Abstract
This case study of a medium-sized academic library reports the evolution of reference service from a traditional reference desk to a two-tiered reference system to a “one-stop shopping” model of providing public service that eliminates a physical reference desk while maintaining service for walk-in patrons. A pilot project tested the feasibility of eliminating a physical desk for providing reference service. The project consisted of a review of literature, discussion and analysis, proposal, implementation, marketing, and assessment. The pilot project in this case study can be used as a model for other small-to-medium-sized academic libraries for eliminating a physical reference desk or as a springboard for considering other multi-tasking options when experiencing declining reference desk questions.

Introduction
Faced with declining reference questions, many small-to-medium-sized academic libraries may find it advantageous to eliminate a physical reference desk in order to provide other essential online and in-person public services. Previously, the authors of this article would have argued that a physical reference desk was a necessity. However, because of an active library instruction program and a serious decline in the number of reference questions, librarians at Northwest Missouri State University (hereafter Northwest) have discovered that a physical reference desk is unnecessary at their library. Northwest has not had a traditional reference desk since the summer of 2001.

The Northwest library instruction program includes course-embedded presentations for four general education classes, including Freshman Seminar, English Composition, Fundamentals of Oral Communication, and Computers and Information Technology. Upper level and graduate instruction is focused on discipline-specific sources and search strategies, as well as critical analysis and evaluation of information. Online library instruction grew with the proliferation of faculty who rapidly adopted course management systems. As the

Joyce A. Meldrem is Head Librarian for Collection Management, email: meldrem@mail.nwmissouri.edu; Lori A. Mardis is Information Librarian, email: lmardis@mail.nwmissouri.edu; and Carolyn Johnson is Information Librarian, email: carolyn@mail.nwmissouri.edu, at Northwest Missouri State University, Maryville, Missouri.
university moved into online instruction and Web-augmented courses, the librarians delivered instruction via Web-based courseware, tutorials, and customized course pages on the library’s Web site. All levels and formats of library instruction are marketed through personal contacts, printed brochures, college meetings, and the library’s Web pages. Although the direct impact of this instruction program on the demand for reference service cannot be proven, the decrease in traffic at the reference desk continued as the instruction program matured.

Because of the decline in questions at the reference desk, the sophistication of the questions asked, the increased instruction, the increased Web page development, and the proliferation of online subject databases, the librarians decided to explore other methods of offering reference services. In essence, the shift in patron demand created the need for librarians at Northwest to reassess their service priorities. As Barbara Ford wrote, “[a]cademic librarians must ask whether their clientele really need a reference desk or whether other services would meet their needs in a more effective manner.” Furthermore, she asked, “…could we as librarians devote our efforts more effectively to developing more appropriate and useful services for our primary clientele?” In addition to Ford, other librarians have addressed similar concerns about the best way to provide reference services, such as adding research consultations and instruction, tiered reference, combined circulation and reference desks and staff, reference roving, and changes in staffing. After trying a tiered reference approach, using graduate and undergraduate student employees for directional questions, Northwest decided to pilot and later implement a customer service desk approach. Unlike other combined service desk models that cross-train reference librarians to work at a circulation/reference desk, the Northwest model places librarians in their offices, at their own desks, where they can respond to the increased demand for group instruction and Web-based library services. This article describes the library’s environment, the evolution of the elimination process, customer feedback, implementation of a “one-stop shopping” desk, and assessment.

Environment
Northwest is a public university with an undergraduate and graduate enrollment of 5,223 FTE (Northwest Admissions Office). Most of the students attending Northwest are traditional (aged 18–24) students. Owens Library, the main library, houses more than 250,000 book volumes; 27,000 bound periodical volumes; 80,000 government documents; 16,000 microfilm; and 1 million microfiche.

