositories to assist ILL practitioners in filling requests for texts in the public domain as well as others licensed using Creative Commons licenses. The most well known of these is Google Books. ILL professionals can use Google Books as a source for providing out-of-print and out-of-copyright monographs that would otherwise be unfillable requests. The interface is simple and readily accessible to anyone. The following paragraphs give descriptions of other useful repositories.

Europeana is the shared digital repository of museums, galleries, archives and libraries across Europe. In addition to texts, it includes images, sounds and videos.

Gallica is the digital library of the Bibliotheque nationale de France. It provides free access to the written works, images and sound recordings included in the repository. Gallica is an

excellent resource for pre-1900 texts, which would be difficult, if not impossible, to borrow from a French library.

The HathiTrust is a shared digital repository in which major U.S. academic libraries archive their digitized collections. The content of the repository is searchable, and the full-text of public domain items is freely available on the internet. Though originally a collaboration between the thirteen member universities of the Committee on Institutional Cooperation (CIC) and the University of California system, membership in the HathiTrust is open to all.

The Internet Archive hosts the “Wayback Machine,” an archive of the World Wide Web. It is also home to extensive archives of moving images, audio, software, educational resources and text. In addition to housing public domain documents, the Text Archive contains a collection of open access documents, many of which are licensed using Creative Commons licenses. It can be a useful place to find conference papers or reports.

Project Gutenberg is the self-proclaimed oldest repository of open access, full-text public domain texts. This free collection contains over 27,000 free e-books in a number of languages and links to partner projects that take the total over 100,000. The books are available in a number of file formats including some which are downloadable to an electronic reading device. Project Gutenberg’s e-books are in plain text rather than actual page views of the original material.

Electronic Theses and Dissertations

Theses and dissertations are historically difficult to borrow from granting institutions, but are becoming easier to locate thanks to the advent of electronic theses and dissertations (ETDs). To start, there are the fee-based option of ProQuest’s Dissertations and Theses database and Dissertation Express service. Even if you don’t subscribe to the Dissertations and Theses database, you can purchase copies of works indexed by ProQuest. However, open access repositories of ETDs are becoming increasingly common.

The Networked Digital Library of Theses and Dissertations (NDLTD) is an international organization “dedicated to promoting the adoption, creation, use, dissemination and preservation of electronic analogues to the traditional paper-based theses and dissertations (<http://www.ndltd.org/>). On its website, you can find information about the initiative and how to set up your own ETD program. The NDLTD also offers the ability to search for ETDs and access to research related to NDLTD and ETDs.

Individual academic institutions have developed their own ETD repositories, and an online library catalog or institutional repository search can yield free full-text ETDs. Some National Libraries have created their own ETD projects in service of their countries, including Canada and Great Britain. The Theses Canada Portal records electronic access to theses and dissertations when available. Launched in 2009, the British Library’s EThOS service offers digitization of UK post-doctoral theses. As of August 2009, 105 universities were participating. EThOS has proved extremely popular; it received over 50,000 requests in just the first five and half months of service (British Library).

Historical Documents

The Library of Congress (LC) is a major repository of historical documents related to United States history. LC continues to place more and more of these American treasures online in an effort to broaden access. While the online catalog is an excellent resource in and of itself, LC's online collections provide immediate access to a number of primary resources. The American Memory Historical Collections contain resources in a variety of formats that form "a digital record of American history and creativity" (<http://memory.loc.gov/ammem/about/index.html>). Collections within American Memory range from Frederick Douglass to folk music to World War II maps to women's suffrage. THOMAS is a searchable database of the Congressional Record, bills and other legislative documents. These are only two among many of freely accessible digital projects of the Library of Congress. The wealth of information available is seemingly endless. To browse the LC resources, visit www.loc.gov.

The National Archives & Records Administration (NARA) is the nation's repository for government documents and the most important historical documents of the United States including the Declaration of Independence and the Constitution. The Archival Research Catalog (ARC) provides online access to the holdings of NARA. Currently, not all of NARA's holdings are indexed in the ARC, but records are added continuously. There is also a searchable, online Guide to Federal Records in the National Archives of the United States. While you may choose to have users contact NARA directly for record reproductions, its web site can help you identify NARA as the appropriate repository to which you should refer users.

Users may also be interested in historical records at a state or local level. State libraries and historical societies are excellent places to locate this type of information. Many of these organizations have online catalogs and web sites with information about their ILL policies. While not all items held by state libraries and historical societies are circulating, ILL practitioners can still provide valuable assistance by locating holding institutions. You may even be able to obtain copies of some documents by contacting the organization directly.

Communication tools

Your library website serves as an essential communication tool. For most users it is the primary gateway to information and services, including interlibrary loan. Yet users often struggle to navigate complex library websites. Enhance your services by creating usable interlibrary loan web pages and providing online assistance.

