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U.S. DEPARTMENT OF ENERGY

Scientific and Technical Information

Electronic Publications in the Federal Depository Library Program
Pilot Project Report

U.S. Government
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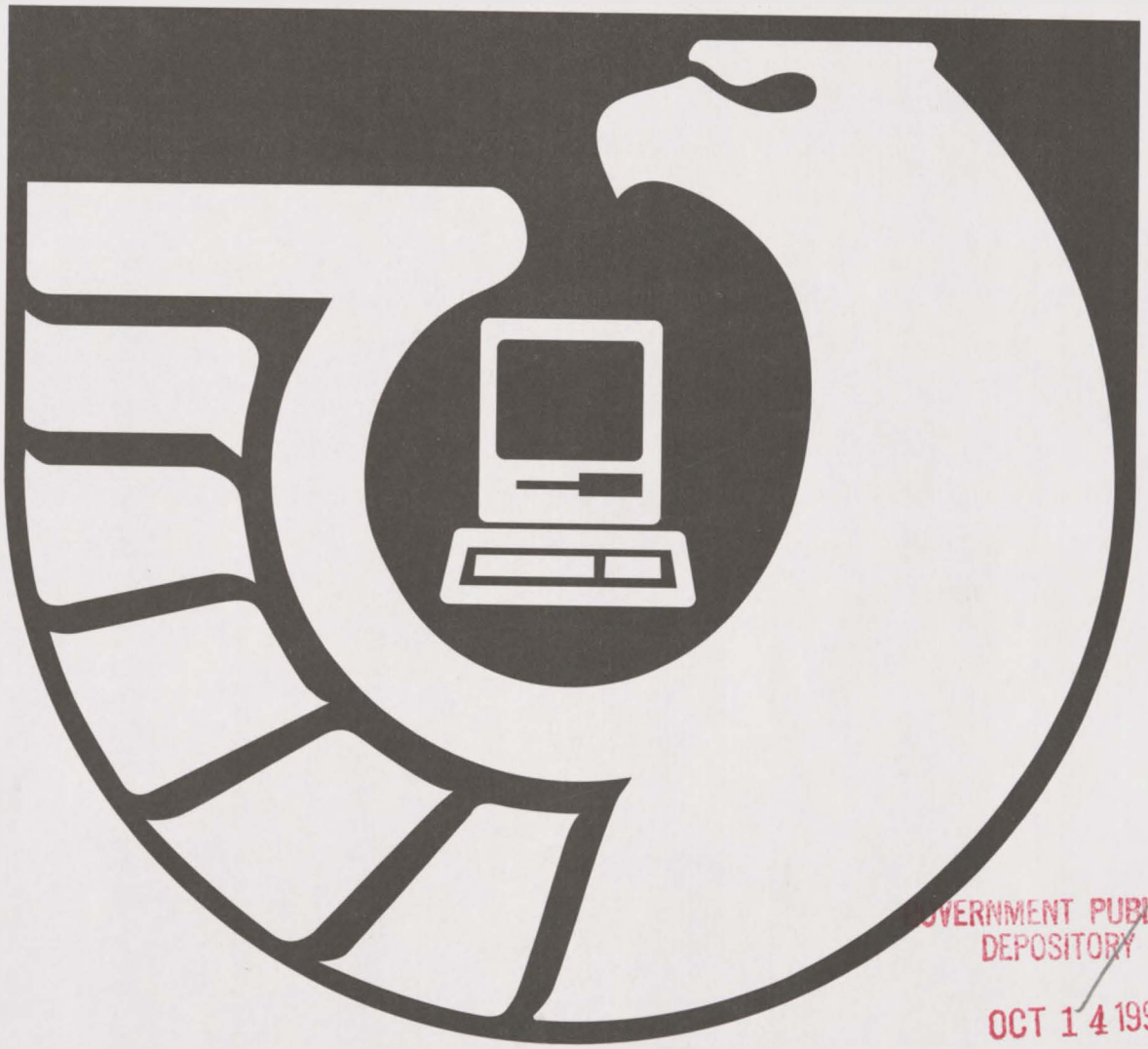

Electronic Publications in the Federal Depository Library Program Pilot Project Report

U.S. Government Printing Office

August 1993

Superintendent of Documents

EXECUTIVE SUMMARY

In response to the 1987 Joint Committee on Printing (JCP) resolution urging the United States Government Printing Office (GPO) to test the feasibility and practicality of disseminating government publications to Depository Libraries in electronic formats, GPO and the Department of Energy (DOE) proposed and received approval for a Pilot Project to evaluate electronic dissemination of and access to DOE research results by Depository Libraries. The project consisted of two interrelated components: (1) evaluating online access to DOE services and databases by Depository Libraries and (2) a technology assessment of the feasibility of disseminating DOE research results in electronic format rather than on microfiche. GPO and DOE signed an Interagency Agreement in July 1990, and GPO allocated $133,000 for the project.

Because it is relatively inexpensive to produce and takes less storage space than paper, microfiche has long been the medium of choice for distributing full-text information to libraries. However, the need for quicker and more efficient access to information has prompted a reassessment of other media as potential alternatives to microfiche. DOE currently distributes microfiche of over 14,000 technical reports annually to Depository Libraries from its Office of Scientific and Technical Information (OSTI) in Oak Ridge, Tennessee. These documents, which are prepared by or for DOE, report the results from DOE-funded scientific and technical research projects.

OSTI also maintains the Energy Science and Technology Database, a multidisciplinary database containing references to information related to energy research and technology from worldwide sources. Abstracts of the documents distributed to the Depository Libraries are included in the database.

The complete Energy Science and Technology Database, available through DIALOG Information Services and STN International, contains approximately 2.5 million records dating from 1974 to the present. The Integrated Technical Information System (ITIS) maintained by OSTI for DOE and its contractors provides access to the current 14 months of Energy Science and Technology—over 200,000 records, with approximately 750 new records added nightly. (The database is updated semimonthly on the commercial systems.) Prior to the Pilot Project, the database was available to Depository Libraries only through DIALOG and STN. For the duration of the Pilot Project, however, DOE/OSTI made ITIS available to participating Depository Libraries.

Component I

The first component of the Pilot Project involved selecting a small group of Depository Libraries and training library staff in the use of ITIS, which provides electronic mail and a gateway to DIALOG in addition to access to the Energy Science and Technology Database. DOE cataloging records were also made available via downloading through ITIS or on magnetic tape for incorporation in the libraries' own online catalogs.

The test libraries performed online searches, downloaded bibliographic information, and used the online gateway to access the full database on DIALOG and perform post-processing activities with retrieved files. A series of questionnaires was used to collect background information, costs, and

other Project information throughout the test period and following its completion. DOE monitored the libraries' usage of the system and provided a hotline service to assist with any questions or problems.

Results of the first survey in Component I showed that, prior to the Pilot Project, 81% of the responding libraries were not cataloging their DOE microfiche collection. Sixty percent, however, said an in-house online catalog was a source they "Often" to "Always" searched to satisfy patrons' requests for scientific and technical information (STI). This may explain why, in 87% (14) of the libraries, this collection was typically accessed fifteen times or less a week, though 56% (9 libraries) estimated they received more than 16 STI requests per week (ranging from 16 to 170).

Shared cataloging was an important focus of Component I. MARC-like cataloging records were provided in an electronic file for the libraries to load into their online catalogs. The amount of programming required to enable this procedure exceeded the planned staff and budget support for several libraries. Another problem was the difficulty several libraries encountered when attempting to merge the MARC-like records with full MARC records already in the catalog. Both issues generated many write-in comments on the Component I surveys. Even so, on the final survey, 14 of the 17 libraries said that receiving DOE shared cataloging would be valuable to their libraries, at least to some extent. Half of those libraries stated that shared cataloging would be valuable to a "Very great extent."

Finally, 41% of the participating libraries said that, based on their experience with the Pilot Project, they thought their patrons would access the DOE microfiche collection "somewhat more frequently," and another 17% said "much more frequently."

In addition to their ITIS online and per record costs, the participating libraries reported that they incurred cumulative total costs for all libraries of $36,272.35 during the Pilot Project. These other costs incurred by libraries varied greatly depending on how extensively they used the online system and the distance participants had to travel to Oak Ridge for the training. Staff salaries composed the largest single item of expense to the participating libraries. Total costs to participating libraries ranged from $332.00 to $8,515.00, with a median cost of $1,400.00 per library. Both GPO and DOE covered certain ITIS online costs which were not charged to the libraries.

Component II

The second project component was composed of two major parts: (1) a survey of all 1,398 Depository Libraries to assess their current and future use of various media for acquiring full-text scientific and technical information and (2) a technology assessment of existing and developing media to determine their applicability to the storage and dissemination of full-text information. A total of 1,064 of the 1,398 Depository Libraries responded to the survey, for a response rate of 76%.

Responses to the survey were evaluated based on the number of libraries responding to each question and, where appropriate, whether or not the libraries currently receive DOE reports on microfiche. Of the libraries currently receiving DOE microfiche, 82% had received one or more patron requests for such scientific and technical information (STI) within the past six months. In comparison, 52% of all other libraries had received requests for STI within the same time frame. A relationship was

found between whether libraries receive DOE technical reports and the number of requests for STI received from patrons.

Over 45% of responding libraries stated that patrons have difficulty accessing information stored on microfiche. The most frequently cited reasons for this difficulty in order of occurrence were as follows: (1) patrons dislike the microfiche format, (2) a lack of awareness by patrons of the information available on microfiche, and (3) patrons had difficulty locating information stored on microfiche.

The responding libraries indicated that the three most-used media for acquiring all types of full-text information were as follows: (1) microfiche, (2) paper, and (3) compact discs, in that order. In response to a question asking how compact disc technology was used for all types of data/information, 96% of libraries that currently receive DOE reports and 91% of libraries overall indicated that they use compact discs for archival storage, search and retrieval, or in some other capacity.

The libraries were further asked to indicate on which media they would *prefer* to access full-text information. Several media/mechanisms were listed, including downloading from remote or local hosts, optical discs, compact discs, floppy disks, magnetic tape, and paper. Compact discs were the most preferred medium of those listed, followed by paper. Optical discs and magnetic tape were the least preferred of all media. The preferred environment for accessing full-text information is via a personal computer (PC), either on a stand-alone system or connected to a local area network (LAN).

The two criteria for selecting a medium for storing and accessing full-text information most often cited by the responding libraries were (1) ease of information retrieval and (2) purchase cost. Other criteria receiving an overall ranking of at least "Great importance" were update/subscription costs, compatibility with current hardware, maintenance/operating costs, and compatibility with other media currently used. The most important criterion reported by libraries for selecting a user interface for searching, retrieving, and manipulating full-text information was easy search and retrieval of information. Other important criteria were the capability to accommodate both novice and expert users, and compatibility with current software/operating systems.

Component II: Technology Assessment

The technology assessment of Component II evaluated various media for their applicability and effectiveness for disseminating full-text information to Depository Libraries. This study covered the issues of library preferences, costs to produce and disseminate, storage capacity, searchability, and life span of each medium. A particular consideration was the need to incorporate graphic and pictorial data along with the full text of reports on any medium selected for dissemination.

The issue of dissemination of full-text information on alternative media to microfiche will diminish somewhat in importance if more searchable full-text online databases become available. However, widespread availability of these databases and the technology needed to make information residing in them fully searchable and retrievable will not become a reality for several years. It is also possible that the potential of online full-text databases may never be realized due to the costs associated with creating, maintaining, and accessing them.

At present, the most realistic electronic alternative to microfiche for dissemination of full-text information is CD-ROM. This medium is preferred by most libraries, is relatively inexpensive to

produce, requires less storage space than microfiche or paper, retains the integrity of data, and can be easily searched. However, the life span of this medium is currently unknown, rendering its potential for long-range storage of information somewhat questionable. The volume of DOE reports distributed to Depository Libraries (currently approximately 14,000 per year) could require the creation of as many as 4 new CD-ROM discs per week. In addition, if libraries want to be able to provide simultaneous access to multiple users, the acquisition of CD-ROM "jukeboxes" and network interfaces could be required. Because many libraries have limited budgets for acquisition of additional equipment, CD-ROM may not be an ideal choice for disseminating full text despite its many benefits.

Providing a CD-ROM containing cataloging information corresponding to microfiche and paper shipments of DOE research results rather than the full text of these documents would provide better access and reference to this information. Additionally, making the indexing information available on a CD-ROM would capitalize on the libraries' expressed desire to access full text information via a PC.

In conclusion, the Pilot Project provided both GPO and DOE with much valuable information that will help guide their decisions on the dissemination of full-text information. Because the ultimate value of information depends on its accessibility, this issue is paramount in making any decisions about which medium or media is best suited to full-text dissemination. Improving the ways in which information on existing media is indexed and referenced may be the most feasible alternative until the technology of full-text online databases matures. Finally, the technology of disseminating searchable full-text information over national and international networks is rapidly evolving and merits close attention.

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BACKGROUND

In response to the 1987 Joint Committee on Printing (JCP) resolution urging the United States Government Printing Office (GPO) to test the feasibility and practicality of disseminating government publications to Depository Libraries in electronic formats, GPO and the Department of Energy (DOE) proposed and received approval for a Pilot Project to evaluate electronic dissemination of and access to DOE research results by Depository Libraries. The Project consisted of two interrelated components: (1) evaluating online access to DOE services and databases by Depository Libraries and (2) a technological evaluation of the feasibility of disseminating DOE research results in electronic format rather than on microfiche. GPO and DOE signed an Interagency Agreement in July 1990, and GPO allocated $133,000 for the project. The objective of the GPO/DOE Interagency Agreement was to evaluate ways to improve the dissemination of, access to, and utilization of DOE research results provided to Depository Libraries.

Because it is relatively inexpensive to produce and takes less storage space than paper, microfiche has long been the medium of choice for distributing full-text information to libraries. However, the need for quicker and more efficient access to information has prompted a reassessment of other media as potential alternatives to microfiche.

DOE distributes microfiche of over 14,000 technical reports annually. These reports, which are prepared by or for DOE, contain scientific and technical information related to energy. Recipients of the fiche include the agency itself and its authorized contractors, researchers in the scientific and technical communities, U.S. industry, academia, and the public, as well as users from foreign countries. Microfiche is distributed directly to DOE and contractor sites. DOE has formal agreements with the National Technical Information Service and the Government Printing Office to provide fiche to the public and Depository Libraries.

Microfiche is distributed weekly from Oak Ridge, Tennessee, to Depository Libraries on the basis of selection profiles provided by GPO. GPO and DOE jointly fund the production and distribution of DOE microfiche to Depository Libraries.

Prior to the Pilot Project, only Depository Libraries holding DOE contracts were able to obtain access to the internal DOE online system, the Integrated Technical Information System (ITIS). DOE research and development information is currently available to Depository Libraries and the general public only commercially through DIALOG Information Services and STN International. At the time of the Pilot Project, online users of ITIS paid $30 per hour of connect time and $0.25 for each record downloaded or printed.

COMPONENT I: INFORMATION ACCESS

For this first component, referred to as the Information Access or the Online Access Component, 17 Depository Libraries and GPO were given expanded and enhanced access to DOE scientific and technical information. (Because one site did not actively participate in the online part of the project after the initial training, 16 sites plus GPO used the online system.) To accomplish this, user accounts for the participating libraries were established on the Integrated Technical Information System (ITIS), a system primarily serving DOE and major DOE contractors.

Services Provided to Participating Depository Libraries

ITIS access allowed the participating libraries to use or test the following:

1. The Energy Science and Technology Database (EDB) on ITIS

   This database contains unlimited, unclassified scientific and technical information processed at OSTI in support of DOE's research and development activities and interests in energy and energy-related fields. OSTI makes available only a fourteen-month window of the most current information on ITIS. The entire file is available on DIALOG and STN, but because the ITIS version is updated nightly as items are processed, bibliographic records may be available on ITIS two to six weeks before they become available commercially. Access to the ITIS version of this database allowed the participating Depository Libraries to have timely access to the newest information as it is received at OSTI and provided them with more access points in addition to the existing paper indexes and DIALOG. Online availability of the subject thesaurus and the DOE authority files used in preparing the bibliographic records also enhanced the libraries' access to this information. Another feature of the ITIS version of this database was the availability of the OSTI Search-Aid Menus (OSAM). This menu-driven user interface was developed to provide new users with the ability to search the Energy Science and Technology Database without having to know the database software command language. The interface was made available to the Pilot Project users to supplement and reinforce the search training provided by OSTI. Access to the database and these complementary features was made available at a special low rate to promote usage to enhance the librarians' knowledge of this body of information.

