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Electronic Document Delivery in West Virginia

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DIGITAL DOCUMENT DELIVERY AT THE HEALTH SCIENCES LIBRARY

The Health Sciences Library at the Robert C. Byrd Health Sciences Center at West Virginia University is an active participant in Interlibrary Loan/Document Delivery. Constituencies at the HSL include on-campus faculty, staff, and students and also off-campus users. Those off-campus users include rural health education rotation students completing their field assignments; distance education students at several sites within the state; clinical/field faculty in various health care settings; health care practitioners throughout the state; and, in fact, anyone needing health care information. Traditional formats for providing requested documents have included photocopies, either sent via US mail or available for pickup at the circulation desk of the library, and facsimile transmittals. Fax machines became popular in the mid-1980s. (Webopedia) Although fax *is* a digital method of delivery – images are sent or received over telephone lines – the images are generally of poor quality. In addition fax/telephone lines are frequently busy, and many individual users do not have access to fax machines. With a need for timely information comes a demand for rapid delivery of that information. Newer methods of digital document delivery now offer faster delivery of information.

The HSL has utilized Ariel® transmission of journal articles between libraries for a half dozen years. Ariel® is document transmission software developed by the Research Libraries Group. (Ariel FAQs) Since both a sending and receiving station are necessary, Ariel® is generally considered to be an interlibrary method of electronic delivery. In 1998, in an effort to continue rapid delivery of requested information, ILL staff began forwarding these bit-mapped images/TIFF files as e-mail attachments to several users' desktops. An image or TIFF viewer such as the National Library of Medicine's DocView was required in order to "read" the document. (NLM) In addition, sufficient mailbox capacity was required. One faculty at the Health Sciences Center recounted that his department didn't allot sufficient space on the department's server for regular e-mail correspondence; receiving large document files would be out of the question.

New Technology/New Services

Recently, improvements in transmission options have taken place. PDF or portable document format files have a number of advantages over TIFF files. (Adobe Acrobat) Adobe® PDF files can be compressed so that files download quickly; preserve the original appearance of the document; and may be viewed using Adobe Acrobat Reader, a free viewer. (Adobe Acrobat) An important copyright concern has also contributed to the fact that Adobe® PDF is now the standard for electronic document distribution. While TIFF files are editable and can be altered, PDF documents, when opened using the free Acrobat Reader, cannot be altered or manipulated.

In an effort to provide easily accessible electronic documents, the HSL partnered with WV CONSULT, affiliated with Rural Health at the Health Sciences Center, and, in 1999, began offering digital document delivery to a select group of users: WV CONSULT Gatekeepers and RHEP (Rural Health Education Partnerships) site coordinators. (*Online with WV CONSULT*, 1999) Minimum hardware/software requirements included the following (Wasson and Wilkinson, 2000):

- Windows 95 or Macintosh 6.5
- 28.8Kbps Modem Internet Connection (56Kbps recommended)
- Microsoft Internet Explorer 4.0 or Netscape 4.0
- Eudora 3.0, MS Outlook 97, MS Outlook/Outlook Express, or Netscape Messenger 4.0
- Adobe Acrobat Reader

ILL/Document Delivery staff process documents in a series of steps: scan the article, convert the document to PDF using Adobe Acrobat software, FTP to the WV CONSULT server, choose the correct e-mail template, insert the naming convention, and e-mail the user. The URL is contained in the body of the e-mail. Access to articles is userID and password protected. Authorized userIDs are sent to WV CONSULT as new users are added. In addition, in an effort to be copyright compliant, manual removal of the documents from the server takes place every week.

Preliminary Results

End users have reacted positively to the Health Sciences Library's new web-based Digital Document Delivery service. Those Gatekeepers/Site Coordinators who have requested articles owned by the WVU HSL and who have received those articles electronically continue to request electronic information delivery. Articles are stored on the WV CONSULT server, thus not tying up server space on the user's provider's end. Staff find scanning convenient using the Minolta PS3000 open face scanner; it is no longer necessary to first photocopy the article as is required when sending by fax.

Collaborative efforts included funding, partnerships, and staff development. The HSL purchased the open face scanner at a cost of $9,237.00, the necessary software (Adobe Acrobat approximately $249.00), and a hard drive ($400.00) for its support server. WV CONSULT provided server space as well as management of the user base. Collaboration between the Health Sciences Library and WV CONSULT proved to be a logical partnership since both units have a similar mission: to provide WV health care professionals and students improved access to timely biomedical information. The WV CONSULT Director and Associate Director along with library

faculty publicized the new service to WV CONSULT constituents via newsletters (*Online with WV CONSULT*, 1999), listserv email messages, and instructional sessions at the WV CONSULT Gatekeepers Conferences. (Wasson, 1999) HSL Interlibrary Loan/Document Delivery staff learned new skills in order to provide electronic document delivery in addition to providing instruction/ information to those statewide users anxious to access documents electronically.

