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The Cost of Interlibrary Loan Services in a Medium-Sized Academic Library

Ted E. Naylor

ABSTRACT. Interlibrary loan has traditionally been the main access to information beyond the individual library collection. The increase in access to document delivery services and full-text databases, however, has created the need to evaluate interlibrary loan services within the overall access environment. One of the most important factors in this evaluation concerns the cost to provide interlibrary loan. The purpose of this article is to provide the results of a study of one year's interlibrary loan expense at the Library at Wichita State University in Wichita, Kansas. The study was conducted to identify areas of greater and lesser interlibrary loan expense, and to serve as a comparison to the results of cost studies based upon data collected from large research libraries. The final results are also intended to serve as a reference point in determining how best to balance the use of interlibrary loan with commercial document delivery sources. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: getinfo@haworth.com]*

Historically, the interlibrary loan (ILL) service has been the main access point to information unavailable in the individual library collection. Libraries share resources through the ILL process and have done so for many years. The access environment, however, is rapidly changing. Through the explosion in commercial document delivery services, full text systems, and Internet access, many more

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information access points are available without ILL intervention in the process. The researcher may now easily order and receive material via computer, telefacsimile, or other electronic means.

When an article is located and ordered from a commercial vendor, the cost is usually clear and includes all transaction and copyright fees. This type of tangible cost has proven difficult to determine for traditional ILL. The knowledge of the cost of ILL has become increasingly important when attempting to balance the expense of commercial document delivery and full text databases with ILL service. Is it more cost effective to provide patron access to commercial sources as opposed to obtaining the material from another library? Is document delivery a cost effective alternative to the more traditional ILL structure in libraries? In what areas may ILL expenses be reduced or eliminated without significant reduction in service? Are staff levels at the correct number?

This article contains the results of one library's attempt to begin the process of attempting to answer these questions by analyzing the cost to provide ILL service in the Ablah Library, at Wichita State University (WSU) in Wichita, Kansas. Past ILL cost studies have been completed based upon data collected from large research libraries. The results of this cost study, completed at a medium-sized academic library, are intended to provide a starting point for the assessment of traditional ILL in the smaller library. A comparison of this cost with the cost of commercial document delivery at WSU is also included.

Wichita State University, in Wichita, Kansas, serves a student body of approximately 15,000 and a faculty of 467. It offers 58 undergraduate, 45 masters, and nine doctoral degrees in 75 fields of study. The Ablah Library employs 23 librarians and 33 clerical staff. The ILL staff at Ablah consists of one professional, two full-time library assistants, and approximately 60 student assistant hours per week. Ninety-eight percent of the borrowing and nearly 90% of the lending requests are processed via the OCLC ILL system. The majority of transactions (approximately 70%) are completed within the State of Kansas and are received and returned by the State maintained courier system. The Ablah Library also holds membership in the AMIGOS and BCR consortiums which includes the free exchange of material among member libraries. Photocopied

articles are 72% of the material borrowed. More books are lent (58%) than photocopies supplied to other libraries.

Before beginning the WSU ILL cost study, the literature was examined to identify any previous completed studies based upon data collected from libraries comparable in size to the WSU Library. The Palmour Study,¹ completed in 1972, Jo Ellen Herstand's study,² from 1981, and the ARL/RLG ILL cost study³ published in 1993 were examined. The Palmour sample consisted of data collected from a basic group of 80 libraries from which twelve were chosen for detailed analysis. Palmour determined an average cost of \$5.82 per lending transaction and \$7.61 per borrowing transaction.⁴ Herstand calculated the ILL cost for the Library at the University of Oklahoma. Her figures totaled \$4.98 per borrowing transaction and \$5.45 per filled lending transaction.⁵

The ARL/RLG study is the most recent and comprehensive study of ILL costs. Cost figures from 76 large research libraries in the United States and Canada were collected and analyzed and the results showed an average of \$18.62 to borrow an item and \$10.93 to lend an item.⁶ The author's methodology, consisted of identifying categories of expense and then determining specific expenditures within each category. When specific expenses were unavailable, cost estimates were completed. The study then further divided the actual and estimated expense, within each category, into borrowing and lending costs.

The results of all three studies were based upon data supplied from large libraries which employed an average of five full-time staff members in ILL and, in the case of both the Palmour and Herstand studies, contain results over 15 years old. The methodology of the ARL/RLG study was applied to WSU ILL cost data collected from one year's operations. The final figures could then be used for the comparison of large library costs to those at a medium-sized library to determine any significant similarities or differences.

