



Research Notes

Hard Copy versus Online Services: Results of a Survey

Celia Wall, Roger Haney, and John Griffin

A survey was conducted of academic libraries at institutions with enrollments of 10,000 or fewer students to determine if the availability of abstracting and indexing services online has resulted in the cancellation of the equivalent print subscriptions. While survey findings did suggest that subscriptions to print abstracting and indexing services are being cancelled at a significant rate, the availability of online equivalents to those services was not found to be the primary reason for the cancellations.

The availability of bibliographic databases online and, more recently, of such databases in CD-ROM format has brought into increased focus the question of whether print versions of abstracting and indexing services might or should be cancelled when the online or the CD-ROM version is available. The particular question addressed by this study was the effect of the availability of online databases upon the continuation of subscriptions for the print equivalents to these databases.

The phenomenon of "migration," cancelling subscriptions to print abstracts and indexes in favor of their online database equivalents, has been well documented in

the library literature over the past decade. This literature can be roughly divided into two categories: (1) articles evaluating the economic impact of migration on the database producers and index publishers, and (2) articles concerned with libraries' reasons for cancelling print indexes and the effects of such cancellations on library users. It was with this second category of literature that the project was concerned.

Several studies have been concerned with a specific database, a particular institution, or one type of institution. Esther Baldinger, Jennifer Nakeef-Plaat, and Margaret Cummings¹ examined whether *Chemical Abstracts* online could be substituted for the print copy at a medical library. Even with free searches, a high percentage of users still chose to refer to the printed abstracts, thus deflating the authors' hypothesis. Ann Pfaffenberger and Sandy Echt,² on the other hand, substituted the online versions of *Science Citation Index* and *Social Sciences Citation Index* at Texas Christian University and discovered that users of these databases were extremely satisfied with the results. In addition, the online charges for searches during the test period were significantly

Celia Wall is Head of the Circulation Department, Waterfield Library, Roger Haney is Associate Professor in the Dept. of Journalism and Radio-Television and John Griffin is Head, Reference Department, Waterfield Library at Murray State University, Murray, KY 42071. This research was made possible by a Faculty/Librarian Cooperative Research grant provided by the Council on Library Resources.

less than the subscription costs for both indexes.

Dennis Elchesen³ did a cost comparison of manual versus online searching at the Lawrence Livermore Laboratory, University of California. Every aspect involved in both methods was measured and relative component costs calculated. The study's conclusion was that "online searching is generally faster, less costly, and more effective than manual searching." Yet for "precision and turn-around time" manual searching was preferred.

Mark Y. Herring⁴ described the decision process of migrating from print to online at King College in Bristol, Tennessee. John A. Timour's⁵ article surveyed biomedical libraries serving 120 accredited medical schools. His survey findings reported that a slight majority of the respondents were in favor of increased online access.

Close to 100 special libraries in New York State responded to a survey done by Pamela Kobelski and Betty Miller.⁶ Their results showed that although online searching was widely used by these libraries, there was no evidence of widespread migration from print to online.

The major study in this category was done by Frederick Lancaster and Herbert Goldhor⁷ who surveyed a variety of types of libraries using a diversified list of databases. While Lancaster and Goldhor predicted an acceleration from print to online, most research did not support such a contention. Certainly online availability was listed as a contributing factor in some decisions to cancel print subscriptions, but it was by no means the main reason, nor the second most-cited reason, for such decisions.

We believed, however, that previous studies had examined the wrong popula-

tion. We hypothesized that a survey of libraries at small liberal arts colleges—institutions with enrollments of fewer than 10,000 students—would find a greater incidence of migration than had been reported by larger institutions. Our suspicion was that the poor economy of recent years had affected small liberal arts colleges more than larger institutions.

METHODOLOGY

A mail survey, funded by a grant from the Council on Library Resources, was conducted. Library directors at four-year colleges and universities with enrollments of fewer than 10,000 students were sent a three-page, eleven-question survey (see appendix A).

To generate a mailing list of such institutions a search was conducted in Peterson's College Database (Dialog File 214), a comprehensive file of degree-granting, post-secondary colleges and universities in the United States and Canada.

Peterson's listed 1,516 small college libraries from which 1,167 were selected for the study. The 349 eliminated from the original list did not fit the criterion of "liberal arts colleges and universities." Those eliminated were special libraries, e.g., medical libraries, law libraries, Bible school libraries.