2. A shared cataloging product in MARC-like format

   Shared cataloging provided cataloging records to match, one for one, the full-text of DOE technical reports received on microfiche by the Depository Libraries. The bibliographic records were pulled from the Energy Science and Technology Database at the same time and by the same stored search profile that produced the list of microfiche to be shipped each week to recipients. The electronic records were then converted from the COSATI format used in the database to a MARC-like format more compatible with standard library applications. The purpose of the conversion was to transfer data as they appear in OSTI records into a format meeting the nationally defined standards for a minimum level MARC record; it was not to change the data or how the data elements were ordered or formatted within the fields. Thus, the records were described as MARC-like, rather than being "full" MARC records in which the contents have been generated according to the Anglo-American Cataloging Rules, 2nd Edition (AACR2). The converted file was then automatically delivered each week to each Pilot Project user's ITIS account area. This made it immediately available for downloading from the system. With

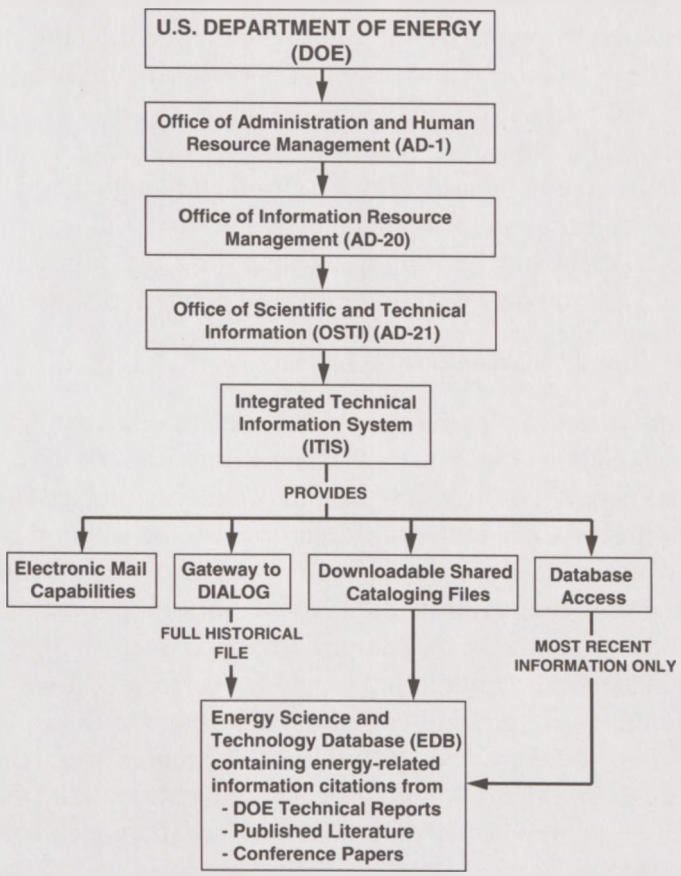
appropriate technical support at the libraries, it was planned that these files would then be uploaded into libraries' online catalogs. This was to provide enhanced access to and usage of DOE microfiche for which cataloging did not currently exist or was normally separated from the cataloging of the libraries' main collection. For the convenience of the libraries who could utilize it, OSTI also provided the shared cataloging files on magnetic tape.

3. An online, post-processing gateway to DOE files on DIALOG

   The ITIS gateway was designed to provide users with an automated, menu-driven way to combine files of older Energy Science and Technology Database records on DIALOG with the newest information on ITIS. The records retrieved from DIALOG were converted back into COSATI format when brought through the gateway to facilitate merging with ITIS records. The gateway deleted any duplicate records resulting from the overlap between the two systems and presented menu options for various report formats and sorts. These reports could be printed on the user's local printer, printed offline at OSTI for postal delivery, or downloaded. Online editing of the merged files and on-line toggling between DIALOG's format and ITIS's format were also part of the gateway's features.

The ITIS access, which also provided electronic mail as a communication link between the libraries, OSTI, and GPO, was to be available for a six-month period. Access actually began the end of January 1991 in conjunction with the ITIS training provided at OSTI and continued until August 16, 1991. (Note: Collection of usage statistics for tracking and billing ended July 31, 1991. The final two weeks of access were for wrap-up activities only.) Figure 1 presents an overview of the services provided

Figure 1: DOE Services Provided to Participating Depository Libraries



to the participating libraries along with OSTI's position in the DOE organizational structure at the time of the Pilot Project.

DOE and GPO Support of Component I

Throughout the early months of 1990, various GPO and DOE/OSTI personnel met to finalize the details of the Interagency Agreement. This group also worked together to prepare the information packet that would go out to Depository Libraries inviting them to participate in the Pilot Project. Also, at the request of GPO, an OSTI representative attended the spring meeting of the Depository Library Council Meeting held in Scottsdale, Arizona, to promote the upcoming project and answer questions that potential participants might have.

OSTI performed the following work in 1990 to ensure its readiness to provide Component I support for the 1991 project:

- Finalized preparations to make the shared cataloging product available for beta testing.
- Completed the ITIS gateway to make it available for beta testing.
- Completed the OSTI Search-Aid Menus (OSAM), a menu-driven user interface for the Energy Science and Technology Database.
- Modified the accounting software to provide system usage tracking and billing at the special, reduced rate agreed upon for participating Depository Libraries. The ability to track online time in the shared cataloging module and online time as well as record output in the gateway module was added to the system in 1990 so that Pilot Project usage could be reported even though, for these test modules, it was free of charge.
- Modified ITIS training class modules and materials to concentrate on Pilot Project needs and objectives.

To help the participating Depository Libraries maximize their use of ITIS, OSTI offered a three-day training class in January 1991. The class included an overview of ITIS and its relationship to OSTI's mission, an overview of the content and coverage of the Energy Science and Technology Database, instructions on developing and executing search strategies, a preview of OSAM, instructions on accessing the system and choosing a password, instructions on downloading or printing from the database, the use of electronic mail, and demonstrations of the shared cataloging downloading facility and the various options of the ITIS Gateway. Hands-on exercises were used for practice with each instruction module. In addition, the training staff helped attendees set up their accounts and worked with them to ensure they could return to their libraries and help their colleagues do the same. Two requests were made of OSTI by the attending librarians: (1) that participation be expanded to allow more than two password holders per site and (2) that libraries be supplied with tapes of shared cataloging as a backup to the downloading option on ITIS. OSTI agreed to both requests.

During the Project, ITIS was available from 6:00 a.m. Eastern time until 11:00 p.m. Eastern time, Monday through Friday. The ITIS Hotline was also made available to participating Depository Libraries to assist users with all types of questions or problems.

Site Selection

On October 22, 1990, Superintendent of Documents Donald E. Fossedal sent a letter to the then 255 Depository Libraries that were receiving DOE microfiche, announcing the GPO/DOE Pilot Project and requesting their voluntary participation. A copy of the information package is provided in Appendix A. Also included was a survey asking for demographic information about their facilities. A total of 154 of these libraries responded to this request. Nineteen of the responding libraries indicated that they would be willing to participate in the Pilot Project. The other 135 libraries were asked to list the reasons they could not participate. Basic tabulated data for this survey is contained in Appendix A.

The most common reason for not participating (cited by 83 libraries, or 61% of the 135) was insufficient staff resources available to support the project. Another 68 libraries (50%) felt that there would not be sufficient library user demand for energy information to warrant project participation. Another commonly cited reason (by 64 libraries, or 47%) was that the libraries did not have funds to support the travel costs for staff training associated with the Pilot Project. The following reasons for not participating were cited by at least 25 libraries each: libraries did not wish to institute a service that might be discontinued after the end of the project; libraries did not have an online catalog; libraries did not have local automated data processing (ADP) support; and libraries did not have funds available to support telecommunication costs. Overall, costs of participation and inadequate staff resources were the most significant reasons for lack of participation in this project.

Libraries selected for participation in the Pilot Project were required to meet the following criteria:

- Be a current recipient of either the full set of DOE microfiche or a portion thereof.
- Have an online catalog for accessing the library collection.
- Be responsible for local software development to support moving shared cataloging records into the library's online catalog.
- Have the necessary equipment to access and download from ITIS, including an IBM or compatible PC, a Hayes Smartmodem or compatible, appropriate communications software that supports the Kermit file transfer protocol, and an optional local printer.
- Dedicate staff time to participate in training, usage of the online system, downloading of shared cataloging records, ADP support, and providing feedback to DOE.
- Have the necessary funds available for travel costs associated with training and telecommunication costs.
- Have a valid DIALOG account and password to be able to access DIALOG through the online gateway.

The initial plan was to choose 15 libraries meeting these requirements at random. Five additional slots were set aside for discretionary assignment. However, of the 19 libraries willing to participate, only 17 were able to commit the necessary staff and budget resources. Therefore, it was decided to allow all of the 17 libraries to participate although they did not all meet all of the specifications. Specifically, one library, West Virginia University, did not have an online catalog. Of the 17 libraries selected, one did not participate in the online access portion of the Project. GPO participated as an additional test site in the Project.

Objectives

Objectives of Component I were to determine the following:

- Search, retrieval, and cataloging capabilities the participating Depository Libraries currently have and plan to have in the future.
- Sources the participating Depository Libraries rely on to direct patrons to the DOE microfiche collection.
- The extent of use of DOE information provided on microfiche.
- Factors contributing to the use or nonuse of DOE information provided on microfiche.
- The usefulness of electronic cataloging of DOE scientific and technical information (STI) distributed to Depository Libraries in microfiche.

Additional objectives intended primarily to provide information for internal OSTI use were to

- Determine the feasibility and desirability of providing electronic cataloging for DOE research results in a format suitable for uploading to libraries' online catalogs.
- Encourage the use of EDB as a "pointer" to the DOE microfiche collection and explore the feasibility of online access replacing expensive paper indexes.
- Test the utility and value of the ITIS gateway as a tool for merging EDB information on DIALOG with the newest EDB records on ITIS and as a tool for customizing the results into various report formats and sorts.

The information collected will be assessed by OSTI management in making decisions about dissemination alternatives.

Finally, by enhancing the access to depository library collections of DOE research results for both students in universities and the public, the GPO Pilot Project supported DOE's initiatives in both education and technology transfer.

Methodology

DOE/OSTI distributed three survey instruments during Component I to collect information used for this first part of the Pilot Project. The survey instruments and the tabulated data from these surveys, on which this report is based, are contained in Appendixes C, D, E, F, G, H, I, and J.

The initial survey, entitled "Depository Library Use of DOE Microfiche," consisted of 31 questions, many consisting of multiple parts, addressing the libraries' normal practices in filing DOE microfiche, cataloging and accessing microfiche, microfiche promotion, library instruction, and handling requests for scientific and technical information. This survey was mailed to the libraries on April 10, 1991, with responses requested by April 26, 1991.

The second survey instrument, entitled "Technical Evaluation," consisted of three separate parts. Part A included 11 multi-part questions designed to evaluate usage of ITIS and the Energy Science and Technology Database. Part B consisted of rated responses to 3 questions about the delivery mechanism, the cataloging records, and the overall satisfaction with the product. Part C asked

28 questions about the ITIS gateway. The Technical Evaluation survey was mailed to the libraries on June 25, 1991, with responses requested by July 1, 1991.

The last survey, entitled "Final Project Evaluation," assessed changes in handling of the DOE microfiche collection as a result of the Pilot Project, overall response to the information provided through the online system and through the shared cataloging product, and response to Component I of the project as a whole. The final survey was mailed on January 22, 1992, with responses requested by January 31, 1992.

In addition to the surveys, OSTI collected information through tracking of the calls made to the ITIS Hotline and as a result of an OSTI visit on April 16, 1991, to the University of Colorado in Boulder and the Denver Public Library. A representative from the Colorado Alliance of Research Libraries Systems, Inc. (CARL), also attended the meetings. During the meetings, participants discussed progress of the libraries in using the shared cataloging bibliographic data and how the transmitted file could be better formatted to facilitate loading onto the CARL database.

Profile of Participating Libraries

Of the 17 selected libraries, 9 were regional depositories and 8 were selective depositories. (See Appendix A.) Sixteen of the libraries had total collections (depository and non-depository materials) larger than 600,000 volumes, and one library had a collection between 150,000 and 600,000 volumes. Fourteen were academic libraries, two were public libraries, and one was a state agency library. Four of the libraries were located in the Mountain time zone, six in the Central time zone, six in the Eastern time zone, and one in the Pacific time zone. A list of the participating libraries is given in Appendix B.

On the survey used to determine Depository Library interest in participating in the Pilot Project (see Appendix A, Question 6), 15 of the 17 libraries which became participants indicated that they were "very interested" in access to EDB on ITIS. Ten of these libraries indicated that they were "very interested" in the ITIS Gateway and shared cataloging aspects of the project.

Online Usage Statistics and Component I Costs

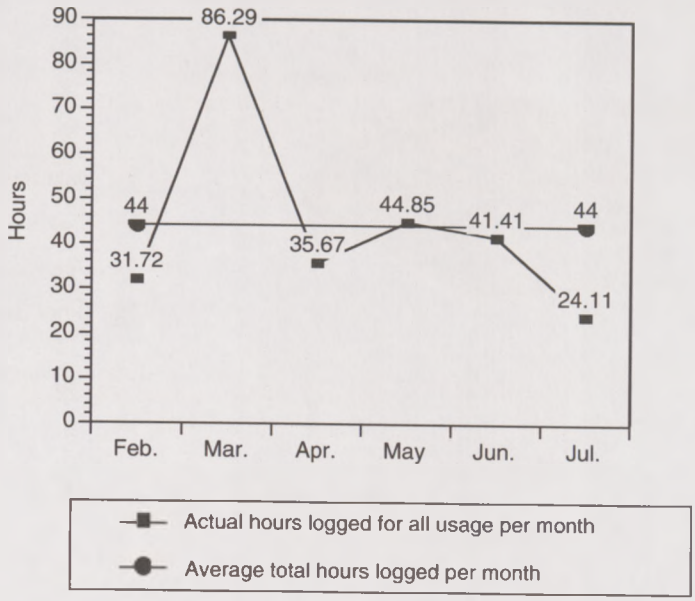
This portion of the report is organized into two sections. The first presents the online usage statistics gathered during Component I. These statistics show the pattern of ITIS usage across the six months of the Component I time frame, how the system usage was subdivided into four usage types or categories, and usage statistics for the individual libraries involved. The second section translates the usage data into cost figures, breaking them down further into who paid what. This section also includes the information that libraries sent in as part of the final Component I survey. It shows the costs they incurred during this portion of the Pilot Project for items such as training, staff time, etc.

The detail presented in the text stops at the library level. For detail down to the level of the individual users at the libraries, see the Project Tracking Statistics in Appendix I.

Online Usage Statistics

Of the 17 participating libraries, 16 logged on to ITIS during the time frame of Component I. They were connected to the system for a total of 264.05 online hours. Figure 2 shows the online hours across the six months of the Component I time frame.

Figure 2: ITIS Total Online Connect Hours (Total Hours Logged per Month)



System usage, for tracking and costing purposes, was divided into four categories or types. These were

- Database Usage—All online time logged when a user was in the Energy Science and Technology Database.
- Shared Cataloging—All online time logged when a user was in the shared cataloging module and/or downloading shared cataloging records.
- Gateway Usage—All online time logged when a user was in the Gateway module performing any of the Gateway operations, such as merging files, creating bibliographies and reports, and/or printing or downloading records obtained through the Gateway. This also included online time spent in the database *when* the database was entered through the gateway menu and not through the ITIS Main Menu.
- Other Usage—All online time logged when a user was in electronic mail or using general system menus and utilities, including downloading or printing database records with the options listed on the Download Saved Files Menu.

Each one of these categories or types of usage is a subset of total system usage, and, added together, the time logged in each one equals the 264.05 hours of ITIS online time. Figure 3 illustrates the breakdown.

Shared cataloging usage accounted for 59% of the total ITIS online hours and reflects the time users spent downloading these large files. The small amount of time logged for Gateway usage reflects what the surveys showed after the Pilot Project, that only eight libraries used the Gateway at all.

Figure 4 illustrates how system usage was subset into the four usage types or categories across the six months of the Component I time frame.

Figure 3: ITIS Total Online Hours (Breakdown by Type of Usage)

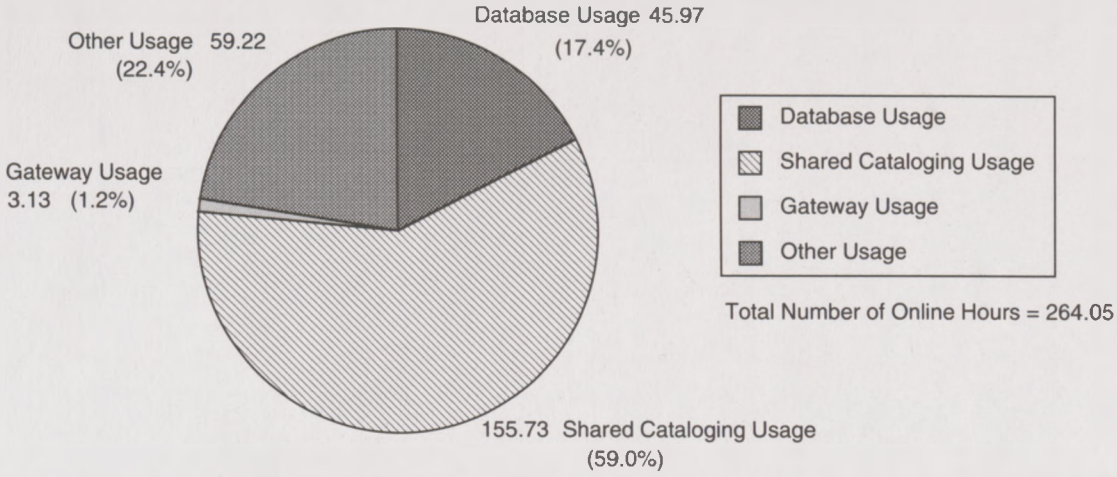
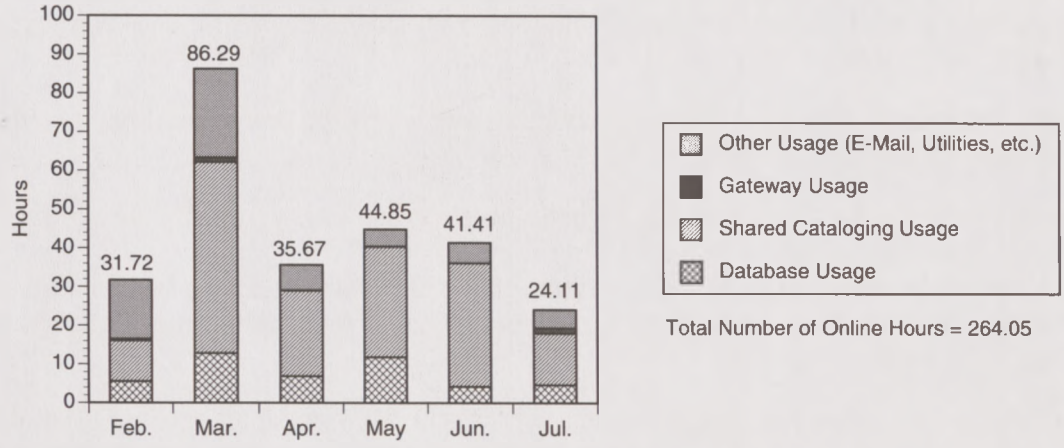


Figure 4: ITIS Total Online Hours (Breakdown by Month and Type of Usage)



Usage of the Energy Science and Technology Database was of particular interest during Component I, and, for that reason, a more detailed discussion of that particular type or category of system usage is included here.

