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Improving Electronic Reserve Services: A Collaborative Effort

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Abstract:

To improve the efficiency of Ryan-Matura Library's electronic reserve (e-reserve) service, the staff of the library and the Office of Instructional Technology at Sacred Heart University codeveloped and implemented a system that streamlined the request and delivery of e-reserves for faculty and students. This system utilizes the institution's integrated course/content management system (Blackboard) along with a custom-built Web application that facilitates the request, retrieval, digitization, and delivery of e-reserve materials directly to students within their Blackboard courses

BACKGROUND

Course reserves are typically offered by college and university libraries as a service designed to provide students with access to supplemental course materials for a specified period of time. Sacred Heart University is a teaching institution, with classes in session almost year-round. Course reserves provide convenience for both faculty and students and have become an indispensable part of supporting teaching and learning. The Ryan-Matura Library at Sacred Heart University implemented its first course reserve service in spring 2000, which consisted of a shelf located behind the circulation area where physical items were stored. This configuration allowed faculty to check their reserve materials and to adjust the quantity of individual items available to their students. This system could accommodate only about a hundred items (such as books, CDs, DVDs, and videocassettes) on reserve

In 2002, the Ryan-Matura library deployed the Innovative Interface Integrated Library System (III ILS), which included a reserve module that accommodated both physical and electronic reserves. Since reserves were now cataloged, faculty no longer needed to visit the library just to check whether items need to be added or deleted, and students could find their required readings quickly. The number of physical items placed on reserve increased by about 30 to 50 each semester. Electronic reserves, including book chapters,

journal articles, syllabi, and course lecture notes were made available through the campus network or off campus via remote authentication 24 hours a day, 7 days a week. The improved access to reserve materials increased the service's popularity, and several issues arose regarding access and delivery. This paper will examine these issues and the solutions put in place by the staff of the Digital Library Development Department and the Office of Instructional Technology at Sacred Heart University.

ISSUE 1: IMAGE QUALITY AND FILE SIZE

During the initial rollout of e-reserves, documents were scanned as individual image files in TIFF format. These large electronic files prolonged download times and took library staff longer to process. To help alleviate the frustration often experienced by users as they attempted to access e-reserve materials, the library was forced to retain hard copies of most items, which were then cataloged and made available for checkout. This greatly reduced the efficacy of the e-reserve initiative and increased library costs, as each item required a barcode for checkout purposes as well as more cabinets to store the documents

The file size issues were also compounded by an error-prone scanning process. Any document disrupted during initial scanning required a complete rescan, adding time and effort for staff to complete the job. The beginning of each semester became a big challenge to the library, and even though several staff members pitched in to help process requests, it soon became clear that the number of staff available to process submitted e-reserve was insufficient to handle the demand in the time allotted.

SOLUTION 1: PDF FILES FOR E-RESERVE MATERIALS

In 2005, the Ryan-Matura Library started using Adobe Acrobat 6.0 to scan e-reserve materials and upload the files as attachments to the associated records in the III system. Utilizing the PDF format resulted in immediate improvements in image quality of scanned text; final file sizes were much more manageable, so users no longer needed to download multiple image files for a single document. Users found the service much more user-friendly and less frustrating. An additional benefit to the library was that paper

backup copies with barcode were no longer required, saving the library space, staff time, and money.

ISSUE 2: PROCESSING E-RESERVE REQUESTS

When the e-reserve service was first introduced at Sacred Heart University, faculty had to visit the library to complete a request form, submit a paper form through interoffice mail, or e-mail a request form. E-reserve requests submitted on paper resulted in instances where either the form or the original material were mishandled or lost. E-mail requests were also problematic, since faculty members would place requests through e-mail but would have to submit the hard copy via interoffice mail. Sometimes documents went to the wrong department or never arrived and the library staff was not able to track the mail. The asynchronous communication between faculty and the e-reserve staff delayed service delivery and increased frustration. These issues made it difficult for them to embrace e-reserves.