Owens Library reference employees currently include six faculty librarians and one paraprofessional who are all members of the Information Services Team, the reference and instruction work group. Within the team management structure, both librarians and paraprofessionals experience a high degree of autonomy as they develop individual and team goals that support the university’s mission. For example, in order to foster professional development in both online and traditional delivery of library services (one of the team’s goals), the Information Services Team hosts an annual “Brick & Click Libraries Symposium.” The flexibility of this work environment encourages creativity, innovation, and out-of-the-box thinking.

Students living in residence halls have access to the library’s Web site through a university PC or notebook in each room and multiple computer labs on campus. Librarians are available to answer reference questions in person, by phone, via e-mail, and through a “Help with Research” one-on-one appointment service. These services are readily available by clicking on the “ASK” button featured on each library Web page. Northwest students prefer full-text sources and databases on the Web to their print counterparts, and 79 percent of the faculty use a course management system for their online courses or as a management tool for their in-person courses.

Evolution
Librarians at Owens started considering restructuring reference service as the instruction program grew, library Web site usage increased, requests for additional reference librarians were denied, and the university moved to more online and Web-augmented courses. Library instruction grew from 17 presentations delivered to 302 students in 1990–91 to 238 presentations delivered to 4,610 students in 2000–01. In addition, reference questions declined from an annual high of 20,801 in 1993–94 to a low of 1,405 in 2000–01. In fall 1994, 10.7 questions per hour was the average; in spring 2001, it was 3.5 questions per hour. Librarians staffed the physical reference desk until summer 1997.
Web site usage on the library's home page grew 18 percent, from 103,955 hits in 1997–98 to 122,928 hits in 2000–01. The same librarians that offered traditional desk-bound reference service and library instruction were also the ones responsible for creating and maintaining the library’s 500+ Web pages.

As library instruction continued to grow, the librarians found that potential reference questions were being answered on a proactive basis in the classroom. Since most Northwest students received multiple points of library instruction, the remaining reference questions became more sophisticated. For example, the question changed from “Can you tell me where the theatre periodicals are?” to “Which database would be best to look for articles about how theatre in the U.S. prior to the 20th century was influenced by politics?” Students were now aware that a subject database existed and there was an easier way to find information than to browse through the theatre periodicals on the shelf. This change convinced the librarians that the time spent in instruction—teaching many people the same thing at once through interactive, guided practice—was a better use of time than sitting in wait for someone to ask a question. More library instruction also provided student empowerment at the beginning of the research process rather than after they tried for hours to locate information themselves without success, experiencing great frustration with the library and its resources.

**Tiered Reference**

Due to the increased library and Web publishing demands, an alternative two-tiered reference desk approach was implemented. In the tiered approach, the make up of the reference desk personnel changed slowly over time in order to best utilize the work force available. For example, the librarians integrated a graduate assistant (hereafter GA) into the reference desk schedule during hours when traffic was low. The GA completed a thorough training program that covered brief answers, procedures, and guidelines for the types of questions that he/she was expected to answer and the types of questions to refer to the librarian on call. The librarians defined four levels of service as:

- **Level 1:** directional and referral
- **Level 2:** direct patrons to source (refer to librarian)
- **Level 3:** show patron source and instruct in its use (refer to librarian)
- **Level 4:** search for in-depth information (refer to librarian)

As the number of questions continued to decline, Presidential Scholars (undergraduate scholarship students who must maintain a 3.5 GPA) were added to the desk schedule. Both GAs and Presidential Scholars learned about interlibrary loan, campus directions, library policies, instruction referrals, the various library collections, how to find information in the collections, opening/closing responsibilities, and appropriate work to do at the desk while waiting for questions.

**The Implementation Process**

After further decline of reference questions and loss of student employees to staff the two-tiered reference desk, the information services team assigned a GA in summer 2001 to conduct a review of reference services in academic libraries. The GA found that, due to the technological skills of academic library patrons, access to full-text articles, library catalogs, and online library tutorials/guides, libraries across the nation were experiencing a decline in reference questions.