When a user entered the Energy Science and Technology Database, one of the four categories of system usage, the database software not only tracked the time the user spent there but also counted the entry as a session. The libraries logged a total of 45.97 hours in the database during 186 separate sessions. The line chart in Figure 5 shows the libraries' total database usage across the six-month timeframe, measured in terms of both online time and number of sessions.

Tables 1 and 2 present the database time and sessions data for each library across the six-month period. The data in Table 1 is shown in minutes and then, after the total, expressed as hours and

Figure 5: Database Usage per Month (Hours and Sessions)

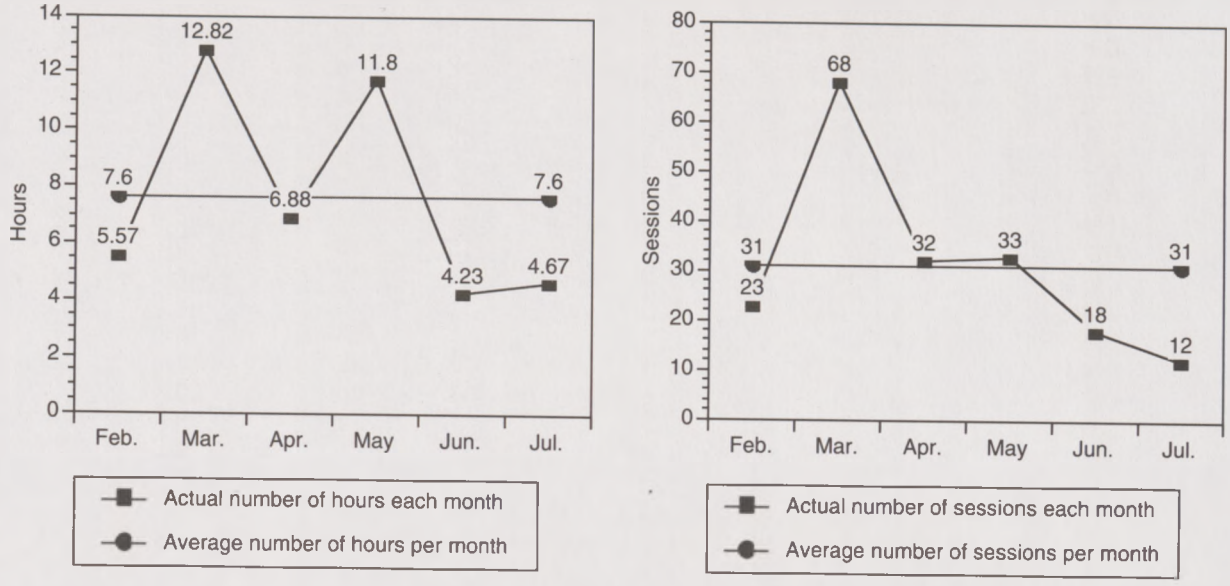


Table 1: Database Usage per Library per Month (Expressed as Time)

Library	Feb	Mar	Apr	May	Jun	Jul	Total, Min	Total, Hr
Cleveland Public Library (CPL)		2	17				19	.32
College of William & Mary (CWM)	212	78	22	23	3		338	5.63
Denver Public Library (DPL)							0	0
Eastern Washington University (EWU)							0	0
Emporia State University (ESU)		73				6	79	1.32
Louisiana State University (LSU)		2	41		5		48	80
Oklahoma Department of Libraries (ODL)	13			0	18		31	.52
Rice University (RU)				30	24		54	.90
Texas A&M University (TAM)		15	164	239	160	102	680	11.33
University of Colorado, Boulder (UC)		45					45	.75
University of Kentucky (UK)		348	114	27	8	20	517	8.62
University of Massachusetts (UMA)			11				11	18
University of Minnesota (UMIN)	45			21			66	1.10
University of New Mexico (UNM)		34	10	15		20	79	1.32
University of Tennessee, Knoxville (UT)	6	114	34	118		68	340	5.67
Utah State University (USU)	5	4					9	.15
West Virginia University (WVU)	53	54		235	36	64	442	7.37
Total	334	769	413	708	254	280	2,758	45.97

Note: A session lasting less than one minute was registered as 0 by the database monitoring software.

Table 2: Database Usage per Library per Month (Expressed as Number of Sessions)

Library	Feb	Mar	Apr	May	Jun	Jul	Total	Average per month
CPL		1	2				3	.5
CWM	15	6	1	3	1		26	4.3
DPL							0	0
EWU							0	0
ESU		3				1	4	.7
LSU		1	2		2		5	.8
ODL	2			2	2		6	1.0
RU				5	2		7	1.2
TAM		2	10	8	8	4	32	5.3
UC		3					3	.5
UK		24	11	3	1	1	40	6.7
UMA			2				2	.3
UMIN	2			1			3	.5
UNM		8	1	1		2	12	2.0
UT	1	17	3	6		3	30	5.0
USU	1	1					2	.3
WVU	2	2		4	2	1	11	1.8
Total	23	68	32	33	18	12	186	31.0

fractions of hours. The total of 2,758 minutes equals the 45.97 hours of database time shown in Figure 5 of this section and represents 17.4% (Figure 3) of the total ITIS online hours.

The libraries printed or downloaded a total of 8,129 records from the Energy Science and Technology Database during Component I.

Component I Costs

During the Component I time frame, ITIS was available to two separate populations for two separate cost-per-hour rates. DOE and DOE contractors continued to use the system at the rate normally charged them: $30.00 per hour for online connect time and $0.25 for each record downloaded or printed, regardless of format. Print options included prints routed to local printers attached to users' personal computers or offline prints, which were then mailed to users. DOE customers did not have access to shared cataloging or to the ITIS Gateway.

While the Depository Libraries participating in Component I were charged the standard $0.25 for each record downloaded or printed from the Energy Science and Technology Database, a special, lower cost rate for online time was put in place for this population. This special rate was $16.00 per hour and applied to only two of the four types or categories of usage. The other two types of usage, including records obtained as a result of that usage, were provided by DOE/OSTI at no charge, either to GPO or to the participating Depository Libraries.

Accordingly, the four types or categories of usage defined earlier can be characterized as either "billed" or "non-billed" items.

Billed Items—

- **Database Usage:** Subsidized by GPO on behalf of the libraries during the first two months of Component I and paid by the libraries themselves during the last four months. Rate was $16.00 per hour.

- **Other Usage:** Same as above.

- **Records Downloaded or Printed from the Database:** Paid by the libraries themselves throughout the entire six-month period. Rate was $0.25 per record, regardless of format or length.

Non-Billed Items—

- **Shared Cataloging Usage:** Provided by DOE throughout the entire six-month period at no cost to GPO or the libraries.

- **Shared Cataloging Records:** All shared cataloging records, whether downloaded from the shared cataloging module on ITIS or on the magnetic tapes sent to each library were provided by DOE throughout the entire six-month period at no cost to GPO or the libraries.

- **Gateway Usage:** Provided by DOE throughout the entire six-month period at no cost to GPO or the libraries.

- **Records Downloaded or Printed from the Gateway:** All records downloaded or printed through the Gateway options were provided by DOE throughout the entire six-month period at no cost to GPO or the libraries.

  Note that libraries who used the Gateway to search DIALOG were charged as usual by DIALOG for the connect time and transactions on that system. Those charges would have been transmitted to the libraries through DIALOG's normal billing methods and were never controlled by or seen by OSTI. The Gateway operations that were free to the Depository Libraries were those occurring on ITIS.

As noted earlier, the Depository Libraries spent a total of 264.05 hours connected to ITIS. The total dollar value of their online time was $4,224.77. Of this total, GPO subsidized 56.59 hours of online time for $905.45; the libraries paid $777.60 for 48.60 hours of online time; and DOE subsidized 158.86 hours of online time for a value of $2,541.72.

Based on average monthly usage, the libraries made use of the billed portions of the system less during the four months when they were paying for this online time than they did during the first two months when GPO paid. They also used the DOE-subsidized portions of the system more than the billed portions of the systems both during the first two months and during the final four months of Component I. The breakdown of online usage costs paid for by GPO, DOE, and the libraries is given in Appendix I.

In the third survey of Component I, Question F.21, libraries were instructed, "For each of the following project cost components, please indicate the total cost to your library for the entire project

Table 3: Other Costs Reported by Libraries Participating in Component I
Final Project Evaluation Survey

Indicate the Total Cost to Your Library for the Entire Project and Whether Cost is Estimated or Actual.
(Question F.21)

Library Name	Training	Travel	Computer/ Data Processing	Telecom- munications	Material, Equipment, Supplies	Staff Costs	Other	Totals
Cleveland Public Library	NA	$800.00 E	NA	NA	NA	NA	$300.00 A	$1,100.00
College of William & Mary		312.00 A		20.00 E				332.00
Denver Public Library	200.00 E	800.00 E						1,000.00
Eastern Washington University	NA	1,054.00 A	2,000.00 E	NA	52.00 A	5,409.00 E	NA	8,515.00
Emporia State University	NA	1,004.20 A	3,000.00 A	20.00 E	25.00 E	1,450.00 E		5,499.20
Louisiana State University*								0.00
Oklahoma Department of Libraries	NA	1,000.00	1,000.00	200.00		250.00		2,450.00
Rice University	200.00 E	1,087.59 A		35.00 A		200.00 E		1,522.59
Texas A&M University		1,012.98 A						1,012.98
University of Colorado	NA	900.00 E	NA	NA	NA	1,000.00 E		1,900.00
University of Kentucky	NA	1,150.00 A	0.00 E	0.00 E	25.00 E	2,450.00 E		3,625.00
University of Massachusetts	NA	1,044.50 A	310.00 A	24.50 E	5.00 E	1,925.00 E	45.00	3,354.00
University of Minnesota		1,000.00 A						1,000.00
University of New Mexico	NA	1,000.00 E	NA		NA	NA		1,000.00
University of Tennessee	NA	45.00 E	NA	75.20 A	NA	900.00 E		1,020.20
Utah State University		900.00 E				500.00 E		1,400.00
West Virginia University	NA	765.05 A	167.04 A			609.29 E		1,541.38
Total	$400.00	$13,875.32	$6,477.04	$374.70	$107.00	$14,693.29	$345.00	$36,272.35

Note 1: "A" designates actual cost. "E" designates estimated cost. "NA" indicates that the library did not incur or chose not to report this cost.
Note 2: "*" indicates that the library did not specify costs.

Additional library comments related to cost are located in Appendix H.

and whether this cost is actual or estimated." The input which libraries provided in response to this question is shown in Table 3. Note that these are costs in addition to the online costs discussed previously and also that the figures are incomplete because not all libraries provided data.

The table shows that, of these additional costs, travel and staff costs were the largest expense to the libraries, together composing 78% of the total reported costs. The median cost per was library $1,400.00.

Survey Results—Component I

This portion of the report presents the results of the three survey instruments administered during Component I. The tables of data and the accompanying text are organized under three main headings taken from the titles of the three questionnaires. Copies of the survey instruments, with results, and the responses to open-ended questions, explanations of responses, and comments returned from the participating libraries are found in Appendixes C, D, E, F, G, H, and J.

Depository Library Use of DOE Microfiche Survey Results

This first survey consisted of 31 questions aimed at discovering the normal practices of the libraries for handling the DOE microfiche, handling microfiche in general, and for handling users' requests for scientific and technical information that may lead to the DOE microfiche. Because this survey was intended to establish baseline information, libraries were instructed to respond to the questions based on their operation prior to the beginning of the Pilot Project. Sixteen of the 17 libraries involved in Component I responded.

Discussion of this survey is organized into five sections and a summary. The first paragraph of each section identifies the specific questions from the survey instrument to which the section applies. A copy of the questionnaire itself, with results, is found in Appendix C. In addition, the individual responses to open-ended questions, explanations of responses, and libraries' comments are found in Appendix D.

Methods Used for Storing and Filing Microfiche

Questions B.1 through B.6 of the questionnaire asked the libraries about their normal practices for storing and filing DOE microfiche and microfiche in general. The first question asked the libraries to identify the physical location of their DOE microfiche collection. Eleven of the 16 responding libraries answered that DOE microfiche were housed in the main library. The other five respondents identified branch libraries, including a Physical Sciences Library, Science/Engineering branches, and a branch identified as the Accelerator Facility (Table 4 and Appendix D, Question B.1).

The libraries were then asked to rank the accessibility of DOE microfiche to their patrons. On a five-point scale that ranged from "Very accessible" to "Not at all accessible," 12 of the libraries (75%) indicated they were "Very accessible." One did explain, however, that "You have to be on the right campus. A few of our energy information users work on a different campus one mile away" (Figure 6 and Appendix D, Question B.2.a).

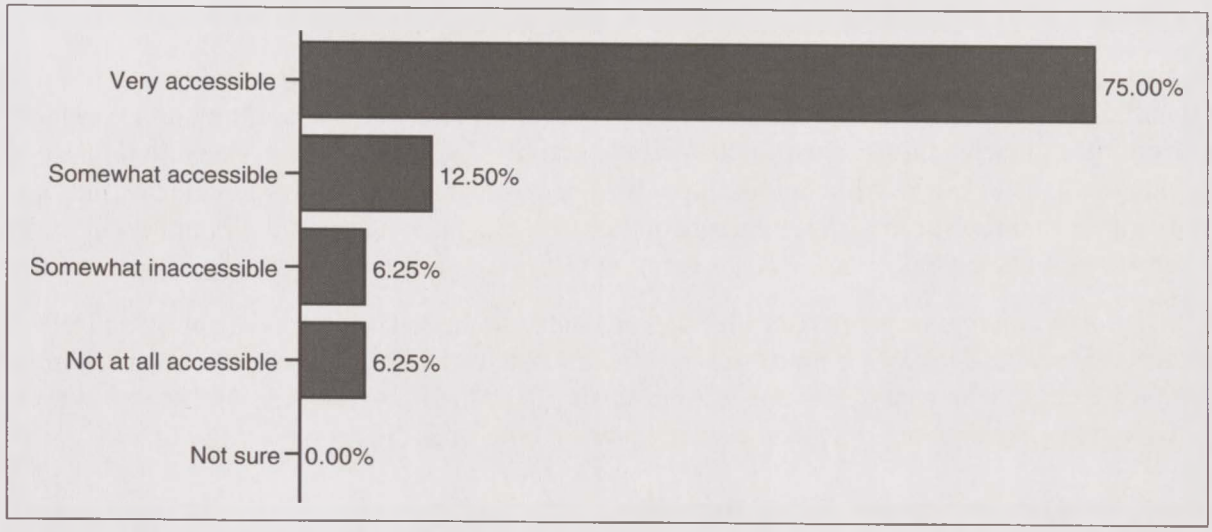
Respondents were then given 5 questions and asked to check the answer that best *described* the accessibility of the DOE microfiche in their library. More than 80 percent replied that a "Yes" best answered four of the five questions. The percentage fell when replying to the question, "Is the index [to microfiche] located in the microfiche area?" Eight answered "Yes," but 7 said "No" or "Somewhat/Sometimes" (Table 5).

Table 4: Depository Library Use of DOE Microfiche Survey

Where are DOE microfiche physically located? (Question B.1)

	Freq.	Percent
Main library	11	68.75
Branch library	5	31.25
Dispersed among several locations	0	0.00
Other	0	0.00
Not sure	0	0.00
Total	16	100.00

Figure 6: How accessible are DOE microfiche to patrons?



Source: Appendix C, Question B.2.a

Table 5: Depository Library Use of DOE Microfiche Survey

Describe the accessibility of DOE microfiche in your library. (Question B.2.b)

	Yes		No		Somewhat/ Sometimes		Not sure		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Are staff available to assist patrons inaccessing microfiche?	15	93.75	0	0.00	1	6.25	0	0.00	16	100.00
Are microfiche readers/printers located in the microfiche area?	13	81.25	1	6.25	2	12.50	0	0.00	16	100.00
Are patrons allowed to browse the fiche collection?	13	81.25	3	18.75	0	0.00	0	0.00	16	100.00
Is the microfiche area open the same number of hours that the library is open?	14	87.50	2	12.50	0	0.00	0	0.00	16	100.00
Is the index located in the microfiche area?	8	50.00	7	43.75	1	6.25	0	0.00	16	100.00

Question B.3 asked "How are your filing systems for microfiche and paper copies of DOE reports organized?" Given 10 statements that acted as answers, libraries were instructed to check all that applied. As Table 6 shows, respondents checked the DOE report number, the SuDocs call number, and the DE number for microfiche. The paper copies of DOE reports were filed by SuDocs call number, DOE report number, subject heading, or by the Library of Congress (L.C.) call number. Two libraries indicated they did not receive paper copies (Table 7). All of the libraries indicated that they stored their microfiche in microfiche files or drawers, with two indicating they also used boxes (Table 8).