THE WICHITA STATE STUDY

Data for the study was collected during the University's fiscal year of June 1995 to July 1996. The categories of expense identified

in the ARL/RLG study were used as the basic structure of the WSU study.⁷ The WSU cost figures were grouped into six categories of expense: salaries, network and communication fees, courier and mail delivery, photocopy, equipment, and supplies. The monetary figures in all categories were obtained by examining invoices and monthly billing statements, or by estimating cost percentages based upon overall library expense and then rounded to the nearest dollar amount. Effort spent to complete borrowing or lending requests was assigned a percentage of overall staff time based upon observation and estimation. These percentages were then applied to the monetary amount, in each category, to determine the cost either to borrow or lend material. The ARL/RLG study combined the average borrowing and lending costs to calculate a total average transaction cost of \$29.55. Because the WSU study is based upon data from one library, the individual cost to borrow and lend cannot be combined for a total transaction cost. The WSU ILL cost to process a borrowing request, for example, would need to be combined with the supplying library's cost to process a lending request in order to calculate a total transaction expense. The other library's expenses cannot be calculated so the WSU ILL cost to borrow or lend, on a per transaction basis, must remain separate. The final figures, by category and percentage of expense are listed in Table 1.

The total WSU ILL expense, during the study time period, was calculated at \$152,314. An estimated 69% of staff time was spent processing borrowing requests at a total cost of \$106,373. Lending expense was calculated at \$45,941. During the study period, WSU

TABLE 1. Overall Expense

	Borrowing		Lending		Total	
	Cost	Percent	Cost	Percent	Cost	Percent
Salaries	\$79,258	74.5%	\$28,429	61.9%	\$107,687	70.7%
Networks	\$20,368	19.1%	\$3,440	7.5%	\$23,808	15.6%
Delivery	\$4,391	4.1%	\$10,028	21.8%	\$14,419	9.5%
Photocopy	\$420	0.4%	\$2,100	4.6%	\$2,520	1.7%
Equipment	\$1,216	1.1%	\$864	1.9%	\$2,080	1.4%
Supplies	\$720	0.7%	\$1,080	2.4%	\$1,800	1.2%
Total	\$106,373		\$45,941		\$152,314	

ILL processed 13,340 borrowing requests of which 11,480 were filled. Lending requests totaled 23,090 of which 13,088 were filled. In order to determine a per transaction cost, inclusive of both filled and unfilled requests, the formula devised by Stephen Dickson and Virginia Boucher was used.⁸ The formula is as follows:

$$F = \frac{C}{f + .55u}$$

F = Cost per filled lending request

C = Total cost of interlibrary borrowing or lending

f = Number of filled requests

u = Number of unfilled requests

Unfilled requests were estimated to be .55% of filled transactions. Although Dickson and Boucher applied this formula only to lending transactions, for the purposes of the WSU study, the .55% estimation was applied to both borrowing and lending unfilled transactions. To determine the per transaction borrowing cost, the formula is:

$$F = \frac{\$106,378}{11,480 + (.55 \times 1,860)}$$

$$F = \frac{\$106,378}{12,503}$$

Cost per filled borrowing transaction totals \$8.51. Unfilled borrowing requests total .55 times \$8.51 for a total of \$4.68 per transaction. The lending transaction formula is:

$$F = \frac{\$45,941}{13,088 + (.55 \times 10,002)}$$

The per filled lending transaction cost is \$2.47. The unfilled cost is .55 times \$2.47 for a total of \$1.36 per transaction.

$$F = \frac{\$45,941}{18,589}$$

These figures reflect identified costs which directly impact ILL. Indirect expenses, such as the cost of circulation and acquisition operations, are not included. The cost to provide material through commercial document delivery services are also not included in the study. These fees will be discussed later in the article in comparison to the cost to provide traditional ILL. The following is a category by category discussion of WSU ILL expenses.

STAFF SALARIES AND BENEFITS

This category includes the cost of all salaries and retirement and medical benefits paid to WSU ILL personnel. Benefits were calculated at 15% of individual staff members' salaries. Table 2 contains the overall expense.

During the study time period, WSU ILL staff was paid \$95,507 in salary plus \$12,180 in benefits for a total of \$107,687. The one professional position accounted for the highest expense at 33.6% of the total personnel expense. On the other end of the scale, student assistants were paid 13.3% of the total. Student assistants perform the majority of the tasks involved in the lending process, at low cost, which accounts for the majority of the nearly 50% difference in borrowing and lending expense. Staff salaries and benefits comprise the largest expense category at 74.6% of borrowing, 62.2% of lending, and an overall 70.9 % of total costs (see Table 1). The next highest expense category was in network fees.