Digital document delivery is fast, convenient, a sought-after service as users take advantage of increased Internet availability and their improved individual skills in using online resources. The HSL was confident that our user base would continue to grow; we fully expected to see an increased demand for electronic information delivery whether the library owned the document or not; we believed users would eventually expect digital document delivery whether across campus or across the state. Our user base has expanded to include the rural health education rotation students completing their field assignments; distance education students at several sites within the state; clinical/field faculty in various health care settings; health care practitioners throughout the state; and commercial clients. We anticipate on-campus electronic document delivery to become an even more popular library service. In fact the distinction between ILL and document delivery is becoming more blurred. Whether the home/provider library owns the document or whether that library must secure the item from another source is of no concern to the patron. S/he simply wants the information as soon as possible. The Health Sciences Library provides free Interlibrary Loan services to current faculty, staff, graduate and undergraduate students. Document delivery of those materials owned by the HSL is a fee-based service. With the exception of the rural health education rotation students, the HSL charges for document delivery whether web-based electronic, fax, or print. Charges vary based on affiliation and category of user, e.g. WVU affiliated users; non-affiliated health care practitioners (includes hospitals/clinics); academic, public, and government libraries, both in-state, out-of state, and international; and commercial clients.

Continued Enhancements

As new technological advances have become available, we have seen continued improvement/refinement in how we provide electronic information delivery. Prospero software developed by staff at the John A. Prior Health Sciences Library at the Ohio State University, captures/converts Ariel® files to PDF documents and automates a number of steps in providing electronic document delivery services. (Prospero) Relais Express commercial software offers even more flexibility in providing multiple delivery options. (Relais International) Ariel version 3.0 with an expected release date of spring 2001 will incorporate Prospero functionality and will offer other new features similar to Relais Express. (Ariel®)

The ILL/Document Delivery department at the HSL began experimenting with Prospero software in fall 2000. An article received as an Ariel® file is automatically converted to PDF and saved on our West Virginia University Libraries server. Staff select the end user from the patron database. Patron information must be entered only once. An email is automatically sent to the patron who is able to access the document using a randomly assigned Personal Identification Number. It is no longer necessary to assign individual user IDs and send that authorized user information on to the unit maintaining the server. Nor do ILL/Document Delivery staff have to send individual e-mail to those requesting electronic articles. For journals owned by the HSL, the article is scanned and, again using Prospero software, converted to a PDF file and sent as a web-base document. During the month of January 2001 the HSL sent 70% of all ILL requests received electronically on to the users desktop (407 articles) using Prospero software. 85% of documents (519 articles) loaned by the HSL were sent electronically using Ariel®, Prospero, or our homegrown digital document delivery system. (ILL Monthly report, January 2001) Prospero as a free open-source system is, of course, extremely attractive as many libraries are being forced to downsize budgets as users

demand more services. The creators of Prospero have made a significant contribution to ILL/Document Delivery units everywhere. (Schnell, 1999) We are anxious to test the new Ariel version 3 which incorporates features for end-user document delivery since we currently utilize Ariel® software: $495/copy for the upgrade vs. $2,000/copy plus a yearly maintenance fee for Relais Express.

Future Expectations

We will continue to explore what is being used elsewhere as well as stay abreast of any new commercial software developments. As the land grant university of the state as well as a Resource Library within the National Network/Libraries of Medicine, our responsibilities at West Virginia University's Health Sciences Library are myriad: service to our academic users, service to the state, service to anyone needing health care information anywhere. We look forward to continuing to expand our digital document delivery services to our many and varied library users. Electronic information delivery is, indeed, no longer the wave of the future but a service deemed essential by our Health Sciences Library users.

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UNIVERSITY LIBRARIES ELECTRONIC RESERVES

Introduction/Definitions

Document delivery is a term that is used today in many types of libraries to mean several

types of services. In a commercial sense, document delivery is a service that allows a user to order copies of materials (usually journal articles) from sources outside the library. Users pay for this service. It also means *information available electronically from a secure site to support an educational purpose*. This second definition is inclusive of electronic reserves in an academic library setting. It is closely related to interlibrary loan service in this manner of thinking. Here the user does not pay for the service. It is included in the library's information outreach and support efforts. Often reserves, a traditional form of library support to faculty and students in an academic setting, are not considered in definitions of document delivery, though a case could probably be made that even traditional reserves ARE a form of document delivery. This paper takes the view that electronic reserves are definitely another variation on the theme of the timely and highly popular document delivery services that libraries offer and many commercial services sell.

