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PRICING OPTIONS FOR END USER PRODUCTS IN LIBRARIES

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Abstract: As libraries offer more database products for end user searching, information service providers are offering a wider variation in pricing options. While "per use" options are still available (including connect time, per search, or output pricing), flat fee or subscription-based licensing options are becoming more popular. Subscription prices vary widely depending on type and size of library or organization, number of concurrent ("simultaneous") users, number of potential users, or size of population served by a library. My presentation will outline the various options available and the advantages and disadvantages of each for different types of libraries. Pricing based on number of potential users ("per seat" or site licenses) is more popular in business settings, while academic and public libraries may find simultaneous user pricing more attractive. A more detailed examination of use patterns will present usage data from academic and public libraries that are subscribers to databases provided by Information Access Company's Searchbank service. These data will show how many simultaneous users are logged on at any time. Factors that influence amount of use (including such things as number of workstations in the library, coverage of databases in instructional classes, placement of search options on library menus, etc.) will also be discussed.

1. INTRODUCTION

Digital information resources are a growing part of all libraries' collections and it is no longer the exception, but the rule, to have end user searching of a wide variety of digital resources. These resources are still available in many different digital forms, including CD-ROM (networked or standalone), online directly to an online vendor or database producer, locally loaded within a library or organization, online access to sources loaded by a consortia or library automation vendor, and so forth. Most libraries offer a mixture of all of these options (Refs. 8-9).

Pricing of digital resources used to be much simpler when online was an add-on service, rather than a mainstream offering, and when much of the searching was done by information professionals. This clearly is no longer the case, but no one best way to price digital resources in libraries has yet emerged. There may be several pricing options available for each digital source or for each format offered by a library. Keeping up with all of the changes in pricing options is a challenge, as described in the last decade by several well-known online experts

(Refs. 1-7). The options that are best will vary from library to library and often requires study of usage patterns in a library, evaluation of all possible options for every source, and negotiation with a vendor. This is much more complex than paying a fixed price for printed matter or even a set amount per hour for online!

2. OVERVIEW OF THE MAIN PRICING OPTIONS

Although exact amounts are subject to negotiation, several major schemes for pricing digital resources are currently available. These can be categorized as: 1) pay-as-you-go; 2) flat fee; and 3) user-based subscriptions.

2.1 Pay-as-You-Go

Throughout the 1970s and much of the 1980s, online information was priced primarily by the amount of time a customer remained connected to a database. Connect time pricing has not disappeared yet, although it is now most often combined with other elements. Most common is a combination of connect time and output based ("per article" or "per record") fees. Output pricing may have one charge for viewing or downloading a full text of a document and a lesser, prorated charge for partial records, such as for bibliographic records, abstracts, etc.

Although pay-as-you-go schemes were first developed for intermediary online searching, some products aimed at end user searching still charge this way. Premium services on consumer online services such as America Online often charge a per hour fee in addition to their monthly subscription price. Major online services heavily used by business end users, such as LEXIS/NEXIS and STN International offer combination connect time/output based pricing options.

UMI's ProQuest Direct charges a fee for each full text article requested. The fee may vary for the same article depending on the format desired. ASCII (text only) articles, for example, have a lower fee than do full image or combination image/ASCII articles. CARL/Uncover does not charge online fees for searching the Uncover bibliographic database, but there is a charge for every full text article ordered.

OCLC's FirstSearch and RLG's Eureka end user systems offer a "per search" option, which is a variation of the pay-as-you-go pricing scheme. Libraries may purchase blocks of searches, with the price per search lower if the library commits to more searches per year. Per search prices may be passed on to patrons or absorbed by the library.

Pay-as-you-go schemes make sense for an add-on service at a library, such as document delivery services. In the cases mentioned above, the bibliographic searching and identification of materials may be subsidized or provided at no cost by the library. If a patron wants an article that is not held in the library's collection, the cost of ordering it online may be passed on to the patron. Personalized services can thus be provided that could not otherwise be offered.

Online connect time and document charges also make sense when the cost of information retrieval is passed on to clients, as may be the case in a corporate law library or fee-based information service within a library. Charging each customer for the online time required for their information request, whether that request is handled by an intermediary or the end user, helps keep records and budgeting straight.