The next two questions, B.5 and B.6, asked the libraries to identify the persons who usually retrieve microfiche, those who usually re-file them, and to indicate whether problems with missing or mis-filed fiche attributable to the procedures for retrieving or re-filing were major or minor or whether there were "No problems." Most (87.50%) of the libraries responded that both library staff and patrons may retrieve microfiche, but all answered that it is the library staff that usually refiles them (Table 9). Related

Table 6: Depository Library Use of DOE Microfiche Survey

How are your filing systems for microfiche of DOE reports organized? (Check all that apply.) (Question B.3)

	Freq.	Percent
By DOE report number	10	62.50
By SuDocs call number	8	50.00
By DE number	2	12.50
By date of receipt	0	0.00
By fiche shipment number	0	0.00
By subject heading	0	0.00
Other filing method	0	0.00
Don't receive	0	0.00
Don't file	0	0.00
Don't know/not sure	0	0.00

Based on responses from 16 libraries.

Table 7: Depository Library Use of DOE Microfiche Survey

How are your filing systems for paper copies of DOE reports organized? (Check all that apply.) (Question B.3)

	Freq.	Percent
By SuDocs call number	11	73.33
By DOE report number	4	26.67
By subject heading	2	13.33
Other filing method:		
L.C. call number	2	13.33
Don't receive	2	13.33
By date of receipt	0	0.00
By DE number	0	0.00
By fiche shipment number	0	0.00
Don't file	0	0.00
Don't know/not sure	0	0.00

Based on responses from 15 libraries.

Table 8: Depository Library Use of DOE Microfiche Survey

What type of equipment, if any, is available at your library for filing and storing microfiche? (Check all that apply.) (Question B.4)

	Freq.	Percent
Microfiche files or drawers	16	100.00
Boxes	2	12.50
Lektriever or other automated equipment	0	0.00
Other	0	0.00
No equipment is available	0	0.00

Based on responses from 16 libraries.

Table 9: Depository Library Use of DOE Microfiche Survey

What is your library's procedure for retrieving or refiling microfiche? (Question B.5)

	Who usually retrieves microfiche?		Who usually refiles microfiche?	
	Freq.	Percent	Freq.	Percent
Staff and patrons	14	87.50	16	100.00
Library staff only	2	12.50	0	0.00
Patrons only	0	0.00	0	0.00
Don't know	0	0.00	0	0.00
Total	16	100.00	16	100.00

to this, the problems with missing or mis-filed fiche were identified as minor by 75%, with 3 respondents marking "No problems." One response was marked as a "Not sure," but none of the libraries marked "Major problems" as an appropriate response (Table 10).

Table 10: Depository Library Use of DOE Microfiche Survey

Has your library experienced any problems with missing or mis-filed fiche attributable to the procedures for retrieving or refiling? (Question B.6)

	Freq.	Percent
Major problems	0	0.00
Minor problems	12	75.00
No problems	3	18.75
Not sure	1	6.25
Total	16	100.00

Patron Requests for Scientific and Technical Information

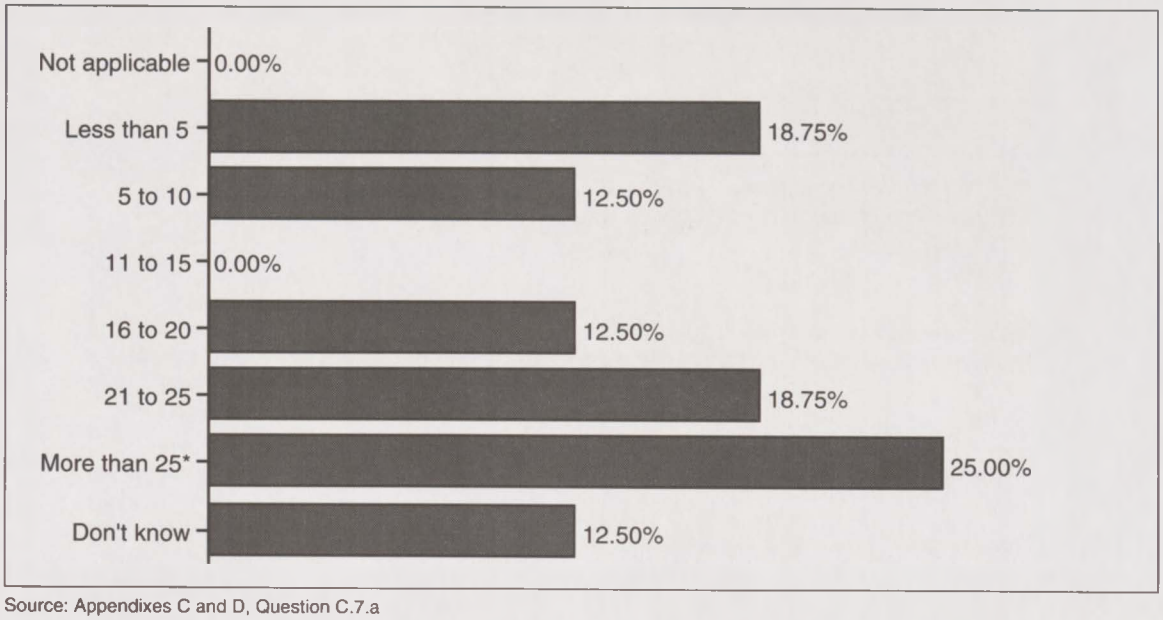
This section covers Questions C.7 through C.8.b and Question D.14. Attachment A to the questionnaire was a list of 49 DOE subject categories. The libraries were first asked, "During the past year, approximately how many collective requests for scientific and technical information (STI) related to these subject categories did your library *typically* receive in a week?" The survey question provided several ranges (for example, "5 to 10") as answers; libraries were to check only one answer. Four of the 16 responding libraries estimated that they received more than 25 of these STI requests each week. These libraries wrote in their own numbers, estimating that they received STI requests ranging from 170 per week, to 150 or more, to 75, to 50 per week. Five of the other libraries reported receiving anywhere from 16 to 25 STI requests per week. Only three indicated they received less than five per week. (Figure 7).

The second part of this question (C.7.b) asked the libraries to indicate the average number of times per week that they accessed DOE microfiche to satisfy the requests identified in C.7.a. These numbers were lower. Only one library reported accessing the DOE fiche as often as 21 to 25 times a week, and 6 (37.50%) indicated less than 5 times a week (Figure 8).

Question C.8 also consisted of two parts. Part a of question C.8 (Table 11), still referring to requests for STI related to the DOE subject categories, asked the libraries to estimate what percentage of the time the patrons requested STI for specific time periods. Only 14 of the libraries responded to this question, and 2 of those marked "Not sure/no basis to respond." Twelve libraries did respond, and, on average, 25.42% of the time requestors specified a time period. For 74.58% of the time they did not specify a time period. The median values were 20% of the time requesting a specified time period and 80% of the time not requesting a specified time period.

Part b of Question C.8 asked the libraries to estimate, for those patrons that did specify a time period, how often four different time period ranges were requested. Respondents were to provide an answer for each of the four ranges. The "Documents less than one year old" were requested "Very often" or

Figure 7: During the past year, approximately how many requests for scientific and technical information (STI) related to DOE energy subject categories did your library *typically* receive in a week?

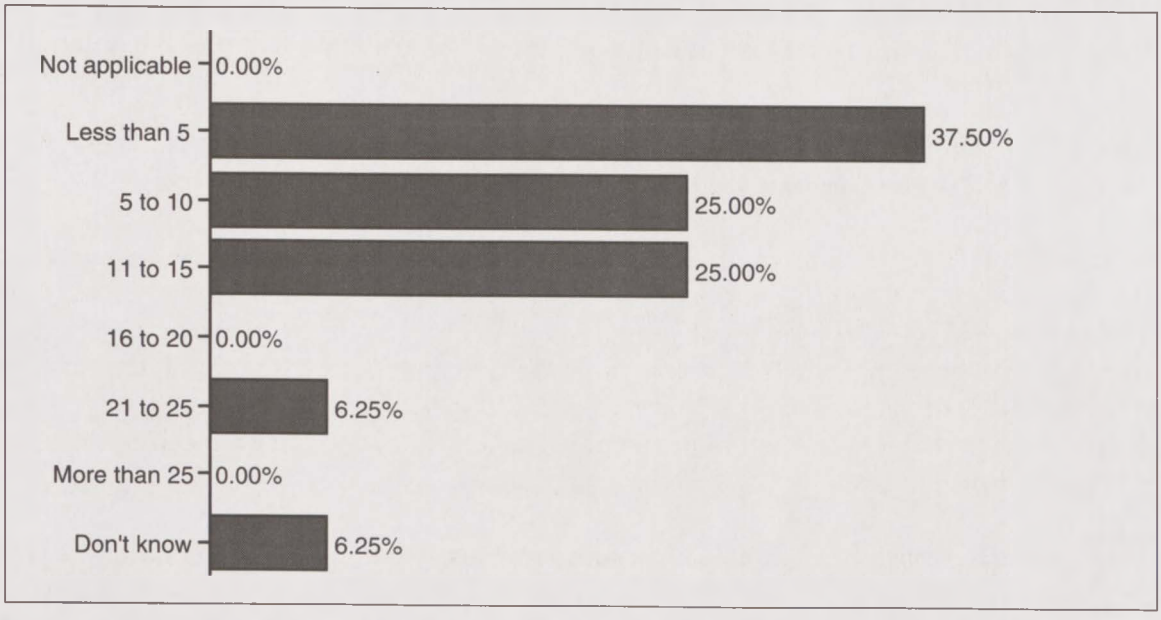


Source: Appendixes C and D, Question C.7.a

* Number of requests greater than 25 (4 responses):

	Freq.	Percent
170	1	25.00
150+	1	25.00
75	1	25.00
50	1	25.00
Total	4	100.00

Figure 8: Please indicate average number of times per week you access DOE fiche to satisfy requests for scientific and technical information (STI) related to DOE energy subject categories.



Source: Appendix C, Question C.7.b

Table 11: Depository Library Use of DOE Microfiche Survey

When you receive requests for STI related to DOE energy subject categories, about what percentage of the time do patrons actually request specific time periods? (Question C.8.a)

	Percent
Average percentage of times a specific time period is requested:	25.42
Average percentage of times a specific time period is not requested:	74.58
Total	100.00
Median percentage of times a specific time period is requested:	20.00*
Median percentage of times a specific time period is not requested:	80.00†
Total	100.00

*High value = 90, low value = 5
†High value = 95, low value = 10

Based on responses from 12 libraries.

"Often" by 11 of the 15 responding libraries. Only 14 libraries answered for the second time period, "Documents published in the past 1–5 years," but again "Very often" or "Often" received most of the responses (85.71%). "Documents published in the past 6–10 years" were marked as "Sometimes" or "Rarely" by 11 of 15 libraries, while none of the libraries marked "Often" or "Very often" for the older documents, those published "over 10 years ago" (Table 12).

Question D.14 was aimed at discovering how online searches for library patrons are typically funded. Of the 14 libraries responding, 5 (35.71%) said that "Depends on the type of query." They explained their responses by noting that the costs of quick or ready reference searches were absorbed by the library but longer searches or subject bibliographies were paid for by the patron. Three others (21.43%) said that who pays "Depends on who the patron is"; two of those cited the difference as being between university faculty or students and those not affiliated with the university. While

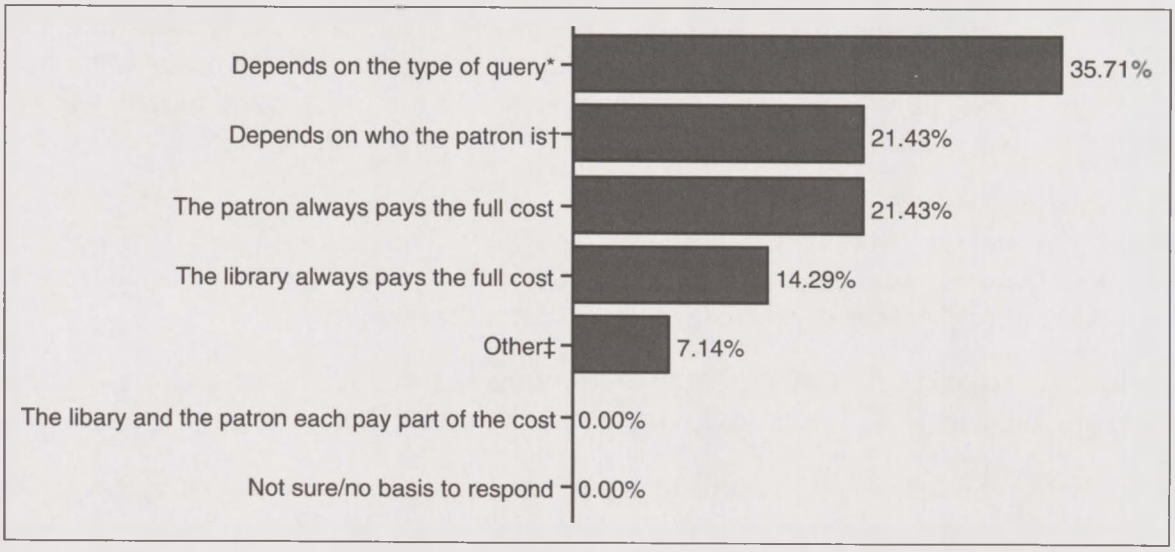
Table 12: Depository Library Use of DOE Microfiche Survey

For those requests you receive that do specify a time period, about how often is each period usually specified? (Question C.8.b)

	Very Often		Often		Sometimes		Rarely		Almost Never		Not Sure		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Documents less than one year old	4	26.67	7	46.67	2	13.33	2	13.33	0	0.00	0	0.00	15	100.00
Documents published in past 1-5 years	5	35.71	7	50.00	2	14.29	0	0.00	0	0.00	0	0.00	14	100.00
Documents published in past 6-10 years	0	0.00	3	20.00	7	46.67	4	26.67	1	6.67	0	0.00	15	100.00
Documents published over 10 years ago	0	0.00	0	0.00	6	40.00	5	33.33	4	26.67	0	0.00	15	100.00

another five libraries split between "Patron always pays" (3) and "Library always pays" (2), one library that marked "Other" explained, "A few databases are funded by library since subscription had to be cancelled and was a moderately or high use index, e.g., Chemical Abstracts. Patron usually pays full cost of 90% of online searches" (Figure 9 and Appendix D, Question D.14).

Figure 9: How are online searches for library patrons typically funded?



Source: Appendixes C and D, Question D.14

*Explanation of answer of "Depends on the type of query" (5 responses):

- Quick reference or verification of a citation is paid by library. Longer searches (i.e., more than 10 print-outs or over $6) are paid entirely by patron or their funded research.
- Library pays for quick reference searches. Patron pays for all others, either personally or with dept./grant funding.
- Ready reference searches are free. Longer searches the patron pays the full cost.
- Quick reference—library pays.
- Ready reference—paid by library, preparation of subject bib.—paid by patron.

†Explanation of answer of "Depends on who the patron is" (3 responses):

- Faculty/student pay cost less $10.00 Non-EWV.
- University students, staff & faculty get subsidized searching, so they pay only a portion of costs incurred. "Outside" people pay a flat fee plus full cost.
- Some are paid by endowment.

‡Explanation of answer of "Other" (1 response):

- A few databases are funded by library since subscription had to be cancelled, and was a moderately or high use index (e.g., Chemical Abstracts). Patron usually pays full cost of 90 of online searches.

Based on 14 valid responses (i.e., two libraries checked more than one answer).

Methods Used To Locate and Access Microfiche

This section includes the responses to questions in three parts of the survey instrument, specifically Questions C.9.a, D.9.b, D.10 through D.13, and H.29 through H.30.

The first two questions concerned the reference sources that may lead a patron to the DOE microfiche collection. Respondents were given a list of 14 sources, including printed sources such as the *Energy Research Abstracts (ERA)*, online sources such as databases on DIALOG, databases on CD-ROM,

an in-house online catalog, and sources that were themselves on microfiche. They were asked to rate how often they used each of these sources to find information answering the STI requests related to DOE energy subject categories. Table 13 presents the responses.

In answer to Question C.9.a., the source for which the greatest number of respondents (6 of 15) marked "Always/Almost always" was an in-house online catalog. The source which was the least ("Never/Almost never") searched by the greatest number of respondents (8 of 15) was NSA on DIALOG. Responses for the Energy Science and Technology Database on ITIS ranged from "Often" for one respondent, through "Sometimes" for six others, to four libraries who marked "No Access/ Don't Own." It should be remembered that respondents were instructed at the beginning of this questionnaire to answer in terms of their operation prior to the start of the DOE Pilot Project.

Energy Research Abstracts (ERA) was used more often than DOE Energy on DIALOG, with 5 respondents marking "Always/Almost Always" and "Often" for *ERA* and only one marking either one of those frequencies for the database on DIALOG. Both sources, however, received nearly the same number of respondents saying they used the source "Sometimes."

There were 10 responses for "Other CD-ROM" and "Other." Those additional sources named by the libraries are found in Table 13 and Appendix D under Question C.9.a.

With the various reference sources identified, the libraries were asked to rate how often each one of those sources led them or their patrons to the DOE microfiche collection. Possible responses for each source ranged from "Always/Almost Always" to "No Access/Don't Own." "An in-house online catalog," which, in C.9.a, outranked all of the other sources for the number of "Always/Almost Always" and "Often" responses received, fell to fifth place in this part of the scale when respondents were estimating how often the sources they searched to answer STI requests led them or their patrons to the DOE microfiche collection. This appears logical in light of the fact that 81.25% of the responding libraries said they did not catalog their DOE fiche. Thirteen libraries said that *ERA* "Always/Almost Always" or "Often" led them to the fiche. It is interesting to note that DOE's energy information on DIALOG was marked by only 1 library as a source it always or often searched, but 11 respondents said it always or often led them to the DOE fiche. How the respondents replied for each of the sources is found in Table 14.