Background at West Virginia University Libraries

In the 1990's, academic libraries in the United States and other English speaking countries began to transform traditional reserve service into in electronic reserve services. In higher education environments many college and university libraries are now delivering information electronically to students on behalf of their faculties. At this time in 2001, there are at least 138 known institutions offering electronic reserve services. (Rosedale). West Virginia University Libraries is one of these institutions. Since 1998, starting first with a pilot project on non-copyrighted materials and then quickly expanding in 1999 to include all needed materials at our Downtown campus library site, we have supported the instructional efforts of faculty with electronic reserve service. This was an expansion of what we have always done since the 1930s through reserve service. We simply added the use of new technologies to broaden and enrich an established service. In the words of Jeff Rosedale of the Electronic Reserve Clearinghouse, "Bringing electronic information technologies to bear on this process offers an opportunity to remove not only physical barriers but also temporal limitations of access during library hours. Electronic media allow for a more interactive learning experience as well as the addition of sound and motion to make course related materials more engaging." (Rosedale)

At present University-wide, 200 WVU faculty members have chosen to use electronic reserve services, while 441 use traditional reserve services. The materials the faculty members place on electronic reserve vary greatly from discipline to discipline and include tests, lecture notes, homework solutions, journal articles, research reports, book chapters, and PowerPoint presentations. One way or another these materials are "documents" and when the materials are digitized and transmitted to a secure library site for study and possible reproduction, it is indeed document delivery. (Wasson and Wilkinson)

Designing a Homegrown E-Reserve/Document Delivery System for a University Library

The next section of this paper explores the some of the key issues and concerns we encountered at West Virginia University Libraries in setting up a homegrown system for delivering documents through electronic reserve services. They include:

- project approval and funding
- software/hardware identification, selection, and maintenance
- collaboration with Systems, web development, other campus libraries
- consideration of commercial products for e-reserves management
- virus and crash management
- responsible copyright observance in a fair use environment

- faculty user education about integration of e-reserve in course planning
- student user education and surveying satisfaction
- migration to a new system
- the campus politics of printing and copying digital materials
- staff challenges

Project Approval and Funding

Surprisingly, this was the easiest part of the implementation. The Provost of our University had traveled to other campuses and had observed e-reserves in action. He wanted such services in our libraries. Following the writing of a project proposal with a reasonable budget, he reviewed it and invested $30,000 in start-up costs. This allowed for the purchase of a server and public service user equipment for dedicated e-reserve stations. Our Libraries' Dean supported other equipment purchases and start-up costs. Our first scanner was a flatbed model for which we quickly purchased a document feeder attachment due to the rising popularity of the service.

Software/Hardware Identification

We reviewed software that accomplished the tasks that were needed and decided upon WS FTP, Adobe Exchange, Reader, Acrobat and PageMill. Our Systems staff recommended hardware that was durable, contained enough memory, and offered scanning speed that expedited document processing for digitization. We have found that it is essential to monitor software/hardware upgrades and changes in the marketplace so that within reason, we can be as up to date as possible. (See requirements for Hardware/Software at http://www.hsc.wvu.edu/library/docdel-poster.htm)

Collaboration with Systems, Web Development, Libraries

When using new technologies to offer old, redesigned library services, nothing is more important than collaboration. Why? We are human beings of different ages, races, and backgrounds working together in a shared environment that changes every day. Each of us has knowledge; none of us knows everything. We have to work together. We must learn from each other. These days no new library service survives without a web component and certainly not without Systems support in choosing and maintaining software and hardware. In decentralized systems such as ours, unless branch staff cooperate, services cannot be offered effectively to all constituencies served by the Libraries' system.

Commercial Products?

The commercial marketplace offers several products that "do" electronic reserves and we have reviewed one of them in particular: the Docutek product ERes. But our homegrown system works well for us now and we have not been able to justify the expenditure because we have not yet seen enough advantage to switching to a commercial product. This may change in the future.

Copyright

Copyright compliance requires that librarians monitor the changes in the law at the federal level and integrate them into library policy. These changes need to be shared with the faculty users of electronic reserve services. It needs to be said frequently that copyright is a complex and contradictory subject. But copyright educator is a good role for the librarian. There is a lot to teach

about operating in the fair use environment and making the most of the rights we do have.