Pay-as-you-go pricing does not make sense for libraries that prefer to subsidize database searching to many end users as there is little economy of scale and the total costs cannot be anticipated in advance.

2.2 Flat Fee

Libraries are accustomed to paying for print materials on a flat fee basis, either on a one-time basis such as for a book or on a subscription basis, such as for a journal. Flat fee pricing (also called "flat rate" or "fixed rate" (Ref. 4)) is simple since budgets can be determined in advance and materials can be made available to anyone who comes to the library without additional fees being paid.

CD-ROM is the most common medium that offers pure flat fee rates. H.W. Wilson Company, for example, offers a single yearly subscription price for any of their Wilsondisc CD-ROM products. The price varies according to the number of updates in a year selected by the library, but a single subscription price covers stand-alone or networked workstations and any number of users. Many of Chadwyck-Healy's CD-ROM databases also carry a single price that applies to any number of users.

Rarely do flat fee prices for digital materials come without strings attached, however. Most products targeted to libraries have one subscription rate for single workstation use and a sliding scale for networked use, based on the number of users or workstations in the network. SilverPlatter's pricing for most of their CD-ROM products is typical, with pricing increments with the number of workstations in a library's network.

The small print on the packages of many CD-ROM materials sold in bookstores, computer stores, or catalogs states they are for use by individuals within the home only. Advertised flat fee prices often do not apply to institutional use, even if the institution only plans to use it on a stand-alone workstation. What appears at first to be flat fee usually ends up including additional charges based on number of users.

2.3 User-Based Pricing

Prices based on the number of users within an organization or the number of simultaneous users allowed are becoming the most common pricing schemes for digital products offered to institutional markets. Number of users may be based on the total constituency served by a library or on an estimate of the number of users within a constituency that will be interested in a particular resource. Pricing based on total constituency is common for products aimed at the academic, public, or school library market. Subscription prices for academic or school libraries, for example, are based on the total population of the school's student body and faculty. In these cases the price per student is typically kept relatively low. Encyclopedia Britannica Online is priced based to academic institutions based on total student population and the Institute for Scientific Information's Current Contents has a variation on the user population option, with minimum and maximum prices and several price levels based on groups of population ranges. A price based on total user population is also one of several user-based pricing options offered by Engineering Information Village. This type of pricing makes sense for products that have a wide appeal and are likely to be used often by many of a library's constituents.

It may be difficult to justify pricing on total number of constituents for highly specialized materials, however. In special, academic, and school libraries, in particular, the library may

be able to estimate what percentage of their total population is likely to use any particular resource. (This estimate may be just an educated guess or a trial subscription period may be needed to measure actual usage.) NewsEDGE and other services which connect to a corporation's intranet are often priced on an estimate of how many people within the organization are likely to use particular resources. Most online vendors will revisit the original estimate yearly or even every six months and adjust prices according to actual usage.

Pricing based on total number of users or potential users of a product allow anyone within an organization to use materials of interest to them when they need it. For these reasons, this is a popular pricing option in corporations. But, these options can be expensive for the organization, because the cost is based on the greatest number of potential interest. Public and academic libraries, therefore, may prefer usage based pricing based on number of simultaneous users allowed.

In a CD-ROM environment, the number of simultaneous users is often controlled by the number of workstations provided. This, of course, may also be the case when there is no dial-in access to the library's resources. Limiting the number of a library's dial-in ports has the same effect in a dial-in environment. Remote online services can base pricing on simultaneous usage by allocating a preset number of dial-in users from any particular library. IP addresses may be automatically checked or passwords may be required. SilverPlatter Web and Information Access Company's SearchBank, for example, verify the IP address of anyone attempting to logon.

3. SIMULTANEOUS USAGE DATA

Libraries that are considering a simultaneous usage option face the problem of deciding how many simultaneous users they should support for each information resource selected. Since this option is usually selected to save money and optimize resources, it may not be cost effective to pay for anticipated peak usage, if that peak usage occurs only rarely. On the other hand, if too low a number of simultaneous users is offered, too many library patrons will be inconvenienced with "busy signals", indicating a particular product is unavailable. Determining the most cost-effective number of simultaneous users allowed means balancing a series of trade-offs and can be difficult.