The respondents were then asked to rate, in Question D.10, each one of six different types of requests in terms of how often those types led them or their patrons to access DOE microfiche. Table 19 shows that the request types receiving the most positive ("Always/Almost Always" and "Often") ratings from more than 50% of the respondents were those based on a specific DOE report number identified from a printed or an online source. The query type that rated lowest ("Never/Almost Never" or "Rarely") with the greatest number of respondents (15 of 16) was "Subject browsing of collection using fiche subject headers" (Table 15).

Table 16 displays the responses given to Question D.11, which was, "When patrons request a specific DOE report, how often have they used the following sources to identify information about the report?" The footnotes, references, and bibliographies of other reports or papers, and OCLC were noted under the "Other" category as additional sources that "Often" have been used to identify information about specific DOE reports (Appendix D, Question D.11).

Question D.12 asked respondents to describe how patrons *usually* behave when reviewing the DOE microfiche they have accessed. Respondents were to check as many of the seven choices as applied.

Table 13: Depository Library Use of DOE Microfiche Survey

About how often do you search each of the following sources to find information concerning requests for STI? (Question C.9.a)

	Always/Almost Always		Often		Sometimes		Rarely		Never/Almost Never		Not Sure		No Access/ Don't Own		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Energy Research Abstracts/ERA	3	20.00	2	13.33	9	60.00	0	0.00	1	6.67	0	0.00	0	0.00	15	100.00
DOE Energy on DIALOG	0	0.00	1	6.25	10	62.50	3	18.75	1	6.25	0	0.00	1	6.25	16	100.00
NTIS on DIALOG	1	6.67	2	13.33	9	60.00	2	13.33	1	6.67	0	0.00	0	0.00	15	100.00
NSA on DIALOG	0	0.00	0	0.00	1	6.67	4	26.67	8	53.33	1	6.67	1	6.67	15	100.00
DOE Energy on STN	0	0.00	0	0.00	2	13.33	3	20.00	6	40.00	0	0.00	4	26.67	15	100.00
EDB on ITIS	0	0.00	1	6.25	6	37.50	3	18.75	2	12.50	0	0.00	4	25.00	16	100.00
In-house online catalog	6	40.00	3	20.00	4	26.67	0	0.00	1	6.67	0	0.00	1	6.67	15	100.00
NTIS on CD-ROM	3	20.00	0	0.00	1	6.67	0	0.00	0	0.00	0	0.00	11	73.33	15	100.00
GPO Monthly Catalog (CD-ROM)	0	0.00	4	26.67	5	33.33	0	0.00	0	0.00	1	6.67	5	33.33	15	100.00
GPO Monthly Catalog (fiche)	0	0.00	0	0.00	1	6.67	1	6.67	4	26.67	0	0.00	9	60.00	15	100.00
GPO Monthly Catalog (paper)	1	6.67	1	6.67	6	40.00	3	20.00	2	13.33	1	6.67	1	6.67	15	100.00
Government Reports Announcement & Index-GRA&I	4	25.00	2	12.50	7	43.75	2	12.50	1	6.25	0	0.00	0	0.00	16	100.00
Other CD-ROM*	1	11.11	3	33.33	2	22.22	0	0.00	0	0.00	0	0.00	3	33.33	9	100.00
Other†	1	16.67	3	50.00	0	0.00	0	0.00	0	0.00	0	0.00	2	33.33	6	100.00

*"Other CD-ROM " responses, line 13 (6 responses):

Always/Almost Always (1)
- Applied Science & Technology Index

Often (3)
- Compendex and Toxic Release Inventory (EPA)
- CASSIS
- US patents

Sometimes (2)
- Online catalog
- Compendex

†"Other" responses, line 14 (4 responses):

Always/Almost Always (1)
- Other paper indexes: Applied Science & Technology Index, Chemical Abstracts in paper or online, Engineering index in paper or online. Inspec indexes on paper or online, etc. Also handbooks, encyclopedias and the like.

Often (3)
- NTIS on BRS; GPO on BRS
- GPO Monthly Catalog and Chemical Abstracts on DIALOG; Scientific and Technical Aerospace Reports (NASA) in paper
- OCLC

Table 14: Depository Library Use of DOE Microfiche Survey

About how often do each of the following sources lead you or your patrons to the DOE microfiche collection? (Question D.9.b)

	Always/Almost Always		Often		Sometimes		Rarely		Never/Almost Never		Not Sure		No Access/ Don't Own		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Energy Research Abstracts/ERA	7	46.67	6	40.00	1	6.67	0	0.00	1	6.67	0	0.00	0	0.00	15	100.00
DOE Energy on DIALOG	6	37.50	5	31.25	3	18.75	1	6.25	1	6.25	0	0.00	0	0.00	16	100.00
NTIS on DIALOG	1	6.67	3	20.00	11	73.33	0	0.00	0	0.00	0	0.00	0	0.00	15	100.00
NSA on DIALOG	0	0.00	1	6.67	2	13.33	5	33.33	4	26.67	2	13.33	1	6.67	15	100.00
DOE Energy on STN	1	6.67	3	20.00	0	0.00	1	6.67	4	26.67	1	6.67	5	33.33	15	100.00
EDB on ITIS	3	20.00	2	13.33	3	20.00	2	13.33	1	6.67	0	0.00	4	26.67	15	100.00
In-house online catalog	2	12.50	2	12.50	4	25.00	3	18.75	4	25.00	0	0.00	1	6.25	16	100.00
NTIS on CD-ROM	2	14.29	0	0.00	1	7.14	0	0.00	0	0.00	0	0.00	11	78.57	14	100.00
GPO Monthly Catalog (CD-ROM)	0	0.00	2	14.29	7	50.00	0	0.00	0	0.00	1	7.14	4	28.57	14	100.00
GPO Monthly Catalog (fiche)	0	0.00	0	0.00	2	14.29	0	0.00	4	28.57	0	0.00	8	57.14	14	100.00
GPO Monthly Catalog (paper)	0	0.00	2	14.29	3	21.43	3	21.43	3	21.43	2	14.29	1	7.14	14	100.00
Government Reports Announcement & Index GRA&I	3	18.75	3	18.75	5	31.25	5	31.25	0	0.00	0	0.00	0	0.00	16	100.00
Other CD-ROM*	0	0.00	2	25.00	0	0.00	0	0.00	3	37.50	1	12.50	2	25.00	8	100.00
Other†	0	0.00	1	20.00	3	60.00	0	0.00	0	0.00	0	0.00	1	20.00	5	100.00

*"Other CD-ROM" responses, line 13 (5 responses):

Often (2)
- CASSIS
- Online catalog

Never/Almost never (2)
- US patents
- Compendex

Not sure (1)
- Compendex and Toxic Release Inventory (EPA)

†"Other" responses, line 14 (4 responses):

Often (1)
- OCLC

Sometimes (3)
- NTIS on BRS; GPO on BRS
- GPO Monthly Catalog and Chemical Abstracts on DIALOG; Scientific and Technical Aerospace Reports (NASA) in paper
- Applied Science & Technology Index, Chemical Abstracts in paper or online, Engineering index in paper or online. Inspec indexes on paper or online, etc. Also handbooks, encyclopedias and the like.

Table 15: Depository Library Use of DOE Microfiche Survey

How often do each of the following *types* of requests lead you or your patrons to access the DOE fiche collection? (Question D.10)

	Very Often		Often		Sometimes		Rarely		Almost Never		Not Sure		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Specific DOE report number identified from a printed source	7	43.75	7	43.75	1	6.25	1	6.25	0	0.00	0	0.00	16	100.00
Specific DOE report number identified from an online source	6	37.50	4	25.00	5	31.25	1	6.25	0	0.00	0	0.00	16	100.00
Other report identification from a printed source	1	6.25	6	37.50	6	37.50	1	6.25	1	6.25	1	6.25	16	100.00
Other report identification from an online source	1	6.25	4	25.00	5	31.25	3	18.75	2	12.50	1	6.25	16	100.00
Subject browsing of collection using fiche subject headers	0	0.00	0	0.00	1	6.25	4	25.00	11	68.75	0	0.00	16	100.00
Subject queries leading to use of ERA or online source	1	6.25	7	43.75	3	18.75	3	18.75	1	6.25	1	6.25	16	100.00
Other	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	100.00	1	100.00

Table 16: Depository Library Use of DOE Microfiche Survey

When patrons request a specific DOE report, how often have they used the following sources to identify information about the report? (Question D.11)

	Very Often		Often		Sometimes		Rarely		Almost Never		Not Sure		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Printed source (i.e., ERA, GRA&I, etc.)	2	12.50	8	50.00	3	18.75	3	18.75	0	0.00	0	0.00	16	100.00
Online source (i.e., DIALOG, STN)	1	6.25	5	31.25	8	50.00	2	12.50	0	0.00	0	0.00	16	100.00
CD-ROM such as NTIS	2	13.33	2	13.33	4	26.67	0	0.00	7	46.67	0	0.00	15	100.00
Word of mouth	0	0.00	1	6.67	4	26.67	5	33.33	4	26.67	1	6.67	15	100.00
Other: Footnotes/references in a paper or report*	0	0.00	4	100.00	0	0.00	0	0.00	0	0.00	0	0.00	4	100.00
Other: OCLC*	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00	1	100.00

* Percentages based on 5 libraries providing "other" responses.

Table 17 shows that 11 of the 15 responding libraries (73.33%) indicated that patrons usually used the microfiche printer to print specific pages or references. Using the microfiche reader and then requesting a printout of the entire report, if relevant, was also a common patron behavior; 8 of the 15 respondents (53.33%) marked this choice. Only one library indicated that patrons usually skip any references that are contained on microfiche.

Three of 15 libraries said they made DOE microfiche physically available (i.e., retrievable) within 1 to 2 days after receiving them in a shipment, while 5 others marked "Within a Week." Only one library responded that it took "Longer than one Month" after receipt for them to make DOE microfiche physically available to patrons. All 16 libraries responded to the second part of this question as to how quickly after a shipment they made microfiche bibliographically available (i.e., announced or available to patrons in an index), but half of them marked "Not Sure." Six of the other eight ranged from "Within a Week" to "Within a Month." Two marked "Longer than one Month" (Table 18).

Table 17: Depository Library Use of Microfiche Survey

When reviewing DOE reports on microfiche do library patrons *usually*: (Check all that apply.) (Question D.12)

	Freq.	Percent
Use the fiche printer to print specific pages or references	11	73.33
Use the fiche reader and then request a printout of the entire report if relevant	8	53.33
Use the fiche reader without printing any pages/records	6	40.00
Print the entire report without previewing it on the fiche reader	3	20.00
Not sure/no basis to respond	2	13.33
Other: Ask us to purchase paper copy of report	1	6.67
Other: Complain that we don't have in paper	1	6.67
Other: Duplicate microfiche (3 duplicators here)	1	6.67
Skip any references that are contained on microfiche	1	6.67

Based on responses from 15 libraries.

Table 18: Depository Library Use of Microfiche Survey

After a shipment of microfiche is received by the library, how soon are DOE microfiche made physically available (i.e., retrievable) and bibliographically available (i.e., announced or available to patrons in an index) to patrons? Check one box on each row. (Question D.13)

	Less than 1 Day		Within 1-2 Days		Within a Week		Within 2 Weeks	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Physically available	0	0.00	3	20.00	5	33.33	3	20.00
Bibliographically available	0	0.00	0	0.00	3	18.75	1	6.25

	Within a Month		Longer than 1 Month		Not Sure		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Physically available	3	20.00	1	6.67	0	0.00	15	100.00
Bibliographically available	2	12.50	2	12.50	8	50.00	16	100.00

The last two questions discussed in this section are H.29 and H.30 on the survey instrument. When asked if they or their patrons had experienced any significant difficulties in effectively accessing DOE technical report literature, 10 of the 16 libraries answered "Yes." These 10 were then asked to check all choices that applied out of 8 statements describing the nature of the access difficulty referred to in H.29. The ninth choice was "Other." Table 19 shows how many check marks were made for each of the choices. Two statements received an equal number of check marks and obviously outranked all the other choices; these were the statements indicating that patrons were unaware of the availability of microfiche and/or that they disliked the microfiche format (Appendix D, Question H.30).

Table 19: Depository Library Use of Microfiche Survey

What is the nature of this access difficulty?
(Check all that apply.)
(Question H.30)

	Freq.	Percent
Patrons aren't aware of the availability of microfiche	8	80.00
Patrons dislike microfiche format	8	80.00
Patrons have difficulty locating the information on microfiche	3	30.00
Fiche are missing or mis-filed	2	20.00
Library staff aren't trained in accessing microfiche	1	10.00
Microfiche aren't filed or made available in a timely manner	1	10.00
Other: Don't receive international fiche/other non-depository which are in old version of ERA	1	10.00
Other: ERA is too time consuming. DIALOG is too expensive.	1	10.00
Other: We know about reports before they are indexed or shipped—have to wait for access.	1	10.00
Other: (response illegible).	1	10.00
Poor quality of fiche reader or printer equipment	1	10.00
Insufficient number of microfiche readers or printers to meet demand	0	0.00

Based on responses from 10 libraries.

Note: Only those libraries which answered "Yes" on Question H.29 were eligible to answer this question.

Methods Used To Acquire and Maintain Microfiche Cataloging Records

This section includes Questions E.15 through E.30 on the survey instrument and deals with the libraries' normal practices prior to the Pilot Project for acquiring and cataloging microfiche.

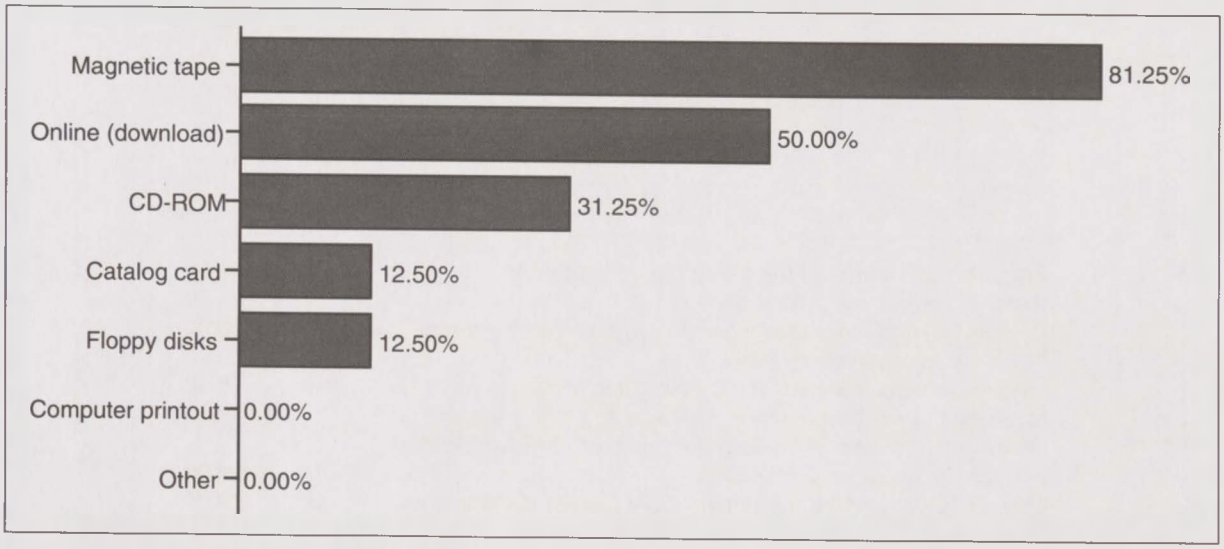
Question E.15 asked, "On which media, if any, do you receive cataloging records for books, monographs, reports, etc?" The libraries were instructed to check all of the seven choices that applied, including "Other." All 16 libraries answered. Most (81.25%) of them were receiving cataloging records on magnetic tape, and half of them were downloading cataloging from online sources. The other media were not as common, though "CD-ROM" received more check marks than the last three combined (Figure 10).

The libraries were then asked to check all media they currently used to *maintain* their cataloging records (including those produced internally as well as those acquired from external sources). All but

2 of the 16 libraries checked "Online catalog." Magnetic tape was another common medium for maintaining cataloging records. See the range of responses in Figure 11.

Vendors from which they obtained cataloging records for books and monographs were identified by the libraries as OCLC, GPO, the Library of Congress, and RLIN. All of the libraries indicated that they received records from OCLC, and five circled this vendor as their preferred choice. The other 11 libraries did not indicate a preference (Figure 12).