Several librarians from the information services team discussed the review of literature with the dean of libraries. They described how other academic libraries responded to the decline in reference questions as listed below:

- improved signage to encourage more questions;
- redesigned the arrangement of physical reference desk(s) to make the area more approachable;
- marketed research assistance by appointment to increase awareness of in-depth research help available;
- staffed physical reference desk in a tiered-approach with student employees, paraprofessionals, and/or librarians to prioritize staff workload;
- conducted focus groups to understand the change of environment and student attitudes;
- provided online reference service to appeal to technologically savvy patrons;
- merged service desks to provide one focus point for service.

While considering all of these approaches, the dean became intrigued with the idea of a “one-stop shopping” customer-service model for delivery of library services. The dean appointed a task force to study the feasibility of merging the circulation/reserve/interlibrary loan and reference desks.
The task force consisted of an equal number of paraprofessionals and librarians from public services areas. The members discussed the GA's review of literature, focusing on an article entitled "Exploring New Service Models: Can Consolidating Public Service Points Improve Response to Customer Needs?" Paraprofessionals were especially interested in the model because they felt it would decrease the amount of time needed to answer a patron's question. Both paraprofessionals and librarians felt it was stressful and inefficient for patrons to be referred from desk to desk. However, several areas of concern presented themselves. The task force worked with the appropriate library areas to come to a satisfactory conclusion regarding student training, the amount of on-call hours needed, and the possibility of patrons waiting in line at one desk. When those concerns were addressed through discussion and consensus, the task force recommended to the dean of libraries a trimester-long pilot project that would create a combined library services desk. The dean approved the pilot project.

Before presenting the rationale, benefits, and logistics of the project at a library-wide meeting, the task force created a proposal for the project. Using the former circulation/reserve/interlibrary loan desk, the library would now provide a “one-stop shopping” model for patron services. At this desk, patrons would check out library and interlibrary loan materials, receive building location assistance (location of copiers, restrooms, collections, etc.), and receive on-call reference assistance from a librarian or paraprofessional. The proposal also included the following elements:

- add reference question-referral protocol and procedures to the training manual for student employees at the new library services desk;
- continue using a paging system for reaching on-call reference librarians during office hours or paraprofessionals during their work shifts, including evening and weekend hours;
- develop a "Get an Answer" form for patrons to request reference help when neither reference librarians nor paraprofessionals are available;
- develop a method for replacing signage;
- market the new location for reference service through the campus electronic message board, the university newspaper, and university-wide faculty meetings;
- conduct assessment through patron, student employee, staff, and faculty surveys.

After presenting the proposal for the pilot project at the library-wide meeting, task force members determined that, in general, library personnel were very positive about the project because of the proposed benefits for the patrons.

Project members from the Access Services and Information Services teams worked on implementing the project for fall 2001. Implementation included retraining former circulation/reserve/interlibrary loan desk student employees, advertising the service as previously outlined, and marketing the change to faculty. Librarians found that the faculty were very receptive to the change during fall departmental college meetings.

Other implementation efforts included placing doorbell call buttons at the library services desk so that the librarian on call could be notified of a reference question. Each call button was labeled with the name of the librarian(s) in each office. In addition, two-way radios were added to the paging system so librarians could be reached when away from their office (but still in the library) during their scheduled hours. An on-call schedule was posted at the library services desk. Large banners were temporarily placed over the circulation/reserve/interlibrary loan and reference desk signage. Access Services and Information Services team members developed written policies and procedures for referral of reference questions. Access Services team members retrained circulation/reserve/interlibrary loan desk student employees.

Since fall 2001, the library has continued a “one-stop shopping” library services desk where patrons go for answers to reference questions, research appointments, interlibrary loan pick-up, circulation, and reserves. As reference questions are received, library services desk employees (usually student employees) refer the patrons to the librarian scheduled for on-call hours using walkie-talkies or doorbells that ring in the on-call librarians’ offices. The reference librarian meets the patron at the library services desk and responds to the questions. See Figure 1 for the physical layout of first floor.