User Education-Faculty and Students

To promote the use of e-reserves services by faculty, my staff and I designed a two-hour course in 1999 that has been offered most semesters through a seminar series on faculty development run by the WVU Academic Affairs Office. The course is called

"Integrating Electronic Reserves Into Your Class Planning". We have had at least forty faculty take the course and evaluate it positively. 200 faculty members are using our electronic reserve services at this time. Between 7 and 18 faculty members have taken this course each time it has been offered.

Students who have taken courses in which e-reserves were used are good advocates for further use of electronic reserves with faculty. They function as library service promoters in this regard. At first through a user satisfaction survey, we discovered that there were students who liked e-reserve services, and there were many who did not. Students loved being able to read their assignments at home or in the campus computer centers rather than being required to come to the libraries. Dissatisfactions grew out of frustrations with their providers and the printing equipment that caused printing time to vary greatly. In the last two and a half years we have seen a dramatic transformation in acceptance of electronic reserves by students. We attribute this in part to more widespread use of Windows 95, 98 and 2000. AOL has also started allowing file sharing as part of its regular service. Smaller providers have followed suit and that has opened up faster and more trouble-free document transfer service to many of our students. The one remaining problem seems to be the occasional student who does not realize that Adobe Acrobat Reader must be installed on his/her personal or home computer and that downloading it is not enough. The installation procedure must be followed as well. Some expect that this will take only a minute or so to do the download and installation, but it is at least a twenty-minute procedure and that is a lifetime to some students.

Migration to New Systems

West Virginia University Libraries were a NOTIS Library until May of 2000. At that time, we migrated to Endeavor's Voyager. In both systems is has been our experience that the reserves function outside the mainstream of the basic automated library system. Reserve and the rest of the system work in parallel formation; they are not really integrated in the way we understand integration of cataloging and circulation functions for example.

Printing and Copying Politics

At this time, all the WVU Libraries except one are absorbing printing costs in full. The Associate Provost has a blue ribbon panel exploring the efficacy of charging consistently for printing in our academic computing labs and in our libraries across campus. The Libraries are hopeful that a cost recovery system will be adopted by the Administration so that students will pay for their own copies in the future.

Virus/Crash Management

Many faculty members submit their materials to us through e-mail. In turn, some of them take materials from the Internet. As a result, we have had two unfortunate experiences with the introduction of viruses in electronic reserves. This has been a temporary setback each time and we have worked together with our Systems people and the effected faculty and students to rebuild the

infected files. We have always had virus protection but now the use of Norton Anti-virus software has been much more effective than earlier programs.

It is our conclusion that an attitude of complacency toward viruses is unwise in e-reserve operations. We have found that it is easy to underestimate the negative effects of an infection, no matter how small. There is significant disruption to both student learning programs and faculty class planning. Investment in the best protection is well worth the cost. Staff need support in how to identify and report an infected file.

At the time of the introduction of a new server configuration, we experienced one total system crash. Luckily most of the files were backed up so we were able to rebuild our documents. However some files had to be completely re-scanned. Such a thing only needs to happen once to open everyone's eyes to the seriousness of a crash and its effect on service.

Staff Challenges

Experience since 1998-99 at West Virginia University Libraries has taught that some staff in access services do extremely well when faced with doing reserves in both traditional and nontraditional formats. Others feel fearful, but willing to learn. Others must be cajoled. In some cases, it must be made clear through new performance expectations that learning how to do e-reserve processing is non negotiable because change is here to stay. Supervisors may encounter differences in technical ability, problems in work flow and work assignments, and a need for training and re-training. Technological change requires the establishment of positive attitudes toward continual learning. All access services staff must eventually have e-reserve skills but achieving that does not happen for all employees at the same rate of speed. Tensions can result from differences in ability and it is a supervisory necessity to intervene and modify these as promptly as possible. Interventions can include retreats, workshops, individual conferences, revisions of job descriptions, and clear goal setting with performance evaluations. Good personnel management with firm but patient skill development for all employees (including librarians!) throughout the implementation of electronic reserve services is critical to success.

Conclusions

No e-reserve service in an academic library can operate in a static setting. It is affected by changes in the larger library environment and must change continuously to keep pace with needs as presented. Through e-reserve service, an academic library can offer library service to previously unserved users, it can provide new convenience to users, it can teach new Internet skills that are adaptable to many different educational settings, and it can be an additional component in efforts to offer virtual library services. No electronic reserve service is developed on any campus without real applications of interdepartmental collaboration. Often the campus departments that must cooperate include: the Provost's Office, the Office of the Dean of Libraries, various relevant department heads within the Libraries, the Libraries' System Office, the Web Development Librarian and all of the front lines staff members who process materials for reserve and work directly with the faculty and students. Whoever is on the libraries' team, the information odyssey in search of document delivery implementation is well worth the commitment and effort.

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