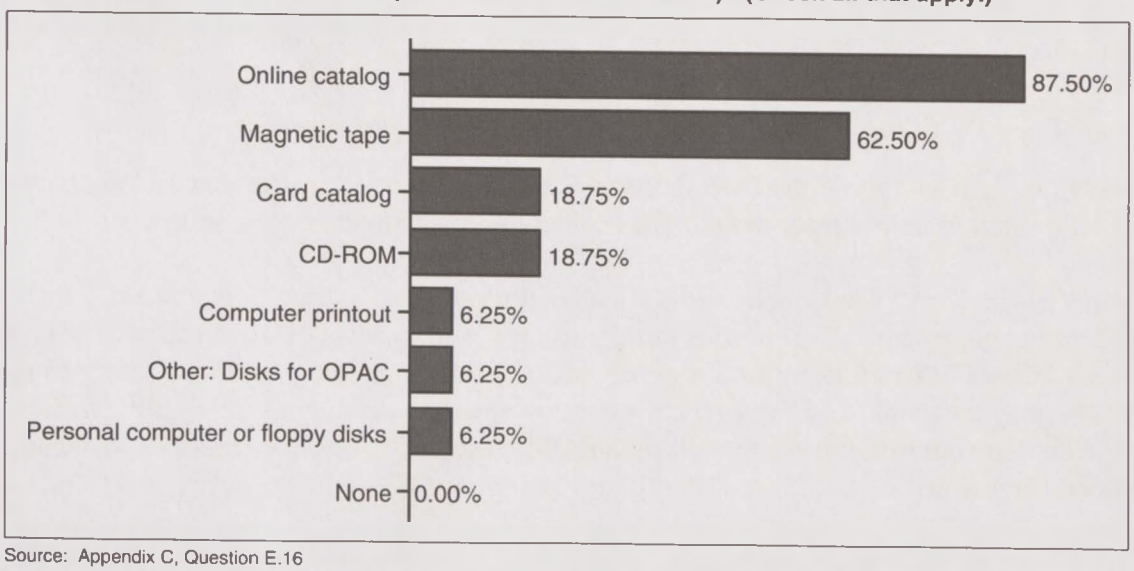
Figure 10: On which media, if any, do you receive cataloging records for books, monographs, reports, etc.? (Check all that apply.)



Source: Appendix C, Question E.15

Based on 16 responses.

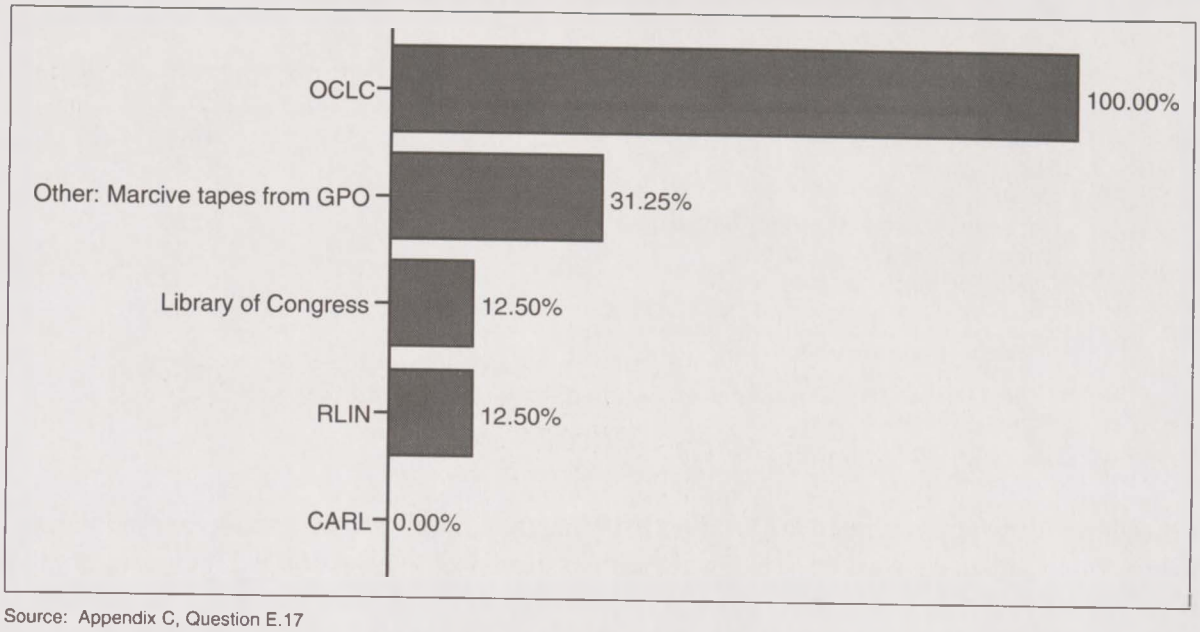
Figure 11: Which media, if any, do you currently use to *maintain* your cataloging records (including those produced internally as well as those acquired from external sources)? (Check all that apply.)



Source: Appendix C, Question E.16

Based on 16 responses.

Figure 12: Which vendors do you use to obtain cataloging records for books and monographs? (Check all that apply.)



Source: Appendix C, Question E.17

Based on responses from 16 libraries.

Note: Five libraries (31.25%) selected OCLC as their preferred source.

The libraries were asked if they anticipated using the same vendor(s) for cataloging records of technical reports. Seven of the 15 libraries answered "Yes," 4 answered "No," and 5 marked "Not sure." Those that were "Not sure" indicated they did not catalog all fiche reports or technical documents. (See Appendix D, Question E.18 for the specific responses.)

Question E.19 asked each respondent to check one of four statements that best described that library's method of cataloging DOE microfiche in particular. All but three (81.25%) answered that they did not catalog these fiche prior to the Pilot Project (Table 20). Of the three who *were* cataloging fiche, two indicated they "acquire cataloging from an external source only," and one marked "We perform the cataloging internally only."

Table 20: Depository Library Use of Microfiche Survey

Which statement *best* describes your library's method of cataloging DOE fiche? (Question E.19)

	Freq.	Percent
We do not catalog DOE microfiche	13	81.25
We acquire cataloging from an external source only	2	12.50
We perform the cataloging internally only	1	6.25
We use both the external and internal methods	0	0.00
Total	16	100.00

The 13 libraries who were not cataloging DOE fiche prior to the Pilot Project were asked to respond to the next question, indicating why not. They were allowed to check all statements that applied. The most common response, checked by 84.62% of the 13 libraries, was "Not enough staff." Statements to the effect that cataloging these fiche was "Too expensive," that there was "Not enough time," and "Not enough demand for DOE fiche to justify the time/expense" each received check marks from more than 50% of the respondents (Table 21).

Table 21: Depository Library Use of Microfiche Survey

If you do not currently catalog DOE fiche, please indicate why not. (Check all that apply.) (Question E.20)

	Freq.	Percent
Not enough staff	11	84.62
Too expensive	9	69.23
Not enough time	8	61.54
Not enough demand for DOE fiche to justify the time/expense	7	53.85
Do not catalog any type of fiche	2	15.38
Other: Too much computer space	1	7.69
Other: Very few records available on OCLC	1	7.69

Based on responses from 13 libraries.

Note: Only the 13 libraries selecting an answer of "Do not catalog DOE microfiche" on Question E.19 were eligible to answer this question.

The two libraries which indicated in Question E.19 that they acquired their cataloging for DOE fiche from external sources were asked to list these sources in answer to Question E.21. One library listed "OCLC, Energy Abstracts, SuDocs (Mo. Cat), and CD-ROM (GDCS)." The other listed downloading from DOE/OSTI (Appendix D, Question E.21). This second respondent may have been answering in regard to the situation during the Pilot Project rather than before it began.

Remember that only three libraries indicated they were cataloging DOE microfiche prior to the Pilot Project. When these three were asked if the DOE microfiche cataloging was merged with the cataloging of the library's other collections, two answered "Yes"; one answered "No." The library answering "No" was asked to check the statement that best described why cataloging for DOE microfiche was maintained separately. The library chose the statement, "System cannot accommodate quantity." See Question E.23 of the survey instrument in Appendix C for the other choices that could have been marked but were not.

Library Promotion of DOE Microfiche

Questions F.24 and F.25 asked libraries how they raise awareness of or promote DOE microfiche. Methods that libraries indicated they used to make library patrons aware of this collection included a wide range of activities, from library instruction to posting bulletins or flyers to circulating lists of titles (Table 22).

Ten of the 16 libraries indicated that, outside the library, "Word of mouth" was a way of promoting DOE microfiche, while 6 marked the statement "Do not promote any fiche collection externally." The respondents could mark all statements that applied, and Table 23 shows that every response except the one that specifically excludes DOE fiche from microfiche promotion was checked at least once.

Treatment of DOE Microfiche in Library Instruction

This section covers responses for Questions G.26 through G.28. Libraries were asked, "If your staff provides any type of general instruction or orientation on library use or use of the fiche collection, is information regarding DOE microfiche included in this instruction/orientation?" Two of the libraries marked "No"; the rest answered "Yes" (7) or "Sometimes" (7). Those replying in the affirmative were

Table 22: Depository Library Use of Microfiche Survey

Which of the following do you use to make library patrons aware of DOE microfiche? (Check all that apply.) (Question F.24)

	Freq.	Percent
Library instruction	9	56.25
Online catalog	7	43.75
CD-ROM	6	37.50
Handouts	5	31.25
List of titles available	4	25.00
Patrons are referred to fiche storage to browse	4	25.00
None	3	18.75
Post bulletins or flyers inside the library	3	18.75
Computer printout of fiche titles available	2	12.50
Other: DOE produced Accessions list distributed to departments and individual faculty, (selected)	1	6.25
Other: ERA	1	6.25
Other: News alerts of all collections	1	6.25
Other: Now circulate "Accessions list"	1	6.25
Other: Ready reference	1	6.25
Other: Reference desk, citations	1	6.25
Other: Title page of report is photocopied at times and sent to interested instructors	1	6.25
Other: Verbal referrals from other libraries	1	6.25
Card catalog	0	0.00

Based on responses from 16 libraries.

Table 23: Depository Library Use of Microfiche Survey

How does your library promote the DOE fiche collection externally (i.e., outside the library)? (Check all that apply.) (Question F.25)

	Freq.	Percent
Word of mouth	10	62.50
Do not promote any fiche collection externally	6	37.50
Circulate an accessions list or bibliography of newly added titles	4	25.00
Announce/advertise in a library or institution newsletter	3	18.75
Circulate or post flyers or bulletins describing DOE fiche	2	12.50
Other: Library instruction	2	12.50
Other: Mention it when answering reference questions	1	6.25
Other: Might do publicity on new products/services	1	6.25
Promote other fiche collections externally, but not DOE fiche	0	0.00

Based on responses from 16 libraries.

asked, in Question G.27, to check the statement best describing their library's treatment of DOE fiche in this instruction/orientation. The only statement that did not receive a single response was the one saying "We provide special instruction on accessing DOE fiche." Two libraries did indicate that DOE fiche are specifically included when patrons are being taught how to access all fiche, and one library wrote in that DOE and NASA fiche are emphasized at this time (Table 24 and Appendix D, Question G.27).

Table 24: Depository Library Use of Microfiche Survey

Which statement *best* describes your treatment of DOE fiche in this instruction or orientation? (Question G.27)

	Freq.	Percent
The type of instruction depends on who is being instructed	4	30.77
We describe how to access all fiche in general terms, but don't mention specific collections	3	23.08
We don't provide formal instruction, but we do provide informal one-to-one instruction as needed	2	15.38
We describe how to access all fiche, including DOE specifically	2	15.38
Other: We describe how to access fiche, emphasizing DOE and NASA	1	7.69
Other: Use a combination of methods listed	1	7.69
We provide special instruction on accessing DOE fiche	0	0.00
Total	13	100.00

Based on responses from 13 libraries.

Note: Only the 13 libraries that answered "Yes" or "Sometimes" to Question G.26 were eligible to answer this question.

Technical Evaluation Survey Results (Mid-Project Findings)

This second survey consisted of 14 questions in Part A, 3 questions in Part B, and 28 questions in Part C. It was designed to evaluate the libraries' experience *at the mid-project point* with ITIS, the Energy Science and Technology Database, shared cataloging, and the ITIS Gateway. Accordingly, the libraries' responses do not indicate their final evaluation of the services and products utilized during Component I. Sixteen of the 17 participating libraries responded to this survey.

Discussion of this survey is organized into four sections. The first paragraph of each section identifies the specific questions from the survey instrument to which the section applies. A copy of the questionnaire itself, with results, is found in Appendix E. In addition, the individual responses to open-ended questions, explanations of responses, and libraries' comments are found in Appendix D.

Library Use of the Integrated Technical Information System

This section covers survey questions from Part A, 1.1 through 1.3. The libraries were instructed to respond to this set of questions "based on your experience to date" with ITIS.

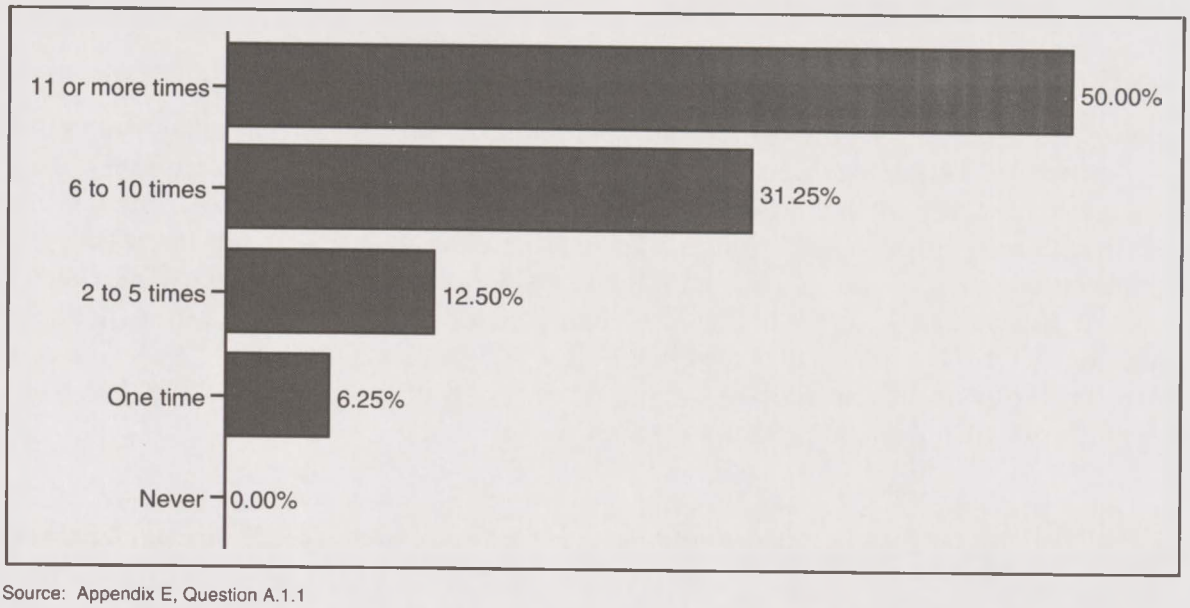
The first question asked, "Approximately how many times have you used ITIS?" Of the 16 libraries that responded to this question, 50% marked "11 or more times," and another 31.25% (5 libraries) indicated they had used the system "6 to 10 times" (Figure 13). All of the 16 responding libraries had used ITIS at least one time.

Fifteen (93.75%) of the libraries said there were no significant differences between "what the documentation states and how the system actually operates." The remaining library marked "Don't know/No basis to judge" (Appendix E, Question A.1.2).

The third question instructed the libraries to rate the ease or difficulty of 10 activities related to using ITIS. The scale for rating each one went from "Very easy" to "Very difficult," with "No basis to

judge" as an additional, possible answer. Only 1 answer was to be checked for each activity, and all 16 libraries responded (Table 25).

Figure 13: Approximately how many times have you used ITIS?



Source: Appendix E, Question A.1.1

Table 25: Technical Evaluation Survey

Based on your experience to date with ITIS, rate the ease or difficulty of the following activities. (Question A.1.3)

	Very Easy		Generally Easy		Neither Easy nor Difficult		Generally Difficult		Very Difficult		No Basis To Judge		Total Response	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Learning to use the basic features of the system	2	12.50	10	62.50	3	18.75	0	0.00	0	0.00	1	6.25	16	100.00
In general, using the system	1	6.25	10	62.50	4	25.00	0	0.00	0	0.00	1	6.25	16	100.00
Conducting searches	1	6.25	9	56.25	4	25.00	1	6.25	0	0.00	1	6.25	16	100.00
Reading the screens	0	0.00	12	75.00	1	6.25	2	12.50	0	0.00	1	6.25	16	100.00
Following what needs to be done from screen layout/ display	1	6.25	10	62.50	4	25.00	0	0.00	0	0.00	1	6.25	16	100.00
Moving from search information to documents	1	6.25	10	62.50	2	12.50	2	12.50	0	0.00	1	6.25	16	100.00
Using the search operators	0	0.00	12	75.00	2	12.50	1	6.25	0	0.00	1	6.25	16	100.00
Printing out information	1	6.25	5	31.25	4	25.00	1	6.25	1	6.25	4	25.00	16	100.00
Saving information to disk (downloading)	1	6.25	6	37.50	1	6.25	3	18.75	1	6.25	4	25.00	16	100.00
Logging on to the system	1	6.25	10	62.50	4	25.00	0	0.00	0	0.00	1	6.25	16	100.00

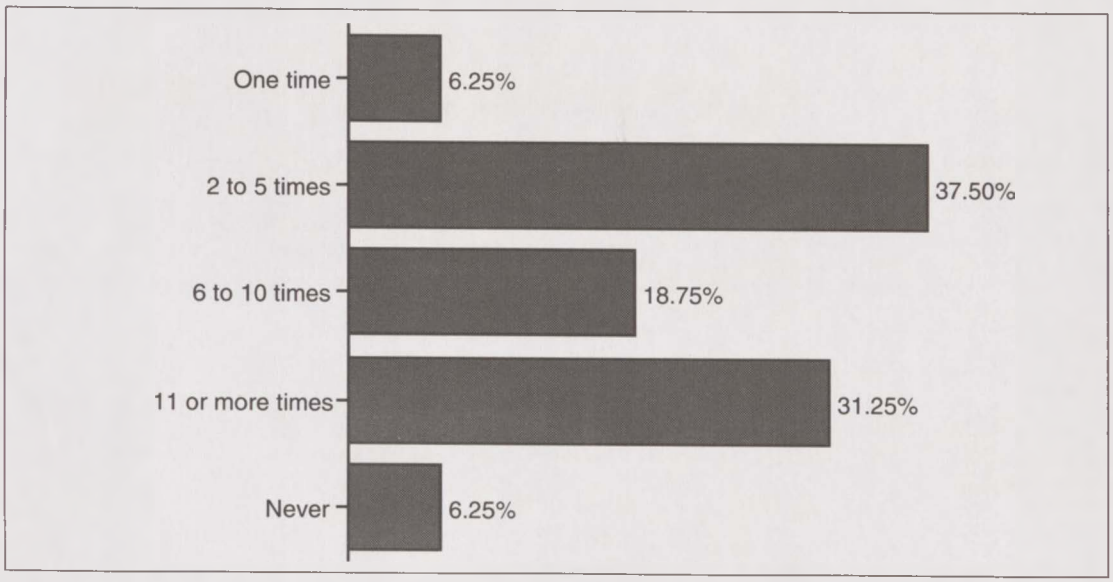
Eight of the 10 activities were rated as "Generally easy," the second rating on the scale, by the majority of the respondents. The percentages indicating how many of the respondents chose this rating for these eight activities ranged from 75% to 56.25%. The other two activities, "Printing out

information" and "Saving information to disk (downloading)" also showed more respondents who answered "Generally easy" than those who chose other answers on the scale. The lead was small in these two cases, however, and, for both these activities, four libraries marked "No basis to judge." Eight (a different set of eight) of the 10 activities had at least one respondent marking "Very easy," and only 2 of the 10 had anyone marking "Very difficult."