3.1 Data from IAC

To help libraries determine the most cost-effective number of simultaneous users to support, Information Access Company (IAC) has provided us with usage data from a sample of their public and academic library customers. These data include the number of users for each IAC database in each library at any time over a six-month period. No restrictions on simultaneous usage were imposed in this period, so usage reflects actual unrestricted use of each database at each library. Data will be calculated separately for public and academic libraries.

From these data for each database and each library we can determine: peak usage over the six-month period, average number of simultaneous users, and busiest times (days of the week, months, or times of day). Perhaps even more useful, we will be able to plot what percentage of users would be inconvenienced if any particular level of simultaneous usage was selected. For example, if 90% of the time a library has no more than a maximum of only five simultaneous users, it may not be cost-effective to purchase the capability for an additional two or three users that would be needed to satisfy the remaining 10% of cases. By combining usage

data with time of day data, library staff may be able to suggest times that are less busy so use can be optimized.

The data analysis is just beginning, so the data presented here are indicative of the types of analysis that will be possible. Figures 1 and 2 and the top half of the Table provide data analysis from two databases in two different academic libraries (both colleges with approximately 4,000-5,000 students); Figures 3 and 4 and the bottom half of the Table show information about two databases held by one medium sized public library system with six branches.

Averaging the mean numbers of simultaneous users every day for six-months reveals some usage patterns in the academic libraries. As can be seen in Figure 1, simultaneous usage at both libraries rises throughout the morning and reaches its peak in the late afternoon, between 4:00 and 6:00 p.m. Early in the week sees the most use (Figure 2), with a noticeable dip on Fridays. Since times when no one is using a database (zeros) are included in the calculations of means, the mean number of users from 8:00 a.m. to midnight is always low. For example, at 4:00 p.m. (the peak time for academic library #1 in using Expanded Academic ASAP), the mean usage was approximately 1.5 users.

The public library has similar time and day patterns for both of the databases pictured in Figures 3 and 4, although National Newspaper Index has a much smaller mean number of simultaneous users than General Reference Center Gold at all times.

Mean numbers and peak numbers of simultaneous users tells only part of the situation, of course. If a library decides to purchase a licensing contract based on the average of simultaneous users, they will guarantee that many times some users will not be able to log on. Table 1 shows what percent of the time users will be able to successfully log on if a simultaneous use contract is purchased for a set number of users. For example, in the academic library for the Expanded Academic ASAP database, purchasing a 4-person simultaneous usage contract would be enough 97.8% of the time even though 10 was the maximum number of simultaneous users in the six-month period. General Businessfile ASAP in another academic library has a similar pattern.

The public library's two databases have different levels of use, but the effect of simultaneous usage cutoffs can be calculated for either from Table 1. A 5-person simultaneous usage contract would be satisfactory 99.5% of the time for General Reference Center Gold in this library system; while a two-person contract would suffice 99.6% of the time for National Newspaper Index.

3.2 Other Factors

From these data, public and academic libraries will be able to see actual online usage patterns in libraries similar to their own. This should help them determine a reasonable number of simultaneous users to purchase in an initial contract for this pricing option. Pure numbers and usage patterns do not tell the whole story, however. Libraries may do many things that influence the numbers of users of any given online product.

Factors that may influence usage of an online product include: the number of workstations provided within the library; how many other products and services are accessed through those workstations; how busy the workstations are; how many hours a library is open; whether or not the library offers dial-in access to these resources; where information about these resources is

placed on the welcome screen; the path a user must take to get access to these resources; the availability of help screens or instructional materials that describe these resources; the availability of other, similar resources; the perception of the staff as to the usefulness of these resources; the match between the content of these resources and the needs of a library's constituency.

Clearly, many of these factors are intangible. Some (such as the number of workstations) are objective factors, others (such as the attitudes of the library staff) are more subjective. Surveying the library staff seemed the only way to get much of this information. To gather this information, we sent questionnaires to approximately 200 libraries (100 each public and academic). These 200 libraries were randomly selected from the over 600 total libraries that purchase online products from Information Access Company and for which six months of data was available. The questionnaire is included here as an Appendix. Most of the questions focus on what factors in the libraries influence usage of online resources by end users. Survey results will be presented at the National Online Meeting.

4. CONCLUSION

Unlike the simpler print world, there is no one scheme for pricing digital resources for the library market. There is not likely to be just one in the near future, although pricing schemes that include some element based on usage are becoming the most common. Libraries have to be aware of many factors and potential usage patterns in their environment in order to negotiate the most cost-effective option for their library.