Respondents were asked to indicate the enrollment of their institutions in terms of one of nine categories. For purposes of analysis the institutions were recoded into the three categories used in Peterson's College Database (see table 1). The five respondents that did not indicate enrollment were deleted from analyses using enrollment as a variable.

The total return rate of 63.4% represented an excellent response using mail

TABLE 1
PERCENTAGE OF SURVEY RETURNS BY ENROLLMENT CATEGORIES

| | Enrollment | Sent | Returned | | % of Total Returned |
|--------------|-------------|-------|----------|------|---------------------|
| | | | No. | % | |
| Category I | Under 1,000 | 367 | 219 | 59.7 | 29.6 |
| Category II | 1,000-4,999 | 622 | 404 | 65.0 | 54.5 |
| Category III | 5,000-9,999 | 178 | 113 | 63.5 | 15.2 |
| | Unreported | | 5 | | |
| Total | | 1,167 | 741 | 63.5 | 99.3 |

questionnaires, and the returns in each category indicated good representation across enrollment categories. Because of this it was decided that a second mailing, originally planned and budgeted, was unnecessary.

Responses were coded on computer data sheets by two student workers and then submitted for analysis to the Murray State University Computer Center. The analysis was done using Statistical Package for the Social Sciences (SPSSx). Frequency counts were determined for each question and enrollment size was recoded to reflect Peterson's College Database categories. Chi-square was used for testing the significance of cross-tabulation results.

SURVEY FINDINGS

A/I Services Owned

The survey began by asking respondents to review a list of commonly held print abstracting and indexing services and to indicate which of the titles were

currently held, recently cancelled, or never subscribed to. For titles currently held, respondents were asked to indicate whether consideration was being given to cancellation.

The list of thirty-six titles used by Lancaster and Goldhor (1981) served as the basis for this list. Several titles were deleted from the original list since they were titles held by more specialized libraries than this survey targeted, e.g. *World Textile Abstracts*. Two titles—*MLA Bibliography* and *America: History and Life*—were added to the original list. Each title did have an equivalent online database accessible through one of the major online vendors.

Table 2 shows the list of twenty-six print abstracting and indexing services and the number of libraries currently owning or having owned the titles and those libraries who had never owned the titles. Table 3 shows the number of libraries planning to keep each title and those planning to cancel or who had already cancelled each title.

In reviewing the data reported by those

TABLE 2

STATUS OF LIBRARIES' SUBSCRIPTIONS TO ABSTRACTING/INDEXING SERVICES

| Title | Currently Own Or Have Owned | | Never Owned | | No Response | |
|-----------------------------------|--------------------------------|------|-------------|------|-------------|-----|
| | No. | % | No. | % | No. | % |
| MLA Bibliography | 644 | 86.9 | 82 | 11.1 | 15 | 2.0 |
| Psychological Abstracts | 641 | 86.5 | 86 | 11.6 | 14 | 1.9 |
| PAIS | 595 | 80.3 | 126 | 17.0 | 20 | 2.7 |
| Congressional Record | 578 | 78.0 | 140 | 18.9 | 23 | 3.1 |
| Chemical Abstracts | 549 | 74.0 | 169 | 22.8 | 23 | 3.1 |
| Resources in Education | 540 | 72.8 | 181 | 24.4 | 20 | 2.7 |
| Biological Abstracts | 521 | 70.3 | 196 | 26.5 | 24 | 3.2 |
| CIJE | 500 | 67.4 | 222 | 30.0 | 19 | 2.6 |
| America: History & Life | 463 | 62.4 | 239 | 32.3 | 39 | 5.3 |
| Historical Abstracts | 436 | 58.8 | 273 | 36.8 | 32 | 4.3 |
| Dissertation Abstracts | 416 | 56.1 | 292 | 39.4 | 33 | 4.5 |
| Physics Abstracts | 268 | 36.1 | 433 | 58.4 | 40 | 5.4 |
| American Doctoral Dissertations | 210 | 28.3 | 486 | 65.6 | 45 | 6.1 |
| Pollution Abstracts | 185 | 24.9 | 512 | 69.1 | 44 | 5.9 |
| Social Sciences Citation Index | 164 | 22.1 | 540 | 72.9 | 37 | 5.0 |
| Science Citation Index | 151 | 20.4 | 553 | 74.6 | 37 | 5.0 |
| Bibliography & Index of Geology | 150 | 20.2 | 549 | 74.1 | 42 | 5.7 |
| Environmental Abstracts | 135 | 18.2 | 561 | 75.7 | 45 | 6.1 |
| Government Reports Announcements | 134 | 18.1 | 559 | 75.4 | 48 | 6.5 |
| LISA | 117 | 15.8 | 585 | 78.9 | 39 | 5.3 |
| Engineering Index | 97 | 13.1 | 603 | 81.4 | 41 | 5.5 |
| Bibliography of Agriculture | 95 | 12.8 | 600 | 81.0 | 46 | 6.2 |
| Electrical & Electronic Abstracts | 66 | 8.9 | 628 | 84.8 | 47 | 6.3 |
| Computer & Control Abstracts | 63 | 8.5 | 630 | 85.0 | 48 | 6.5 |
| Metals Abstracts | 32 | 4.3 | 660 | 89.1 | 49 | 6.6 |
| Weekly Governmental Abstracts | 27 | 3.6 | 661 | 89.2 | 53 | 7.2 |