NETWORK AND COMMUNICATION

This second highest expense category includes all costs associated with fees involved in communicating by computer or telephone. The majority of network and communication fees (85%) were incurred in searching, identifying, and ordering borrowing requests on OCLC. Downloading and updating lending records were a much

TABLE 2. Staff Expense

	Base Salary	Benefits	Total	% of Total
Professional	\$31,507	\$4,726	\$36,233	33.6%
Library Assistant II	\$25,178	\$3,777	\$28,955	26.9%
Library Assistant I	\$24,516	\$3,677	\$28,193	26.2%
Students	\$14,306	\$0	\$14,306	13.3%
Total	\$95,507	\$12,180	\$107,687	

lesser expense. Nearly all WSU ILL borrowing and lending requests were completed via the OCLC system while the remaining requests were sent or received by mail or telefacsimile.

During the study, OCLC expense averaged \$1900 per month plus an additional \$4000 in yearly modem and access fees for two dedicated line terminals. After the deduction for the lending credits of \$3466, OCLC expense totaled \$23,550 during the study period.

Telephone expense is also included in this category. The line charge and long distance costs were minimal at \$258 during the study time period. Not included in this category are telefacsimile charges which are covered under the courier/mail delivery category.

DELIVERY

This category consists of all costs to loan books, return borrowed books, and supply photocopied articles to requesting libraries. The primary method of delivery is the Statewide courier system provided by the Pony Express Courier Corporation. Pony Express provides daily service among over 100 Kansas academic, public, and special libraries at a cost of \$250 per month. This contract, negotiated through the Kansas State Library, significantly reduced the amount of postage expense during the study. Postage was paid on only 30 percent of all borrowing and lending material. The postage amount was based upon an average, determined by observation of postage costs of incoming material, of \$2.00 per book loaned or returned and \$.60 per photocopy supplied.

A total of 6,825 books and photocopies were borrowed or received and 8,461 items were loaned or supplied via the State courier at a total cost of \$3,000. At a cost of \$.20 per item, courier delivery was much more economical than postage. During the study, 3,280

books were loaned and 2,576 photocopied articles were supplied out of State or to foreign libraries at a postage expense of \$8,106. Returned books borrowed for WSU patrons, from out of State or foreign libraries, totaled 1,430 at a postage expense of \$2,860. Telefacsimile delivery charges were \$453 of which \$181 was spent for borrowing requests while \$272 was spent to supply articles by fax.

Borrowing delivery charges totaled \$4,391 during the study. Lending delivery expenses were \$10,028 for nearly 70% of the total courier, mail and telefacsimile charges. Expenses in this category made up 9.2% of total costs.

PHOTOCOPY EXPENSE

One photocopier was utilized almost exclusively for ILL purposes. Any use by other Library personnel was minimal. The total number of pages copied, during the study time period, totaled approximately 37,500. In order to include the cost of all rental and maintenance agreements, toner, and paper, the ARL/RLG suggested per page cost of \$.07 was used to calculate the WSU ILL photocopy expense.⁹ An estimated 30,000 pages were supplied to requesting libraries, during the study, at a total cost of \$2,100. The photocopy cost for borrowing operations was approximately \$420 for a total lending and borrowing cost of \$2,520.

EQUIPMENT

Included in this category are the costs of all computer hardware and software located in ILL during the study. Hardware consisted of two dedicated line OCLC terminals and two terminals used for the SaveIt ILL software and for access to the WSU online library catalog. The purchase price of the telefacsimile machine is also included in this category.

The total purchase cost for all equipment in ILL, calculated from invoices, totals nearly \$10,000. The ARL/RLG study estimates the "life" of equipment and software to be approximately four years.¹⁰ Equipment is then estimated upon 25 % of purchase cost for equipment acquired within the last four years. Due to upgrades and replacement, all WSU ILL equipment and software was within the

four year range. At 25 % of the purchase price for all equipment, the total cost was \$2,500. The final category, supplies, represents the smallest ILL expenditure during the WSU ILL study.