Library Use of the Energy Science and Technology Database

Question A.2.5 asked the libraries to indicate approximately how many times they had used the Energy Science and Technology Database. Note that this is not the same as the question asked at the beginning of this survey concerning how many times the libraries had used ITIS. Libraries could connect to ITIS and perform other activities rather than entering and using the database. They could use the electronic mail feature, download shared cataloging records, or use the ITIS Gateway. Accordingly, the responses, shown in Figure 14, indicated for this question differ from those given for Question A.1.1. One library indicated that at this mid-project point it had "Never" used the database. This respondent was directed to proceed to Part B of the survey, leaving the other 15 libraries to answer the remaining questions in Part A.

Figure 14: Approximately how many times have you used the Energy Science and Technology Database?

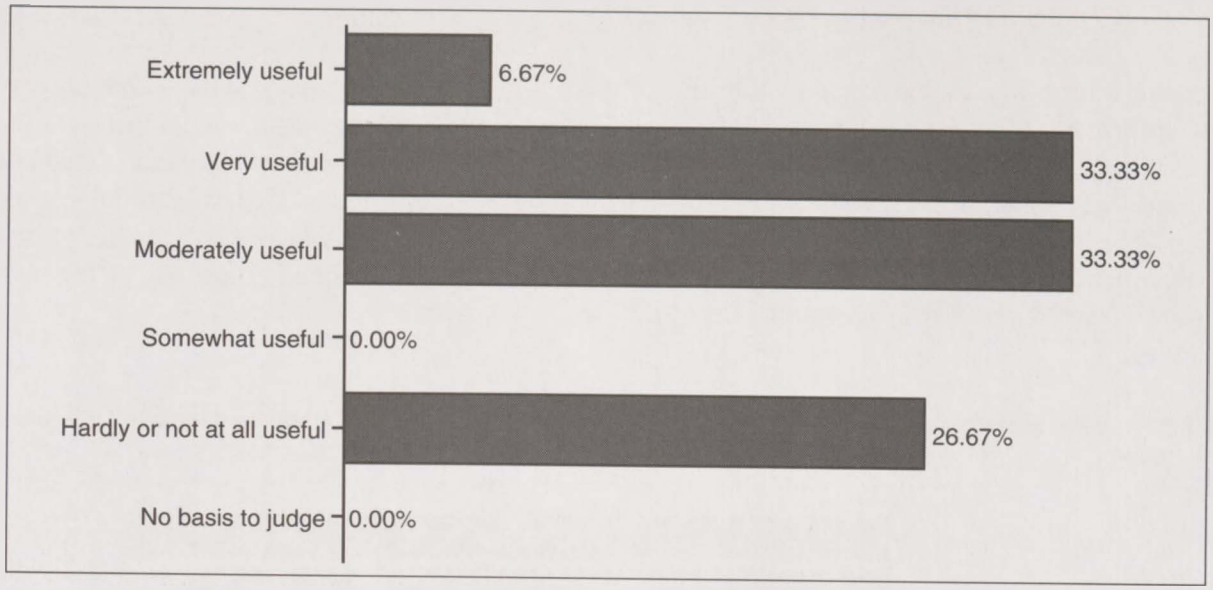


Source: Appendix E, Question A.2.5

Question A.2.6 asked, "To date, how useful has the database been for your purposes?" Only one respondent chose "Extremely useful," but 33.33% rated it as "Very useful." Of the remaining nine, five (33.33%) answered "Moderately useful," and four (26.67%) chose "Hardly or not at all useful" to answer the question (Figure 15).

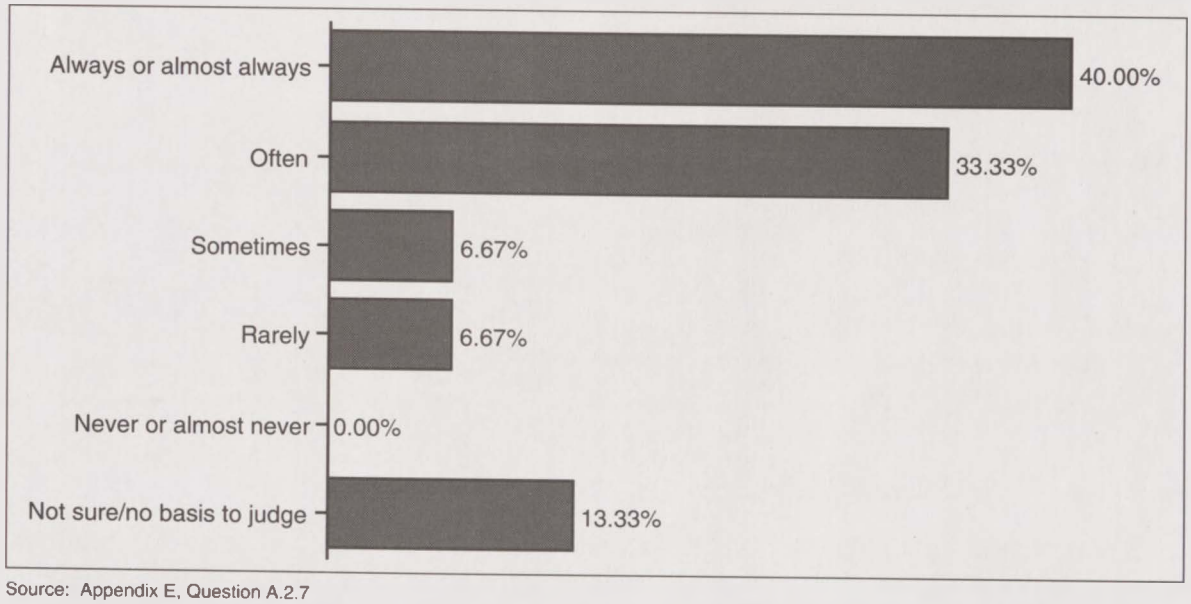
When asked in Question A.2.7, "When you search the database, about how often are you able to retrieve useful information for yourself or patrons?," 11 of the 15 libraries eligible to respond chose "Always or almost always" or "Often" for their reply (Figure 16).

Figure 15: To date, how useful has the database been for your purposes?



Source: Appendix E, Question A.2.6

Figure 16: When you search the database, about how often are you able to retrieve useful information for yourself or patrons?



Source: Appendix E, Question A.2.7

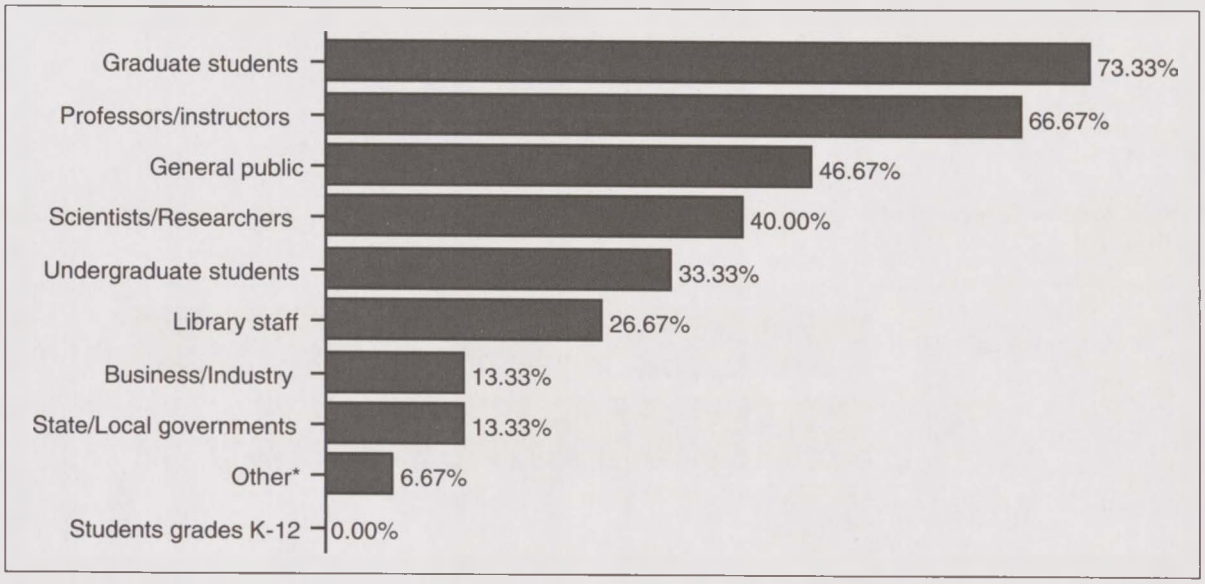
The libraries were asked in A.2.8, "Has the database provided you with information that was not available in your library before?" Nine (60%) answered "Yes." Of the remaining six, four said "No," and two chose "Don't know/No basis to judge" as their reply. Nine also said "Yes," the database provided "information that is more up-to-date than what was available in the library before." Three respondents said "No," and three answered "Don't know/No basis to judge" (Appendix E, Questions A.2.8 and A.2.9).

When asked if the database provided "information that is in a more useful format (e.g., computer-readable file) than what was available in the library before?," the number answering "Yes" changed.

Six respondents said "Yes," while seven (46.67%) said "No." Two libraries marked "Don't know/ No basis to judge" (Appendix E, Question A.2.10).

The final question in Part A asked the libraries, "What types of patrons have you been able to serve with information from the database?" Ten choices were listed, with the respondents instructed to check all that applied. As Figure 17 shows, 73.33% (11) of the respondents checked "Graduate students," and 66.67% (10) selected "Professors/Instructors." The choice "General public" earned one more check mark than did "Scientists/Researchers." The library that marked "Other" commented that database searches had so far been done for practice rather than to meet patron requests (Figure 17 and Appendix F, Question A.2.11).

Figure 17: What types of patrons have you been able to serve with information from the database? (Check all that apply.)



Source: Appendixes E and F, Question A.2.11

*Other response: No patron searches per se. Just performed practice searches.

Based on responses from 15 libraries.

Library Use of DOE Shared Cataloging

This section presents the responses to questions in Part B, 1 through 3. The first question was designed to gather information about the online delivery, through downloading, of shared cataloging records. The shared cataloging module on ITIS allowed users to see the filenames of the shared cataloging records in their indexes and choose one file or several at a time to download via Kermit. The index also showed a size and an estimated transmission time for each file.

Six statements related to the downloading capabilities of shared cataloging were provided in Question B.1. Libraries were asked to respond to each statement using a five-point scale ranging from "Strongly Agree" to "Strongly Disagree." The middle value was "Not Sure/Don't Know." Responses collected for this choice were not considered as either agreement or disagreement in the discussion below. Fifteen libraries responded to this question.

Respondents agreed, 11 (73.33%) to 2, that "Access via ITIS is straightforward and easily accomplished." Eleven also agreed with the statement, "Download menu is easily understood." Agreement dropped to an 8 to 4 ratio for the statement "Download procedure is easy." The number of libraries disagreeing with any statement was greatest for the statement, "Time required to perform download is satisfactory." Six libraries marked "Strongly Disagree," and two more marked "Somewhat Disagree." Only one respondent strongly agreed that the downloading time was satisfactory. The responses for statements about help messages and user instructions spread across the scale with the exception that no library strongly disagreed with these two statements (Table 26).

Table 26: Technical Evaluation Survey

Based on your experience, please rate the downloading capabilities of shared cataloging. (Question B.1)

	Strongly Agree		Somewhat Agree		Not Sure/ Don't Know		Somewhat Disagree		Strongly Disagree		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Access via ITIS is straightforward and easily accomplished	5	33.33	6	40.00	2	13.33	2	13.33	0	0.00	15	100.00
Download procedure is easy	3	20.00	5	33.33	3	20.00	3	20.00	1	6.67	15	100.00
Download menu is easily understood	4	26.67	7	46.67	3	20.00	1	6.67	0	0.00	15	100.00
Help messages provide needed answers	2	13.33	3	20.00	7	46.67	3	20.00	0	0.00	15	100.00
Time required to perform download is satisfactory	1	6.67	3	20.00	3	20.00	2	13.33	6	40.00	15	100.00
User instructions for downloading are adequate	5	33.33	5	33.33	3	20.00	2	13.33	0	0.00	15	100.00

A second part to this question allowed the libraries to provide additional explanations of or comments on their responses. Ten of the 15 libraries wrote in comments. The full text of their comments is found in Appendix F under Question B.1. Four mentioned their dissatisfaction with the time required for downloading, while two noted telecommunications problems that interrupted their downloading process. One library noted they had had no problems downloading but were unable to subsequently upload the file into their online catalog because it was not binary.

Though most of these comments appeared to be related to the disagreement responses made in Table 26 and were negative in nature, one respondent wrote, "Downloading these records has not been difficult; uploading is now equally easy for us to perform. I view the uploading of these records as being extremely valuable, and our patrons agree. They are using DOE materials as never before—even for general subject requests" (Appendix F, Question B.1).

Question B.2 focused more on the product being delivered, the shared cataloging records themselves, rather than on the delivery mechanism. The question read, "Based on your experience, please rate your satisfaction with the cataloging records. Five statements were made, to which libraries were to mark one answer to each on a five-point scale ranging from "Strongly Agree" to "Strongly Disagree." As in the previous question, the middle value was "Not Sure/Don't Know."

For each of the statements, the largest number of respondents chose the answer "Not Sure/Don't Know." This may be because, at the mid-project point, many of the libraries had not yet succeeded in uploading the electronic file of cataloging records into their individual catalogs where the records could be fully evaluated.

Of those who did mark the non-neutral choices on the scale, respondents disagreed four to two with the statement, "OSTI elements occur in correct MARC fields." Six respondents split evenly when agreeing or disagreeing with the statement, "Selected data elements are appropriate to our cataloging needs." Of the three respondents who provided an opinion on the statement, "Cataloging records match microfiche," two agreed, while one marked "Somewhat Disagree." In regard to the user support information, four agreed that it was adequate; three disagreed (Table 27).

Libraries again were invited to provide comments on or explanations of their responses to the statements in B.2, and, again, 10 responded. Eight of their 10 comments focused on dissatisfaction with the format of the MARC-like record and/or difficulties associated with uploading the file to their online catalogs and merging it with existing cataloging. The full text of these detailed comments is provided in Appendix F under Question B.2.

The final question in Part B asked the libraries to rate their overall satisfaction with shared cataloging. Again, many respondents replied to each of the five statements by choosing "Not Sure/Don't Know." Of those who did register an opinion, five disagreed while only three agreed that "The overall quality of this product is satisfactory." The strongest disagreement was registered for "The method of obtaining the record is acceptable." Six libraries disagreed as opposed to three who agreed.

Table 27: Technical Evaluation Survey

Based on your experience, please rate your satisfaction with the cataloging records. (Question B.2)

	Strongly Agree		Somewhat Agree		Not Sure/ Don't Know		Somewhat Disagree		Strongly Disagree		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
OSTI elements occur in correct MARC fields	0	00.00	2	13.33	9	60.00	2	13.33	2	13.33	15	100.00
Selected data elements are appropriate to our cataloging needs	2	13.33	1	6.67	9	60.00	1	6.67	2	13.33	15	100.00
Cataloging records match microfiche	1	6.67	1	6.67	12	80.00	1	6.67	0	0.00	15	100.00
Timing of document delivery with availability of cataloging records is safisfactory	2	14.29	2	14.29	10	71.43	0	0.00	0	0.00	14	100.00
Accompanying user support information is adequate	1	6.67	3	20.00	8	53.33	1	6.67	2	13.33	15	100.00

When given the statement, "The quality of the cataloging records is acceptable as it presently stands," five agreed, and four disagreed. An even split of opinion was registered for the statement "This product meets our microfiche cataloging needs," while nine libraries marked "Not Sure/Don't Know" to that. In responding to the statement, "Our organization would be interested in subscribing to this product if it was made available," five libraries indicated agreement, five disagreed, and five were "Not Sure/Don't Know" (Table 28).

For the third time in this section on shared cataloging, the libraries provided explanations or comments. Five of the nine commenting libraries indicated they would prefer to receive shared cataloging records on magnetic tape, and one registered a preference for a CD-ROM of this product. Inability to easily and/or quickly upload these files and merge them with existing cataloging was noted again.