This arrangement works for Owens Library because of the proximity of the library services desk to the first floor reference offices. For libraries considering this model, the doorbell system would work well if the reference offices are visible from the circulation desk because desk assistants can readily determine who is
already helping a patron and who is available. However, in libraries where the reference offices are not in view of the circulation desk, an on-call schedule that lists two librarians for each hour could be developed; when the first is busy, the call could be referred to the second one. Both on-call librarians would sign out a walkie-talkie from the circulation desk during their scheduled shift. This would allow the circulation employee to contact either librarian as needed.

Customer Satisfaction Comparison
In fall 1994, a brief, 6-question survey was developed to determine customer demographics and to collect patron satisfaction levels with the service received at the traditional reference desk during a selected, typical week. At that time, everyone who worked at the reference desk was a librarian or a reference paraprofessional. The survey was repeated in fall 1998 during the two-tiered reference desk model; a GA and Presidential Scholars sat at the reference desk and librarians were on call in their offices. The survey was again repeated in fall 2001 after the elimination of the physical reference desk. Surveys were handed to each patron (student, staff, and faculty) who received assistance from someone at the reference desk in 1994 and 1998. In 2001, surveys were handed to patrons who asked a question and/or checked a book out from the circulation/reserve/interlibrary loan desk. Since fewer surveys were returned as the number of questions asked declined over the years, the information gathered during each sample week is more anecdotal than scientific. There were 52 surveys returned in 1994, 15 in 1998, and 27 in 2001.

The surveys revealed that no matter who was at which desk, patrons felt welcome to ask their questions 98 to 100 percent of the time. Patrons felt that librarians understood their questions 98 to 100 percent of the time, and 92 to 96 percent of the time questions were answered to the patrons’ satisfaction. Finally, 98 to 100 percent of the patrons said they would feel comfortable returning to ask for help in the future.

Library Employee Assessment of Pilot Project
In addition to the customer satisfaction data gathered, new data about the pilot project was collected for assessment purposes. Task force members created and distributed surveys to full and part-time library employees. The survey indicated that student employees felt less stressed about working at the desk because they knew that they could refer all questions to the on-call librarian, any librarian available in their office, or to a supervising paraprofessional. Student employees discovered that the reference librarians were very helpful and willing to assist patrons! They also gave constructive feedback about changing some of the procedures and the amount of scheduled on-call hours.

Paraprofessionals and professionals liked that the patrons were getting less “runaround” and noted that patrons liked the “one-stop shopping” method of delivering public services. All library employees reported that patrons were getting professional answers by having questions referred to reference personnel. Because paraprofessionals disliked having patrons waiting for assistance, they recommended changing some of the procedures for answering a question when the on-call librarian was already assisting a patron. Therefore, the librar-
ians who were not on call agreed to answer questions any time they were in their offices with the door open. This further increased the availability of librarians and the number of reference hours that could be covered. Reference personnel were more productive during scheduled on-call reference hours because they could work in their own offices using software they needed to produce Web-based library resources and teaching tools, such as interactive, electronic games, learning objects, and animated tutorials. This multi-tasking environment added value to reference services because it allowed librarians to provide walk-in reference while supplying Web-based reference and instructional resources, and answering online requests. In addition, this environment allowed librarians to work on group projects and to easily supervise student employees while on call.

**Conclusion**

This article provides a model for other small to medium-sized libraries to consider when responding to declining numbers of reference questions. By following a similar decision-making and implementation process for eliminating a physical reference desk, academic librarians can create a “one-stop shopping” model of providing public service. The model gives reference librarians more time and energy for producing information literacy curriculum and developing Web-based resources, essential services for libraries serving students and faculty in traditional, blended, and online courses.

**Notes**