TABLE 3

LIBRARIES' PLANS FOR SUBSCRIPTIONS TO ABSTRACTING/INDEXING SERVICES

| Title | Plan to Keep | | Cancelled or Plan to Cancel | |
|-----------------------------------|--------------|------|--------------------------------|------|
| | No. | % | No. | % |
| MLA Bibliography | 571 | 88.7 | 73 | 11.3 |
| Psychological Abstracts | 594 | 92.7 | 47 | 7.3 |
| PAIS | 537 | 90.3 | 58 | 9.7 |
| Congressional Record | 526 | 91.0 | 52 | 9.0 |
| Chemical Abstracts | 247 | 45.0 | 302 | 55.0 |
| Resources in Education | 496 | 91.9 | 44 | 8.1 |
| Biological Abstracts | 292 | 56.0 | 229 | 44.0 |
| CIJE | 458 | 91.6 | 42 | 8.4 |
| America: History & Life | 283 | 61.1 | 180 | 38.9 |
| Historical Abstracts | 226 | 51.8 | 210 | 48.2 |
| Dissertation Abstracts | 305 | 73.3 | 111 | 26.7 |
| Physics Abstracts | 147 | 54.9 | 121 | 45.1 |
| American Doctoral Dissertations | 111 | 52.9 | 99 | 47.1 |
| Pollution Abstracts | 87 | 47.0 | 98 | 53.0 |
| Social Sciences Citation Index | 130 | 79.3 | 34 | 20.7 |
| Science Citation Index | 102 | 67.5 | 49 | 32.5 |
| Bibliography & Index of Geology | 115 | 76.7 | 35 | 23.3 |
| Environmental Abstracts | 78 | 57.8 | 57 | 42.2 |
| Government Reports Announcements | 105 | 78.4 | 29 | 21.6 |
| LISA | 62 | 53.0 | 55 | 47.0 |
| Engineering Index | 66 | 68.0 | 31 | 32.0 |
| Bibliography of Agriculture | 38 | 40.0 | 57 | 60.0 |
| Electrical & Electronic Abstracts | 37 | 56.0 | 29 | 44.0 |
| Computer & Control Abstracts | 51 | 81.0 | 12 | 19.0 |
| Metals Abstracts | 27 | 84.4 | 5 | 15.6 |
| Weekly Governmental Abstracts | 17 | 63.0 | 10 | 37.0 |

libraries who planned to cancel or who had already cancelled services, ten titles stood out. Over 50% of the libraries currently holding *Chemical Abstracts*, *Physics Abstracts*, *Pollution Abstracts*, and *Bibliography of Agriculture* planned to cancel or had already cancelled the titles. Over 40% planned to cancel *Biological Abstracts*, *Historical Abstracts*, *American Doctoral Dissertations*, *Environmental Abstracts*, *LISA*, and *Electrical and Electronics Abstracts*. These figures are particularly significant for *Chemical Abstracts*, *Biological Abstracts*, and *Historical Abstracts* because of the larger number of libraries subscribing to these services in the first place.