Simultaneous usage pricing is not the best option for every organization, as it involves selecting a capability for simultaneous use that will inconvenience the smallest number of people while keeping costs down for the library. Actual usage data from similar types of libraries will help librarians estimate their anticipated usage.

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Figure 1.
Simultaneous Use by Hour: Academic Libraries

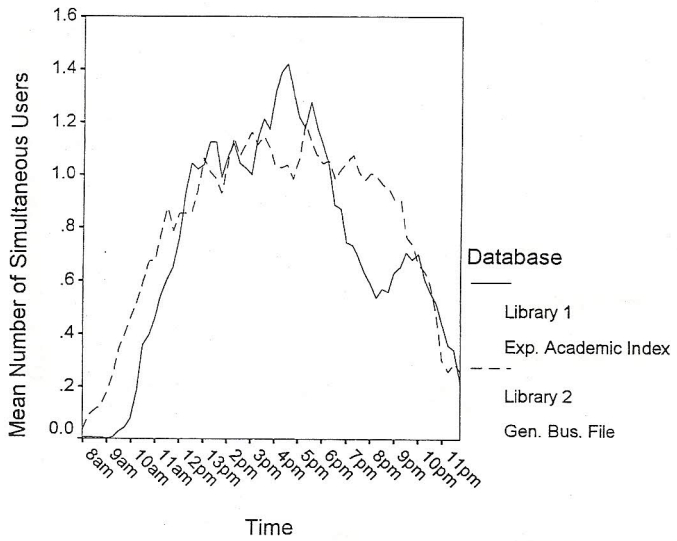


Figure 2.
Simultaneous Use by Day: Academic Libraries

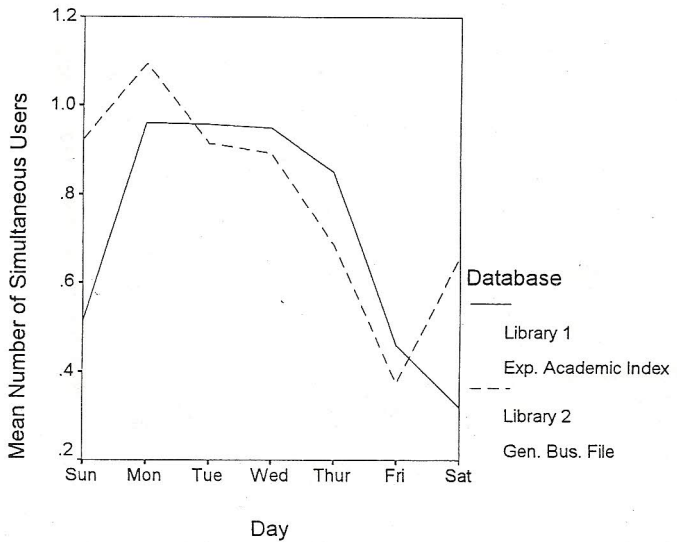


Figure 3.
Simultaneous Use by Hour: Public Library

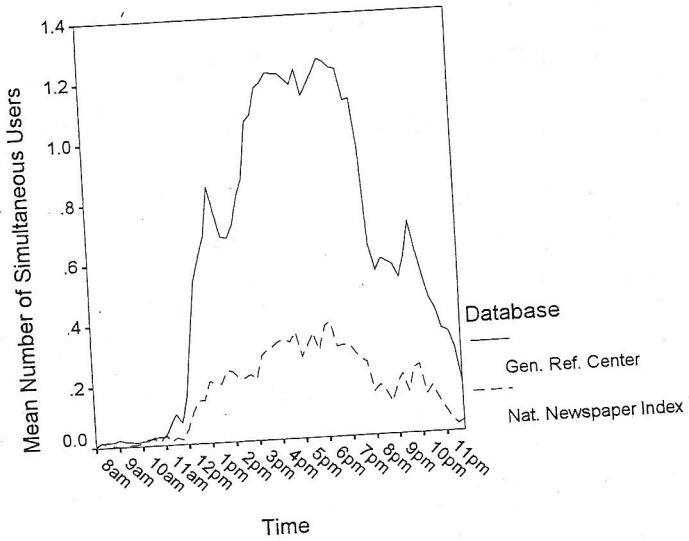


Figure 4.
Simultaneous Use by Day: Public Library

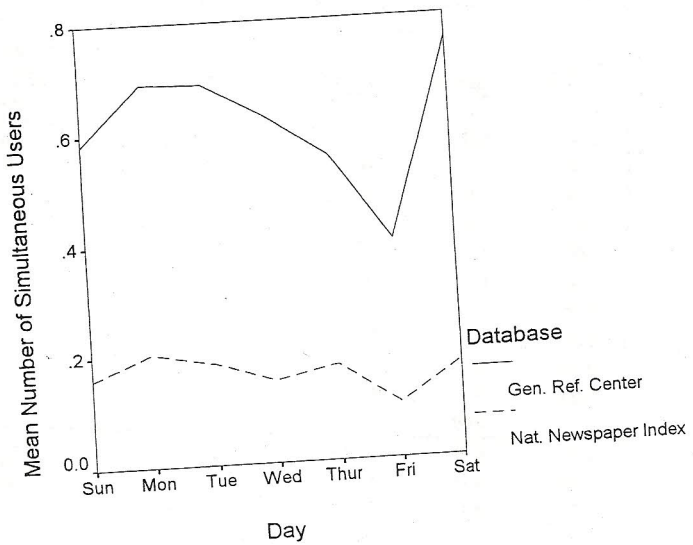


Table 1.
Database Coverage Table

Academic Libraries	Users	Frequency	Percent	Cumulative Percent
Library 1	0	7861	67.1	67.1
Expanded Academic Index	1	1577	13.5	80.6
	2	1000	8.5	89.1
	3	669	5.7	94.8
	4	349	3.0	97.8
	5	172	1.5	99.3
	6	58	.5	99.8
	7	13	.1	99.9
	8	10	.1	100.0
	9	2	.0	100.0
	10	1	.0	100.0
	Total	11712	100.0	
Library 2	0	6995	59.7	59.7
General Business File	1	2233	19.1	78.8
	2	1223	10.4	89.2
	3	703	6.0	95.2
	4	357	3.0	98.3
	5	152	1.3	99.6
	6	43	.4	99.9
	7	6	.1	100.0
	Total	11712	100.0	

Public Library	Users	Frequency	Percent	Cumulative Percent
General Reference Center Gold	0	8308	70.9	70.9
	1	1461	12.5	83.4
	2	897	7.7	91.1
	3	556	4.7	95.8
	4	298	2.5	98.4
	5	129	1.1	99.5
	6	41	.4	99.8
	7	16	.1	99.9
	8	4	.0	100.0