SUPPLIES

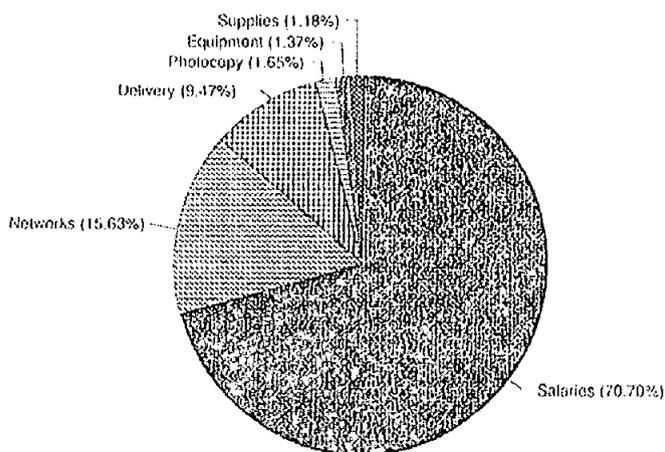
Included in the supply expense category are items such as printer ribbons, paper clips, and other materials routinely "consumed" in the ILL process. Costs in this category were determined by an assessment of supply use which was then applied to the overall Library supply cost. The overall supply cost was estimated to be approximately \$150.00 a month for a total of \$1800.00 per year. Not included are the paper and toner for the photocopier and tele-facsimile unit which are included in other categories. Sixty percent of supply cost was estimated to be in the lending process.

CONCLUSION

Figure 1 illustrates the overall breakdown of WSU ILL expense.

It is apparent that personnel costs were by far the greatest expense in providing ILL service at WSU. Salaries and benefits expense was

FIGURE 1



55% higher than the next category, networks, which was a distant second at 15.7% of overall cost. Expense in each of the remaining categories was less than 10% of the total. The dominance of personnel costs is comparable to the ARL/RLG study which determined an average of 77% of participating library expense was in the payment of salaries and benefits.¹¹ This high percentage of staff costs indicates ILL continues to be a labor intensive operation in libraries of all sizes. Books must still be pulled from the shelves, articles photocopied, and data entered into the computer.

Based upon the findings of the ARL/RLG and WSU ILL studies, the evaluation of the ILL department within the individual library, whatever the size, should focus mainly upon personnel costs. The main question, in light of the cost of ILL salaries and benefits, concerns whether or not the staff members are operating at maximum effectiveness and efficiency. Can the workflow be streamlined to reach maximum efficiency at the current staff level? At WSU, the ILL librarian accounts for nearly 34% of the salaries and benefits. If it is possible to increase efficiency, may the librarian be assigned duties in other areas of the library?

The results of the WSU study are also useful in comparison to the cost of commercial document delivery. During the study time period, several commercial document delivery sources were utilized in ILL. The main commercial source used was Carl Uncover when material was needed on a "rush" basis. Other sources such as NITS and the Chemical Abstracts document delivery service were utilized to obtain difficult to locate material. One hundred and sixty-five items were obtained through commercial sources at a cost of \$2,520 which translates into a per transaction cost of \$15.27. In a simple comparison, this cost is over 80% higher than the \$8.51 to obtain the material through ILL. The reward for this 80% higher cost was in the speed of delivery. Requests received from Uncover averaged 24 hours while those received through other libraries averaged seven days. The next step in the decision-making process is to determine if there is a "need for speed" on the part of the majority of WSU ILL patrons and if this speed should be subsidized by the Library.

At this point, traditional ILL is still the main access point for material in the WSU Library. Currently, "armed" with the basic

cost of ILL, this proves to still be the most cost effective method to obtain material and appears to continue to meet the needs of the WSU patrons. Document delivery services are used as a supplement to traditional ILL. This situation may change as more journals are canceled because of rising subscription costs and patron demand for quicker access to material may grow.

NOTES

1. Vernon E. Palmour et al., *A Study of the Characteristics, Costs, and Magnitude of Interlibrary Loans in Academic Libraries* (Westport: Greenwood Publishing, 1972).
2. Jo Ellen Herstand, "Interlibrary Loan Cost Study and Comparison," *RQ* 20(Spring 1981): 249-256.
3. Marilyn M. Roche, *ARL/RLG Interlibrary Loan Cost Study* (Washington: Association of Research Libraries, 1993).
4. Palmour, *A Study of the Characteristics*, 22.
5. Herstand, "Interlibrary Loan Cost Study and Comparison," 254.
6. Roche, *ARL/RLG Interlibrary Loan Cost Study*, 4.
7. *Ibid.*, 1.
8. Stephen P. Dickson and Virginia Boucher, "A Methodology for Determining Costs of Interlibrary Lending," in *Research Access Through New Technology*, ed. Mary E. Jackson (New York: AMS Press, 1989), 137-159.
9. Roche, *ARL/RLG Interlibrary Loan Cost Study*, 52.
10. *Ibid.*, 52.
11. *Ibid.*, 19.