Over 70% of the libraries in each enrollment category reported having cancelled one or more subscriptions to abstracting and indexing services.

Reasons for Cancelling A/I Services

For each title a library had cancelled or was about to cancel, the respondent was asked to indicate the "Single Most Impor-

tant Reason" for cancelling. Four possible reasons were provided along with an "other" line for additional reasons.

Although most respondents did follow instructions and listed only one reason, many gave a combination of reasons for cancellation. Several respondents noted that rarely could one reason be singled out as the most important reason, indicating that usually a combination of reasons more accurately represented the true situation. One respondent indicated, "It is never as simple as one reason." Another noted, "It is usually a combination of nearly equal reasons (cost, use, online)."

In Table 4 the cancelled titles are listed with a breakdown of the reasons given for cancelling the titles. The incidence of multiple responses mentioned earlier caused the numbers in the columns for reasons to exceed the total number of cancellations reported for any given title.

For nine of these titles cost was given as a primary reason for cancellation. Fourteen titles were cancelled primarily due to

TABLE 4
LIBRARIES' REASONS FOR CANCELLING ABSTRACTING/INDEXING SERVICES*

| Title | Cancelled or Plan to Cancel | | Cost | | Lack of Use | | Available Online | | Available Nearby | | Other | | Total No. of Responses |
|------------------------------------|--------------------------------|---|------|------|-------------|------|---------------------|------|---------------------|------|-------|------|---------------------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | |
| Chemical Abstracts | 302 | | 213 | 59.2 | 45 | 12.5 | 67 | 18.6 | 30 | 8.3 | 5 | 1.4 | 360 |
| Biological Abstracts | 229 | | 136 | 51.5 | 40 | 15.2 | 68 | 25.8 | 17 | 6.4 | 3 | 1.1 | 264 |
| Historical Abstracts | 210 | | 81 | 36.8 | 83 | 37.7 | 41 | 18.6 | 8 | 3.6 | 7 | 3.2 | 220 |
| America: History & Life | 180 | | 77 | 38.7 | 77 | 38.7 | 38 | 19.1 | 3 | 1.5 | 4 | 2.0 | 199 |
| Physics Abstracts | 121 | | 52 | 37.7 | 48 | 34.8 | 27 | 19.6 | 6 | 4.3 | 5 | 3.6 | 138 |
| Dissertation Abstracts | 111 | | 32 | 28.6 | 40 | 35.7 | 26 | 23.2 | 9 | 8.0 | 5 | 4.5 | 112 |
| American Doctoral Dissertations | 99 | | 15 | 16.3 | 59 | 64.1 | 6 | 6.5 | 3 | 3.3 | 9 | 9.8 | 92 |
| Pollution Abstracts | 98 | | 23 | 22.3 | 60 | 58.3 | 13 | 12.6 | 2 | 1.9 | 5 | 4.9 | 103 |
| MLA Bibliography | 73 | | 34 | 47.2 | 27 | 37.5 | 9 | 12.5 | 1 | 1.4 | 1 | 1.4 | 72 |
| PAIS | 58 | | 19 | 29.7 | 26 | 40.6 | 12 | 18.8 | 5 | 7.8 | 2 | 3.1 | 64 |
| Bibliography of Agriculture | 57 | | 13 | 22.0 | 31 | 52.5 | 6 | 10.2 | 6 | 10.2 | 3 | 5.1 | 59 |
| Environmental Abstracts | 57 | | 12 | 24.0 | 27 | 54.0 | 8 | 16.0 | 1 | 2.0 | 2 | 4.0 | 50 |
| LISA | 55 | | 10 | 18.5 | 30 | 55.6 | 8 | 14.8 | 3 | 5.6 | 3 | 5.6 | 54 |
| Congressional Record | 52 | | 12 | 23.5 | 23 | 45.1 | 2 | 3.9 | 8 | 15.7 | 6 | 11.8 | 51 |
| Science Citation Index | 49 | | 32 | 59.3 | 8 | 14.8 | 7 | 13.0 | 5 | 9.3 | 2 | 3.7 | 54 |
| Psychological Abstracts | 47 | | 21 | 42.9 | 10 | 20.4 | 13 | 26.5 | 1 | 2.0 | 4 | 8.2 | 49 |
| Resources in Education | 44 | | 9 | 19.6 | 15 | 32.6 | 14 | 30.4 | 2 | 4.3 | 6 | 13.0 | 46 |
| CIJE | 42 | | 12 | 25.0 | 10 | 20.8 | 10 | 20.8 | 1 | 2.0 | 15 | 31.2 | 48 |
| Bibliography & Index of Geology | 35 | | 11 | 25.6 | 20 | 46.5 | 6 | 14.0 | 1 | 2.3 | 5 | 11.6 | 43 |
| Social Sciences Citation Index | 34 | | 21 | 56.8 | 9 | 24.3 | 4 | 10.8 | 1 | 2.7 | 2 | 5.4 | 37 |
| Engineering Index | 31 | | 14 | 42.4 | 9 | 27.3 | 7 | 21.2 | 1 | 3.0 | 2 | 6.0 | 33 |
| Electrical & Electronics Abstracts | 29 | | 8 | 30.8 | 11 | 42.3 | 7 | 26.9 | 0 | 0.0 | 0 | 0.0 | 26 |
| Government Reports Announcements | 28 | | 3 | 12.5 | 15 | 62.5 | 3 | 12.5 | 2 | 8.3 | 1 | 4.2 | 24 |
| Computer & Control Abstracts | 12 | | 3 | 33.3 | 3 | 33.3 | 3 | 33.3 | 0 | 0.0 | 0 | 0.0 | 9 |
| Weekly Governmental Abstracts | 10 | | 4 | 28.6 | 7 | 50.0 | 1 | 7.1 | 1 | 7.1 | 1 | 7.1 | 14 |
| Metals Abstracts | 5 | | 1 | 20.0 | 1 | 20.0 | 1 | 20.0 | 1 | 20.0 | 1 | 20.0 | 5 |