SOLUTION 2: REQUEST TRACKING DATABASE

In 2005, a Microsoft Access database was created to store information regarding each e-reserve request received from faculty. The database was also used to monitor the frequency of usage for each electronic document on file and to track how many courses and/or instructors were utilizing the same document across multiple semesters. In instances where the same document was reused in subsequent semesters, permanent links from subscribed databases were retained so staff could easily retrieve the document. The database also assisted faculty in tracking the readings assigned to students. Before the beginning of the semester, when faculty called or e-mailed e-reserve requests, library staff was able to retrieve the information from the database quickly and assist the instructor in identifying which resources had been used in prior terms. While the database improved the library's e-reserves workflow, it did little to streamline the faculty request process. In 2006, the Digital Library Development Department and the Office of Instructional Technology (OIT) initiated a project with the overall goal of simplifying the entire process, from improving the faculty request process to reducing processing turnaround time and easing student access to e-reserves. During initial discussions, it was

agreed that simplifying the request process was important and that a Web-based system would be ideal for faculty. An electronic e-reserve request form and tracking application were developed using a combination of ColdFusion and Adobe Flex based technologies that submitted requests directly to a tracking database, which helped to eliminate misplaced or mishandled requests as well as keep track of requestor information, document specifics, date of request, and course information.

Incoming requests were sent directly into a Microsoft Access database. Library staff reviewed new requests and updated previously submitted requests through an interactive Flex-based interface. Once requests were submitted, library staff sorted documents into the following categories: (a) articles that could be found in the library's subscribed research databases, (b) copies of articles or book chapters owned by the faculty member or library, and (c) articles to be acquired through interlibrary loan. Library staff identified persistent links to articles available through research databases licensed by the library. Articles or chapters provided by the faculty member or obtained from the library were scanned and saved as PDF files, as previously described. All other resources were obtained through interlibrary loan.

This new system improved the library staff's ability to match faculty e-reserve requests with documents and reduced the processing turnaround time from three days to less than one day. The library has had positive feedback from faculty on the ease of use and simplicity of the new request submission system. With the success of the new request system, the library began to consider alternative methods for delivering e-reserves to students.

ISSUE 3: ACCESSING E-RESERVE MATERIAL

Since the III reserve module was not integrated with the university's user authentication system (Active Directory/LDAP), students had to provide additional credentials to get to e-reserves. Access was based on a student ID number assigned by the university's IT department and subsequently synchronized with the library's system. When a user attempted to access library resources, he or she would be required to enter this unique number. Since this ID number was not used to access any other university services (e.g.,

Blackboard, e-mail, etc.), users were understandably confused. Adding to the confusion, once access to the system was granted, users could search through and access all course materials available in the system for a specific instructor name or course number but not for an individual class section. Students could not tell which readings were for their particular section.

SOLUTION 3: UTILIZE BLACKBOARD CONTENT MANAGEMENT SYSTEM

The final part of the 2006 initiative to streamline the library e-reserve system focused on improving the student experience. The university already used the Blackboard course content management system, so it seemed logical to deploy the Blackboard content management system to store and deliver e-reserves to students. This system would take advantage of the capabilities of the integrated Blackboard course and content systems to provide a robust, scalable solution, simplifying student access to resources by making them available directly through their Blackboard course pages and eliminating authentication problems.

In the new workflow, after processing e-reserves, the library's reserve assistant signs into the Blackboard system with administrator privileges to create an instructor-specific folder within the content system (see Figure 1). Within each instructor folder, subfolders are generated for each course that the faculty member teaches in a given term. Requested documents are then added to the appropriate folder, under the first author's last name, with the full title of the article. The reserve assistant then adds a direct link from the faculty member's Blackboard course page to the appropriate course-specific folder (see Figure 2). This provides automatic read-only access to all of the materials within the folder to only the students enrolled in that particular section. This has greatly simplified and enhanced their ability to obtain and utilize these valuable learning resources.