	9	1	.0	100.0
	10	1	.0	100.0
	Total	11712	100.0	
National Newspaper Index	0	10096	86.2	86.2
	1	1383	11.8	98.0
	2	191	1.6	99.6
	3	36	.3	99.9
	4	6	.1	100.0
	Total	11712	100.0	

APPENDIX

Database Use Questionnaire

Information About Your Library

1. How many libraries are there at this campus location?
 1 only 6-10 more than 20
 2-5 11-20
2. How many full time (FTE) students are enrolled at this campus?
 under 1,000 10,000-19,999
 1,000-4,999 20,000-29,999
 5,000-9999 over 30,000
3. How many full time librarians do you have (total for all branches)?
 under 10 41-70 over 100
 11-40 71-100
4. How many individuals work in reference at all branches?
 1-9 20-29 40-49
 10-19 30-39 over 50
5. What is your total annual materials budget?
 under \$500,000 \$2,000,000-\$3,000,000
 \$501,000-\$1,000,000 over \$3,000,000
 \$1,000,000-\$2,000,000
6. What is your annual periodicals budget?
 under \$100,000 \$501,000-\$1,000,000
 \$101,000-\$200,000 over \$1,000,000
 \$201,000-\$500,000

Information About the Databases You Provide

1. What types of electronic media do you offer for end user searching? (please check all that apply)
 CD-ROM
 online databases loaded locally on your computer
 online databases loaded on another library's computer (such as through a consortium)
 online databases from a commercial online service (such as FirstSearch)
 online databases loaded by your library catalog company (such as DRA)
 World Wide Web (other than to web versions of the commercial database services listed above)