*Although the survey asked for only the single most important reason for cancellation, many libraries gave a combination of reasons; others did not provide a reason. Therefore, for any given title the sum of the five reasons will not equal the total cancellations reported. Percentages are based on the total number of responses given, not the total number of cancellations.

lack of use. In two instances—*America: History and Life* and *Computer Abstracts*—cost and lack of use were of equal importance. These data show that, while subscriptions are being cancelled for a number of reasons, cost and lack of use outweigh other considerations.

Of particular significance for the purposes of this project was the indication that, while online availability was a definite factor in cancellation decisions, in most cases, it appeared to be far less significant a factor than cost and/or lack of use. However, one noteworthy sidelight to the question came from respondents who had chosen not to start a subscription to certain titles because of their availability online. "Online availability of several databases has allowed us not to begin subscribing to some needed indexes which we would have trouble affording," one respondent noted. Another indicated, "Online is considered when evaluating potential purchases." "We can resist demand for *SCI* and *SSCI* in print because of online," yet another commented.

When size of institution based on enrollment was factored into the cancellation process, it was clear that libraries at institutions in all three categories were cancelling at roughly equal rates for each of the reasons (see table 5).

Results of Cancellations

Of equal importance for the purposes of the project was the extent to which cancellation of abstracting and indexing services had increased online searching, how well users had accepted this "migration," and whether savings from abstracting and indexing titles had been reallocated to subsidize computer searching.

When asked if their libraries had cancelled any subscriptions to printed abstracting and indexing services because of their availability online, 256 (34.5%) of the respondents indicated that online availability had been a factor in their decision to cancel. Of that number, 164 (64.1%) were libraries at institutions with 1,000–4,999 students. Forty-five (17.6%) were at institutions with fewer than 1,000 students. The remaining 47 (18.4%) were at institutions with 5,000–9,999 students.

At first glance these figures appear to disagree with those shown in table 4 that lists reasons given by libraries for cancelling abstracting and indexing services. We believe this discrepancy to be due to two factors. First, table 4 represents the "single most important reason" for cancelling abstracting and indexing services. Second, libraries may well have cancelled titles not included in the survey's list of abstracting and indexing services. In fact, many of the less-frequently held, more esoteric titles that were excluded from the list might well be prime targets for cancelling due to their availability online.