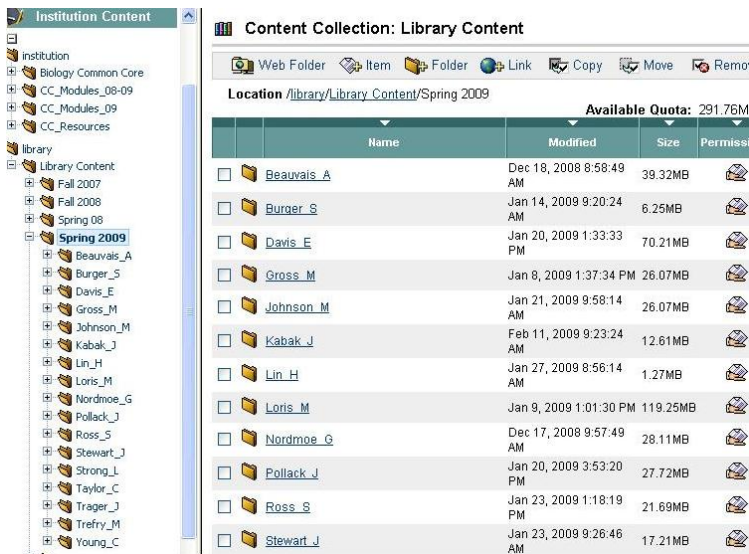


FIGURE 1 Instructor Assigned Folders in the Blackboard Content System

Note. A unique folder is created for each instructor in the Blackboard content system. This folder will contain subfolders for each course taught by the faculty member in a given semester. Scanned PDF files and permanent links to articles within subscribed research



FIGURE 2 Direct Link to “E-Reserve” Folder in Blackboard Course.

Note. A navigation button labeled ‘e-reserves’ is placed in each requestor’s course. This navigation button provides quick, single-click access to all available e-reserves for students enrolled in the course.

An additional benefit of utilizing the Blackboard content management system for hosting e-reserves is the ease of using the same materials across multiple sections. Since access to materials is based on the parent folder, it is straightforward to link to this single folder from multiple sections. In a similar manner, empty folders can easily be reused in subsequent terms.

OUTCOME

Since the introduction of the Blackboard-based e-reserve system in 2006, the Ryan-Matura Library at Sacred Heart University has received positive feedback from both faculty and students regarding the simplicity and convenience of the e-reserve process, particularly compared to previous solutions. The new electronic request form offers faculty the option of having the reserves assistant either link their content folders to their Blackboard courses or post a link to the reserve documents in the online catalog. We have seen a marked increase in faculty opting for automated linking to Blackboard. In 2008, the first year that e-reserves were completely managed using Blackboard, 99% of the faculty who used e-reserves preferred to have them delivered directly to their students through Blackboard. From 2008 to the present, the number of faculty who use the new e-reserve system has remained steady. Although we have not seen a big increase in the number of faculty users, we continue to receive positive feedback about the service. We have done some informal surveys by talking to three groups of faculty members: Those who are using the service, those who used the service before but are not using it now, and those who do not use the service. We have learned that those faculty who are still using the service find the system very helpful and time saving. It provides them convenience and reduces confusion. Faculty who used the service before but do not use it now told us they digitize their own documents or they take the advantage of online databases, and they are confident in using Blackboard to place their teaching materials. The library works with these faculty to remind them about documents that cannot be reused due to copyright. Of the faculty who do not use the system at all, it appears that some of them are not aware of the service, and some of those who are aware of it do not know how it works and how it can help them with their courses.

CONCLUSION

Through the collaborative efforts of the library and Instructional Technology personnel involved in this project, Sacred Heart University was able to develop an integrated, streamlined, and efficient solution for the request, processing, and delivery of e-reserve materials to members of the university community. What we learned from the project is that e-reserves play an important role in the university's teaching and learning, so a robust system is critical. Our newly designed system will help to support and promote these institutional goals through cost effectiveness and ease of use. Furthermore, our system helps to promote the usage of Blackboard, further facilitating the learning process. Currently, the library promotes the e-reserve service to faculty by sending them e-mail before the beginning of each semester, encouraging their participation and reminding them to place their requests early, and by introducing the service at each new faculty orientation session. However, to reach a larger user population, we obviously need to collaborate more with the academic departments to raise their awareness of the service. We should take advantage of the library's liaison program (a subject librarian working directly with an academic department) to alert faculty members to the service. The university also hosts a number of social occasions such as faculty/ staff lunch, sports games, Professional Day, and Founder's Day, which are good opportunities for library staff to reach faculty members and further market the service. With the improved system in place, we are confident that our e-reserve service will continue to benefit our faculty and students.