2. Which commercial online services do you provide for end user searching? (please check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Dow Jones Interactive | <input type="checkbox"/> RLG Eureka |
| <input type="checkbox"/> Ebscohost | <input type="checkbox"/> SilverPlatter ERL |
| <input type="checkbox"/> IAC SearchBank | <input type="checkbox"/> STN International |
| <input type="checkbox"/> LEXIS-NEXIS | <input type="checkbox"/> UMI Proquest Direct |
| <input type="checkbox"/> OCLC FirstSearch | |
| <input type="checkbox"/> Others (please list) _____ | |
-
-

3. (Please answer if you checked more than one commercial service above) In your opinion, which of the online services above are the most popular with the greatest number of end users in your library?

Most Popular: _____
2nd Most Popular: _____
3rd Most Popular: _____

4. How many workstations do you have that provide access to reference databases? (total in all branches)

- | | | |
|---------------------------------------|--------------------------------|----------------------------------|
| <input type="checkbox"/> less than 10 | <input type="checkbox"/> 21-30 | <input type="checkbox"/> 41-50 |
| <input type="checkbox"/> 10-20 | <input type="checkbox"/> 31-40 | <input type="checkbox"/> over 50 |

5. What current pricing options do you have for any electronic sources? (please check all that apply)

- per use (connect time, per search, output pricing)
 - flat fee (one time fee)
 - license (based on number of simultaneous users)
 - license (based on library size)
 - license (based on library type)
 - license (based on number of potential users)
 - other (please explain): _____
-
-

6. What database pricing options do you prefer?

- per use (connect time, per search, output pricing)
 - flat fee (one time fee)
 - license (based on number of simultaneous users)
 - license (based on library size)
 - license (based on library type)
 - license (based on number of potential users)
 - other (please explain): _____
-
-

7. Does your membership in a consortium affect pricing?

- yes no
please explain: _____
-
-

Information about databases from Information Access Company (IAC)

1. Which IAC databases do you have?
- | | |
|--|---|
| <input type="checkbox"/> Academic ASAP | <input type="checkbox"/> Health Index |
| <input type="checkbox"/> Books in Print | <input type="checkbox"/> PAIS International |
| <input type="checkbox"/> Business Index ASAP | <input type="checkbox"/> PsycINFO |
| <input type="checkbox"/> Expanded Academic ASAP | <input type="checkbox"/> Trade & Industry |
| <input type="checkbox"/> Others (please list): _____ | |
-
2. Do you purchase the IAC databases through a consortium?
- yes, all yes, some no
3. What percentage of your public workstations allow IAC database searching?
- less than 25% 50% 100%
- 25% 75%
4. Is IAC database use restricted to the hours the library is open?
- yes no
5. Are IAC databases available through remote access?
- yes no
6. Does access to IAC databases require an end user to enter a password?
- yes no
7. Are any workstations dedicated exclusively to IAC databases?
- yes no
8. Are IAC databases noted on the library system's main menu?
- yes no
9. Once a user logs in or sits down at a workstation, how many steps/screens does it take to get to IAC databases?
- only 1 3-4 over six
- 2-3 4-5
10. How are the IAC databases identified on the screen?
- under "IAC" by database name (e.g. Books in Print)
- other (please explain): _____
-
11. Are signs posted that promote IAC databases?
- yes no
12. Are there handouts which describe IAC databases?
- yes no
13. Is training offered that specifically mentions IAC databases?
- yes no

14. Is the subject matter of the IAC databases related to academic classes?

yes, all databases yes, some databases no

15. Are IAC databases specifically mentioned in academic classes?

yes no don't know

16. Are there specific class assignments that require use of the IAC databases?

yes no don't know

Other Factors (Please answer these questions in general, for any online databases)

1. How much influence do you think each of the following factors has on the amount a particular database is used? Please check none, some, or great for each factor.

Factor	Amount of Influence
# of workstations	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
location of workstations	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
# of hours library is open	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
availability of remote login	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
usefulness of database content	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
quality of database content	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
lack of other databases in the library	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
lack of equivalent print resources	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great
pricing option for a database	<input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> great

2. Do you feel that there is a need to encourage the use of online databases, or do users find them on their own? Please explain.

3. Please comment on how much emphasis is given to database searching through bibliographic instruction in your library.

4. What is your opinion of why people use a particular database or not?