Paying for Online Searches

Two questions concerning how users paid for online searches were included in the survey. First, the 568 respondents whose libraries offered online search services were asked how searches were normally paid for. One hundred eighty-one (31.9%) of these respondents indicated their libraries subsidized 100% of the search costs and another 203 (35.7%) partially subsidized searches. In the remaining 184 (32.4%) libraries, searches were not subsidized.

In this last group respondents reported

TABLE 5
REASONS FOR CANCELLATION BY ENROLLMENT CATEGORIES*

| | Total Surveys Returned | Cost | | Use | | Online | | Other | | Elsewhere | | Total No. of Responses |
|--------------|------------------------|------|------|-----|------|--------|------|-------|-----|-----------|-----|------------------------|
| | | No. | % | No. | % | No. | % | No. | % | No. | % | |
| Category I | 219 | 113 | 39.4 | 92 | 32.1 | 46 | 16.0 | 20 | 7.0 | 16 | 5.6 | 287 |
| Category II | 404 | 206 | 33.6 | 198 | 32.2 | 114 | 18.6 | 49 | 8.0 | 47 | 7.6 | 614 |
| Category III | 113 | 49 | 33.3 | 61 | 41.5 | 23 | 15.6 | 11 | 7.5 | 3 | 2.0 | 147 |
| Totals | 736 | 368 | 35.1 | 351 | 33.5 | 183 | 17.5 | 80 | 7.6 | 66 | 6.3 | 1,048 |

*As in Table 4, libraries giving a combination of reasons cause the sum of the reasons to exceed the total number of surveys returned per enrollment category. Percentages are based on the total number of reasons given, not the number of surveys returned.

three ways in which the searches were being paid for: (1) individual requesting a search paid the entire costs of the search in 31 (5.4%) of the libraries; (2) searches were paid for entirely by department/grant accounts in 6 (1.0%) of the libraries; and (3) a combination of these two methods was used in 147 (25.8%) of the libraries.

Respondents indicating their libraries had cancelled abstracting and indexing services because of online availability were next asked how searches were paid for in the online equivalents of these abstracting and indexing services. One hundred seventy libraries (65.6%) reported that the library subsidized 100% of the search costs for the cancelled services; another 49 (18.9%) partially subsidized searches in the databases. In 5 (1.9%) the individual paid the entire cost of the search; in 4 (1.5%) department/grant accounts paid the entire costs. At 31 (11.9%) of the libraries the searches were paid for by a combination of department/grant accounts and the individual.

A look at library subsidies generally and after cancellations were made indicated an interesting trend (see table 6). The percentages given "For all searches" in table 6 were based upon the total number of libraries reporting that they had online search services. The percentages given "For cancelled A/I services" were based only on those libraries that indicated they had cancelled subscriptions due to online availability of an abstracting and indexing service.

These statistics indicate that those libraries cancelling abstracting and indexing services tend to subsidize searching in the database equivalents of those services more than they do for normal searching.

As one respondent put it, "It would not be fair to take away these services and then make undergraduates pay for accessing their online equivalents."

Of the 181 respondents who indicated that they subsidized 100% of the cost of searching, 170 (93.9%) of them had also cancelled print subscriptions to abstracting and indexing services.

Cancellations and Increase in Searching

One concern of some libraries contemplating cancellation of print abstracting and indexing services in favor of online is that the result will be a marked increase in searching in the equivalent databases. Survey results did not find that to be the case. Of the 242 libraries responding to a question on this issue, only 86 (35.5%) reported that they had experienced an increase in the number of searches performed in the database equivalents after the subscriptions had been cancelled.

User Satisfaction with Online Substitutes

A second concern of libraries is user acceptance of online substitution. Results of the survey indicated that users appeared to be quite satisfied with the substitution of online searching for the print abstracting and indexing services. Of the 250 respondents, 100 (40%) believed users were "strongly satisfied" with the change; another 62 (24.8%) believed users were "somewhat satisfied." One respondent at a library that had cancelled titles and subsidized online searching stated that they, "have had tremendous success with faculty free searches."