Websites

To provide adequate support to online users, ensure that your interlibrary loan web page is easy to locate and easy to use. Provide a link to the interlibrary loan web page on the library's homepage. If the web page is located deeper in the website's structure, users are less likely to discover the service or they can become frustrated while trying to locate the web page. To create a usable web page, consider some of the following guidelines. Clearly display essential content such as request forms and contact information. Define the various services provided by your department in meaningful terminology by avoiding library jargon. For example, if your institution is a member of a library consortium, define the consortium and explain the parameters and benefits of the service. Do the same if you support an internal document delivery service. Provide a list of frequently asked questions and corresponding answers for

users seeking assistance. Assist potential borrowing institutions by including relevant information for them on your web page as well.

Online assistance

To assist online users at the point of need, employ virtual services such as instant messaging and online tutorials.

Instant messaging

Within libraries, instant messaging services or chat reference services allow users to seek real-time assistance online by corresponding with a library professional.

To communicate via instant messaging, library staff can install and run an instant messaging client to exchange messages with users running similar software. Or staff can embed a chat window directly into any web page with web-based software or a widget (an application or code that can be integrated into a web page), thus allowing users to communicate with a librarian without specialized software. Some of the most popular options currently include Meebo and Digsby.

If your library already provides a chat reference service, provide a link to the appropriate web page from the interlibrary loan page. Consider providing a chat window directly on the interlibrary loan page so users don't need to navigate away from the interlibrary loan web page to ask related questions.

Tutorials

Another way to serve online users at the point of need is to provide asynchronous instruction through online tutorials. Create online tutorials to inform users of interlibrary loan services or to guide users in performing specific interlibrary loan tasks online.

Video tutorials that contain screencasts are especially helpful for virtual users. Screencasts record the displays and actions on a computer monitor. Specialized software allows the video producer to combine the screencasts with audio or textual narration. Providing visual orientation allows users to navigate the library website more effectively and efficiently.

A variety of technologies to create video tutorials now exist. Camtasia and Jing are two common options that are both supported by the company TechSmith. Jing is free, while Camtasia is not. Adobe Captivate is another popular product available for purchase. Investigate the technical specifications of your library's network before pursuing screencast software and creating video tutorials. Adequate technical support and file storage space needs to be available to facilitate online access to video files.

Other Communication Technologies

Wikis

Online technologies also exist to support internal communication. A wiki is a website operated by special software that allows for easy, web-based editing without needing any knowledge of HTML or XML. Online content can be created and edited using a text-editor similar to standard word processing programs. The simplicity of a wiki makes it an ideal tool for dynamic departmental collaboration, communication, and knowledge management. The online space can exist as a repository of interlibrary loan policies, a message board, or a how-to guide for difficult tasks, among other uses.

Wiki software options are numerous. Most options are open-source and free, within limits. When selecting software, compare the technicalities of each product, as some wikis are more intuitive than others. Investigate the available support and privacy options, among other issues.

Other wikis to support interlibrary loan operations and proprietary software also exist. The IDS Project Workflow Toolkit wiki and the ShareILL wiki are two popular resources. Both wikis aim to share best practices for interlibrary loan operations. The IDS Project Workflow Toolkit is maintained by the Information Delivery Services (IDS) Project, a group of libraries within New York State who are facilitating new and improved methods of sharing resources. The IDS Project Workflow Toolkit contains documentation specifically for ILLiad users. ShareILL includes resources on all aspects of interlibrary loan, and the wiki can be edited by any registered user. Such wikis are extremely helpful for new interlibrary loan professionals searching for free means of training. Unfortunately, these wikis migrate regularly. To locate additional wikis, ask experienced colleagues or search the Internet.

Conclusion

Technology, web-based or otherwise, is rapidly evolving. As technological innovation continues, ILL users have access to an ever-growing amount of information. This ability to access information and identify resources on a global scale gives ILL an increasingly important role in library services. ILL users need us to help them navigate the vast ocean of information in which they find themselves floating, and sometimes drowning. ILL staff have the skills to locate both commonplace and rare materials and the power to instruct users in how to find information for themselves. We have a responsibility to assist our users by locating the physical materials they identify in a virtual environment. Innovations in technology allow us to further integrate our routine processes into software and web-based systems and streamline our workflows to focus staff time on fulfilling this responsibility.

As ILL practitioners, it is crucial to keep up with new technology trends and resources that can impact ILL services and productivity. The ILL community is your greatest resource of knowledge, and that community is stronger than ever. Technology has enabled us to come together in new ways. ILL practitioners can connect on a daily basis to request support, share ideas, and announce innovations in software and services. It is important to be an active member of the community through participation in electronic discussion lists, community portals, and conferences in order to maintain connections to ILL colleagues. By working together as a community, we can harness technology to provide new and improved services to our users and affect positive change on ILL practices.

Web Resources

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ⁱ E-mail from John Trares to author, June 3, 2009.

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