Seventy-six (30.4%) indicated users were "neither satisfied nor dissatisfied." While only 12 (4.2%) of the respondents

TABLE 6
METHOD OF PAYMENT FOR ONLINE SEARCHES

| Method of Payment | For Cancelled A/I Services | | For All Searches | |
|--|----------------------------|-------|------------------|-------|
| | No. | % | No. | % |
| Library subsidizes 100 percent | 170 | 65.6 | 181 | 31.9 |
| Library subsidized partially | 49 | 19.0 | 203 | 35.7 |
| Individual pays entirely | 5 | 1.9 | 31 | 5.5 |
| Department/Grant pays entirely | 4 | 1.5 | 6 | 1.0 |
| Combination of Department/Grant and Individual | 31 | 12.0 | 147 | 25.9 |
| Total | 259 | 100.0 | 568 | 100.0 |

believed the users were dissatisfied to some degree. Even this perceived dissatisfaction on the part of users was tempered by one respondent with the comment, "Faculty think they are missing something but they have not yet tried the substitute online service."

CONCLUSIONS

The hypothesis upon which the study was based was that libraries at small liberal arts colleges—institutions with enrollments of fewer than 10,000 students—would have a greater incidence of migration than had been reported in the literature for larger institutions. Analysis of the data collected by the survey did not support this hypothesis.

While the results of the survey did suggest that libraries are cancelling subscriptions to printed abstracting and indexing services at a significant rate, the availability of online equivalents to those services was not given as the primary reason for cancellation. Rather findings indicated that the cost of the subscriptions was the primary concern in the decision to cancel; lack of use was the second most cited concern. Online availability ranked third in the list of reasons given for cancelling the print subscriptions to abstracting and indexing services. Only 256 (34.5%) of the libraries surveyed indicated they had actually cancelled any subscriptions to print abstracting and indexing services because of their availability online. These findings

are consistent with earlier research reported in the literature.

Comments made by several respondents, however, suggest that recent technological advances in the information industry, notably CD-ROM, may have a more substantial impact upon printed abstracting and indexing services than has online searching. Approximately two dozen respondents listed CD-ROM as the primary reason for cancelling abstracting and indexing titles, e.g., most notably *Psychological Abstracts* and the ERIC indexes. One respondent indicated he "would cancel frequently used abstracts for CD-ROM but not for online." Another concluded, "CD-ROM will redefine the directions of online vs. print."

The authors agree with this prediction and believe there is a need for further research that would take into account the increasing availability and use of CD-ROM products. The current research was begun just as these products were being introduced into libraries and therefore could not fully explore this aspect of computer-based indexing and abstracting systems.

One problem that future researchers should anticipate is the difficulty of studying a technology that is evolving as rapidly as the online industry is. A mail survey is, by its very nature, a slow process. From the time the research is begun until it is complete, the technology can make tremendous advances. This is a problem that needs to be recognized in advance.

REFERENCES

1. Esther L. Baldinger, Jennifer P.S. Nakeef-Plaat, and Margaret S. Cummings, "An Experimental Study of the Feasibility of Substituting *Chemical Abstracts* On-line for the Printed Copy in a Medium-Sized Medical Library," *Bulletin of the Medical Library Association* 69, no.2:247-50 (1981).
2. Ann Pfaffenberger and Sandy Echt, "Substitution of SciSearch and Social SciSearch for Their Print Versions in an Academic Library," *Database* 11:63-71 (1980).
3. Dennis R. Elchesen, "Cost-Effectiveness Comparison of Manual and On-line Retrospective Bibliographic Searching," *Journal of the American Society of Information Science* 29:56-66 (1978).
4. Mark Y. Herring, "Online Databases vs. Hard Copy Subscriptions," *Library Hi Tech* 1:63-68 (1983).
5. John A. Timour, "Use of Selected Abstracting and Indexing Journals in Biomedical Resource Libraries," *Bulletin of the Medical Library Association* 63, no.3:330-33 (1979).
6. Pamela G. Kobelski and Betty Miller, "Impact of Online Search Services on Special Libraries," *Science and Technology Libraries* 7, no.1:67-85 (1986).
7. Frederick W. Lancaster and Herbert Goldhor, "The Impact of Online Services on Subscriptions to Printed Publications," *Online Review* 5, no.4:301-11 (1981).

- Congressional Record Abstracts
 Dissertation Abstracts Online
 ERIC
 Enviroline
 GeoRef
 Historical Abstracts
 INSPEC
 LISA
 MLA Bibliography
 METADEX
 NTIS
 PAIS International
 Pollution Abstracts
 PsycInfo
 SciSearch
 Social SciSearch
5. In general, how are searches paid for?
- 100% subsidized by library
 partially subsidized by library
 library does not subsidize (Circle A, B or C below)
 A—paid for by individual
 B—paid for by department/grant account
 C—both A and B
6. Has your library cancelled any subscriptions to printed indexes/abstracts because of their availability online?
- Yes IF YES, please go on to Question 7.
 No IF NO, SKIP TO QUESTION 10.
7. Specifically for those print indexes/abstracts which you have cancelled because of online availability, how are searches paid for?
- 100% subsidized by library
 partially subsidized by library
 library does not subsidize (Circle A, B or C below)
 A—paid for by individual
 B—paid for by department/grant account
 C—both A and B
8. Has there been an increase in the number of searches performed in those databases equivalent to the cancelled indexes/abstracts?
- Yes No
9. How satisfied would you say users have been with this new situation?
- Strongly satisfied
 Somewhat satisfied
 Neither satisfied nor dissatisfied
 Somewhat dissatisfied
 Strongly dissatisfied
10. What is the approximate enrollment of your institution?
- | | |
|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> Under 500 | <input type="checkbox"/> 2,500-2,999 |
| <input type="checkbox"/> 500-999 | <input type="checkbox"/> 3,000-4,999 |
| <input type="checkbox"/> 1,000-1,499 | <input type="checkbox"/> 5,000-6,999 |
| <input type="checkbox"/> 1,500-1,999 | <input type="checkbox"/> 7,000-10,000 |
| <input type="checkbox"/> 2,000-2,499 | |
11. Is your institution primarily:
- Liberal arts Specialized Religious

Thank you for your cooperation in completing this survey. We welcome any comments which you believe relevant to the purpose of this survey. Please make these on the back of this page.

We plan to begin coding and compiling survey results on May 30 and would greatly appreciate having your completed survey returned by that date to: CLR Grant Survey, Waterfield Library, Murray State University, Murray, KY 42071.

Name of institution: _____

SYNERGY.

To libraries worldwide, we are much more
than the sum of our parts.

FIRM ORDER SERVICES



STANDING ORDER SERVICES



NEW TITLE SERVICES



TECHNICAL SERVICES



Why do leading academic, research and public libraries rely on Blackwell North America? We could give a lengthy list. Our people. Our technology. Our many services tailored precisely to library needs. And our affiliation with B.H. Blackwell of Oxford, England. But in reality, you rely on us because we embody the best of the booksellers' tradition. Books and libraries are our business.

BLACKWELL
NORTH AMERICA, INC.

Part of a proud bookselling tradition dating from 1879.
Lake Oswego, Oregon • Blackwood, New Jersey
Toll free 1-800-547-6426

“The most important part of your automation investment isn't a machine.” “It's an attitude.”

Many people think a computer system is the hardware they can see and touch. The metal boxes and wires and blinking lights.

Actually, it's much more. Consider, for example, that your real investment is your data base and application software. Without these, that hardware is nothing.

And what happens in three to four years when you outgrow all that expensive hardware? This may seem unlikely now, but it's precisely what you should be planning for. Future user demand and file sizes are hard to predict, but *will* undoubtedly grow with time. To say nothing of the continuing advances in software offerings. Of course you want a system that can grow with you and take advantage of all the useful new functions that come along.

Think about the future *now*.

Unless you can count on unlimited funds, you need to think about these things before you make your initial investment.

This doesn't mean you should overbuy; it only

Susan Stearns
Vice President
Marketing

means you should invest your money on a system that is *flexible*. Because it pays to choose a supplier who can address your present needs *and* adapt when those needs change.

A flexible system.

Be sure your automation company shows flexibility in software *and* hardware. It should offer an “open systems” architecture. This will let you start off within your budget, then extend services incrementally over time. So you won't have to scrap one system and replace it later with something totally different and much more costly, requiring you to go back again for major funding.

Ideally, you'll choose a system and a company that can adapt to your changing needs. Because a company whose attitude is geared toward flexibility is geared toward success. Yours.

Obviously, we can't cover everything you need to know here. But we can send you an informative question-and-answer book on this important subject. Please write CLSI, Inc., 320 Nevada Street, Newtonville, MA 02160, or call us at 1-800-365-0085.

CLSI

Growing is what you're all about.