The libraries that commented on Questions B.1 through B.3 took the time and trouble to make lengthy explanations. Their comments provide excellent information, and all three sets of these comments on shared cataloging should be read in full in Appendix F.

Table 28: Technical Evaluation Survey

Based on your experience, please rate your overall satisfaction with shared cataloging. (Question B:3)

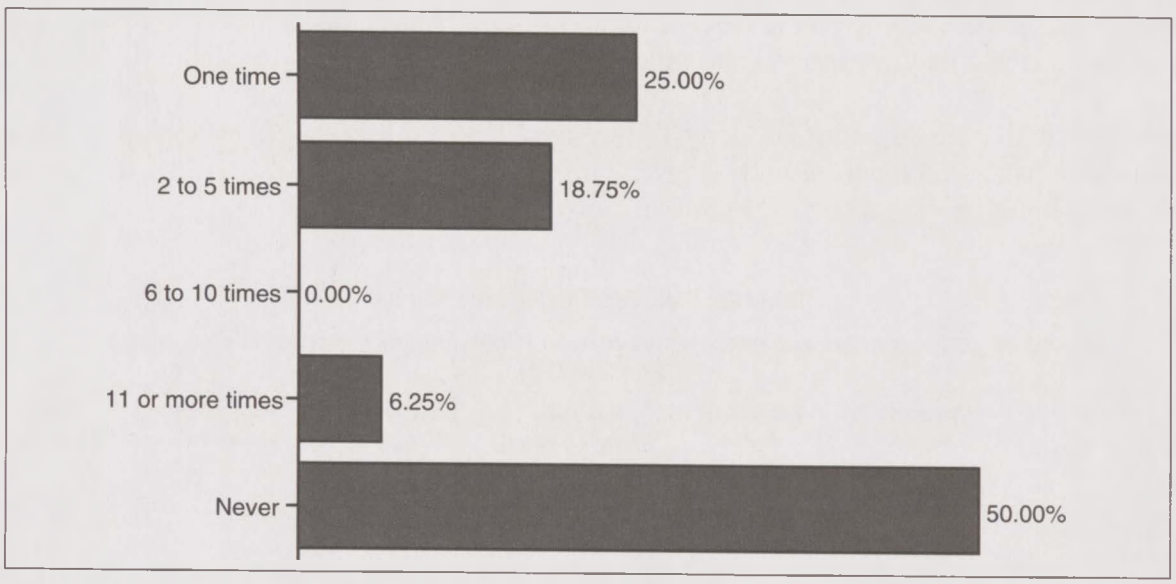
	Strongly Agree		Somewhat Agree		Not Sure/ Don't Know		Somewhat Disagree		Strongly Disagree		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
The overall quality of this product is satisfactory	2	13.33	1	6.67	7	46.67	1	6.67	4	26.67	15	100.00
The quality of the cataloging records is acceptable as it presently exists	3	20.00	2	13.33	6	40.00	1	6.67	3	20.00	15	100.00
This product meets our microfiche cataloging needs	3	20.00	0	0.00	9	60.00	1	6.67	2	13.33	15	100.00
Our organization would be interested in subscribing to this product if it was made available	2	13.33	3	20.00	5	33.33	1	6.67	4	26.67	15	100.00
The method of obtaining the record is acceptable	2	13.33	1	6.67	6	40.00	1	6.67	5	33.33	15	100.00

Library Use of the ITIS Communication Gateway

This section covers questions from Part C, which asked the libraries to evaluate the ITIS Gateway as "a viable service to depository libraries." After Question C.2, where 8 of the 16 libraries indicated that they had "Never" used the ITIS Gateway at this mid-point of the project, only the remaining 8 were eligible to continue this part of the survey. It should be noted that, of these 8 libraries, 4 indicated

that they only used the Gateway one time (Figure 18). Consequently, few libraries had the requisite experience to meaningfully answer items in this section. As might be expected, the majority of eligible libraries answering items either did not respond, chose the "Not sure" or "Don't know" categories, or otherwise indicated that they had not used a particular Gateway function. Given this minimal response rate, only selected items are reported here. Specific responses to all 28 questions in Part C are contained in the Appendixes E and F.

Figure 18: Approximately how many times have you used the ITIS Gateway?



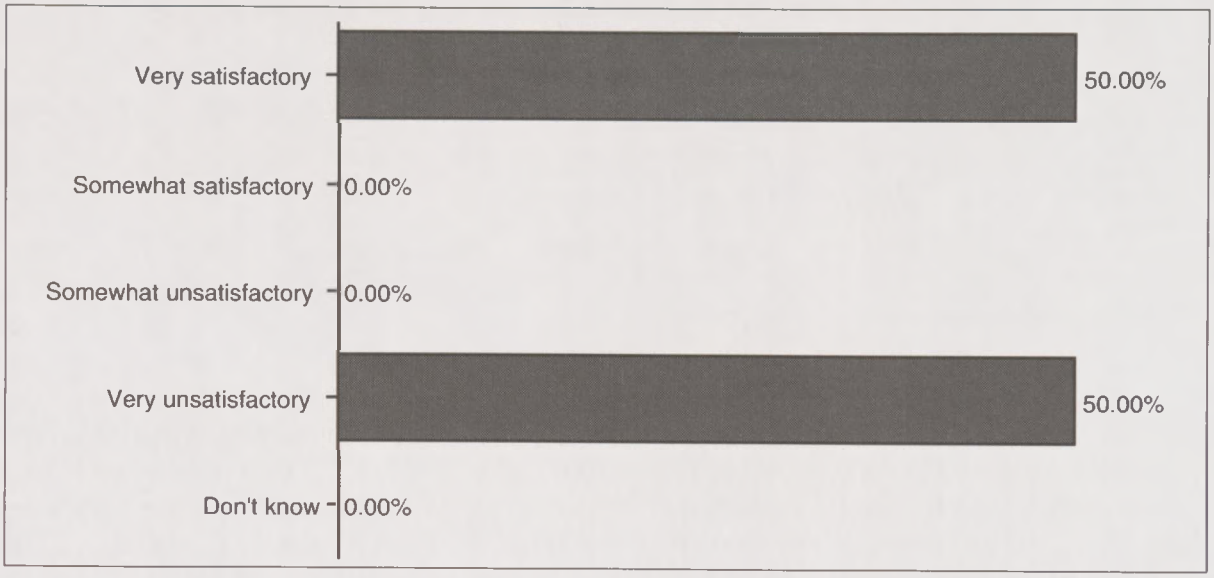
Source: Appendix E, Question C.2

The ITIS Gateway allowed users to merge the results of searches in the Energy, Science and Technology Database on ITIS with older records on DIALOG. The search results were combined in a personal database that could be viewed, sorted, or printed as desired. A series of questions explored the use of ITIS or other systems to merge files of search results from different sources. For example, question C.3 asked, "Have you used the ITIS Gateway to merge search results files from ITIS and DIALOG?" Four of the eight libraries responding to this section replied "Yes" and were eligible to answer Questions C.4 and C.5 (Appendix E, Question C.3). Two libraries wrote in explanations or comments; see Appendix F under Question C.3.

Question C.4 asked the four eligible libraries to rate the merger activity on a five-point scale ranging from "Very satisfactory" to "Very unsatisfactory" and including "Don't know." The four respondents split evenly here, with two marking "Very satisfactory," and two marking "Very unsatisfactory" (Figure 19).

On a question addressing the personal database services of the ITIS Gateway, respondents were asked, "Did the following personal database services work as described?" The six services were then listed, with the eight libraries instructed to choose one answer for each from the four yes/no type choices. Many of the responses were collected under "Didn't Use" or "Not Sure." Table 29 shows the responses for each service.

Figure 19: Overall, how satisfactory was the merger activity?



Source: Appendix E, Question C.4

Table 29: Technical Evaluation Survey

Did the following personal database services work as described? (Question C.22)

	Yes		Not sure		No		Didn't Use		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Select	3	42.86	1	14.29	0	0.00	3	42.86	7	100.00
Edit	1	14.29	2	28.57	1	14.29	3	42.86	7	100.00
Report	4	57.14	1	14.29	0	0.00	2	28.57	7	100.00
Download	1	14.29	2	28.57	2	28.57	2	28.57	7	100.00
Delete	1	14.29	2	28.57	0	0.00	4	57.14	7	100.00
Combine	4	57.14	1	14.29	1	14.29	1	14.29	7	100.00

Based on responses from seven libraries.

When asked to rate the Gateway in terms of how easy or difficult it was to use, three of the eight respondents marked "Don't know/No basis to respond." Three of the remaining five rated it as difficult to some degree (Table 30).

Asked to rate the Gateway user screens for screen layout and design, menu design, and understandability, the respondents generally graded them as "Good" to "Fair," with three respondents either not answering or answering "Not sure" for each of the three items being evaluated. One of the libraries rated the menu design as "Excellent," and none of the libraries chose "Poor" for any of the three items (Table 31).

Table 30: Technical Evaluation Survey

In general, how easy or difficult to use did you find the ITIS Gateway? (Question C.24)

	Freq.	Percent
Don't know/no basis to respond	3	37.50
Somewhat easy	2	25.00
Somewhat difficult	2	25.00
Very difficult	1	12.50
Very easy	0	0.00
Total	8	100.00

Table 31: Technical Evaluation Survey

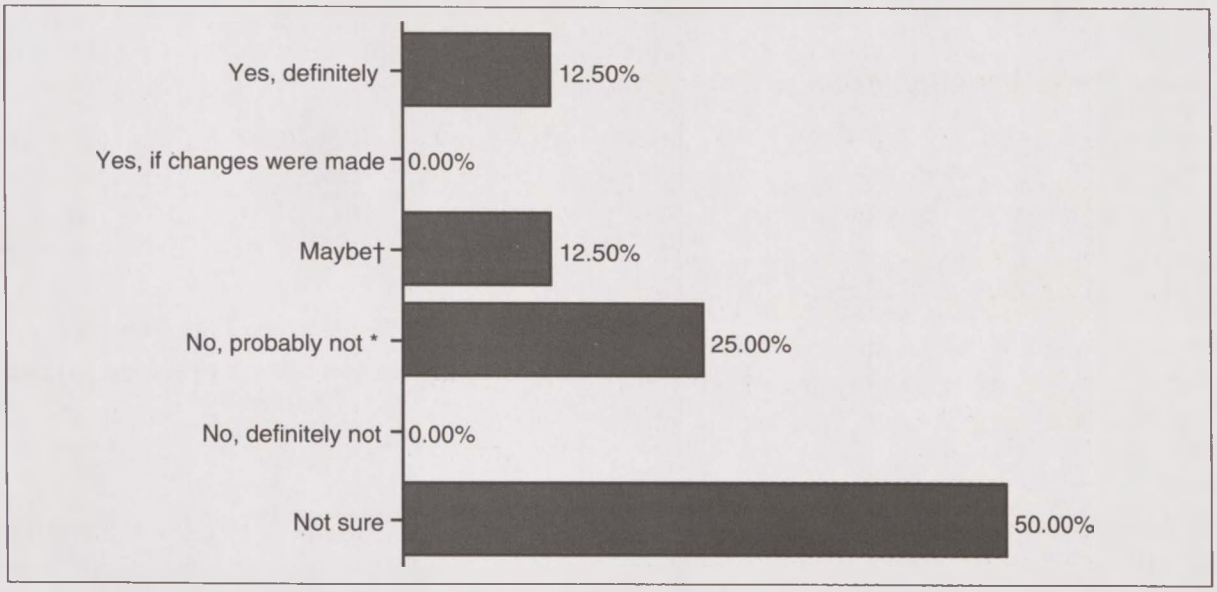
How would you rate the Gateway user screens on each of the following items? (Question C.25)

	Excellent		Good		Fair		Poor		Not Sure		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Screen layout and design	0	0.00	4	57.14	1	14.29	0	0.00	2	28.57	7	100.00
Menu design	1	14.29	3	42.86	1	14.29	0	0.00	2	28.57	7	100.00
Understandability	0	0.00	2	28.57	3	42.86	0	0.00	2	28.57	7	100.00

Based on responses from seven libraries.

Question C.26 asked, "If the ITIS Communication Gateway in its present form was made available as part of the regular ITIS service, would you or your colleagues use it?" One respondent marked "Yes, definitely," and four of the eight were "Not sure." Of the remaining three, one respondent marked "Maybe," and two said "No, probably not" (Figure 20 and Appendix E, Question C.26). Comments received for this question included "Would like better documentation" and "Use here does not warrant it." One respondent noted that "The up-to-dateness is not of sufficient importance to overcome inconvenience of two searches and new search language." The full text of these comments is found in Appendix F, Question C.26.

Figure 20: If the ITIS Communication Gateway in its present form was made available as part of the regular ITIS service, would you or your colleagues use it?



Source: Appendixes E and F, Question C.26

*Explanation of "No, probably not" responses: two responses received.
- Use here does not warrant it.
- The up-to-dateness is not of sufficient importance to overcome inconvenience of two searches and new search language. Will probably use DIALOG or STN for energy searches.

†Explanation of "Maybe" response: one response received.
- Would like better documentation.

When asked if "having access through the ITIS Gateway to other systems or databases (in addition to DIALOG files 103 and 104) would make you more likely to use it," four of the eight respondents marked "Not sure," and two said "No." The two who said "Yes" specified "Any DIALOG or STN file" and "OCLC." These comments are recorded in Appendix F, Question C.27.

The final question of this survey asked the libraries to provide other comments or suggestions concerning the Gateway. Five of the eight did so, and the full text of their comments is found in Appendix F, Question C.28. One respondent explained, "Have not had enough time or training to learn how to use it [ITIS Gateway] with proficiency," and two explained why they had not had time to participate at the anticipated level. One of the two remaining comments explained the technical difficulties this respondent had experienced with the Gateway. The other noted that "Having access to the most current reports through ITIS is wonderful," and suggested, "Should DOE go through with plans to produce a CD-ROM version of the Energy Database, it would be useful to have a way to merge records from the CD-ROM and ITIS."

Final Project Evaluation Survey Results (End of Project Findings)

The third and final survey of Component I consisted of 22 questions. Questions were aimed at discovering changes that may have occurred in the libraries as a result of Component I, overall response to the various services and products involved, and overall response to this part of the Project as a whole. All 17 of the participating Depository Libraries responded to this survey.

Discussion of this survey is organized into four sections. The first paragraph of each section identifies questions from the survey instrument to which the section applies. A copy of the questionnaire, with results, is found in Appendix G. In addition, the individual responses to open-ended questions, explanations of responses, and libraries' comments are found in Appendix H.

Library Use of DOE Information and Services

This section discusses Questions B.1 through B.7 on the survey instrument. It begins by asking the libraries, "Based on your experience with the Pilot Project, how do you think the frequency with which your library patrons access your collection of DOE microfiche will be affected?" Ten libraries (58.82%) thought frequency would increase to some degree; but 6 of the remaining 17 anticipated no change, one marked "Don't know" (Figure 21).

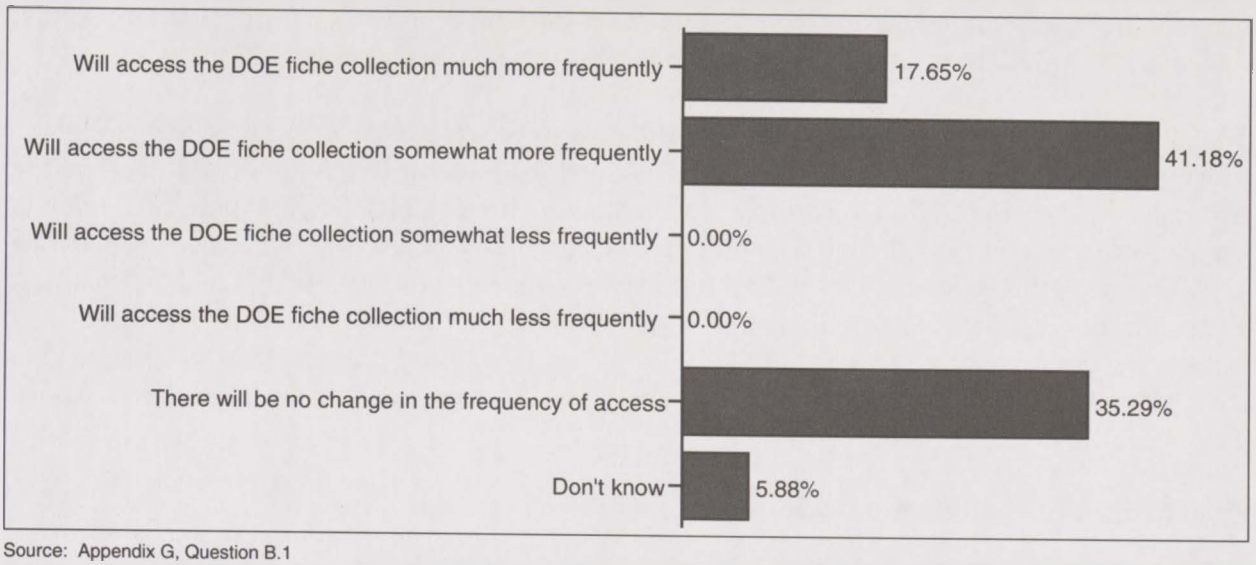
Libraries were asked if they experienced any increase or decrease in the number of STI requests as a result of the Pilot Project. Only 35.29% (6) said they had experienced an increase to some degree, while 58.82% (10) marked "Neither an increase nor a decrease" (Figure 22).

Fifteen libraries answered "Yes" when asked if the patrons they were able to serve with information from the DOE database were typical of their usual patrons. Seven libraries explained their "Yes" responses with comments such as the following:

> Science is the subject area of our department.

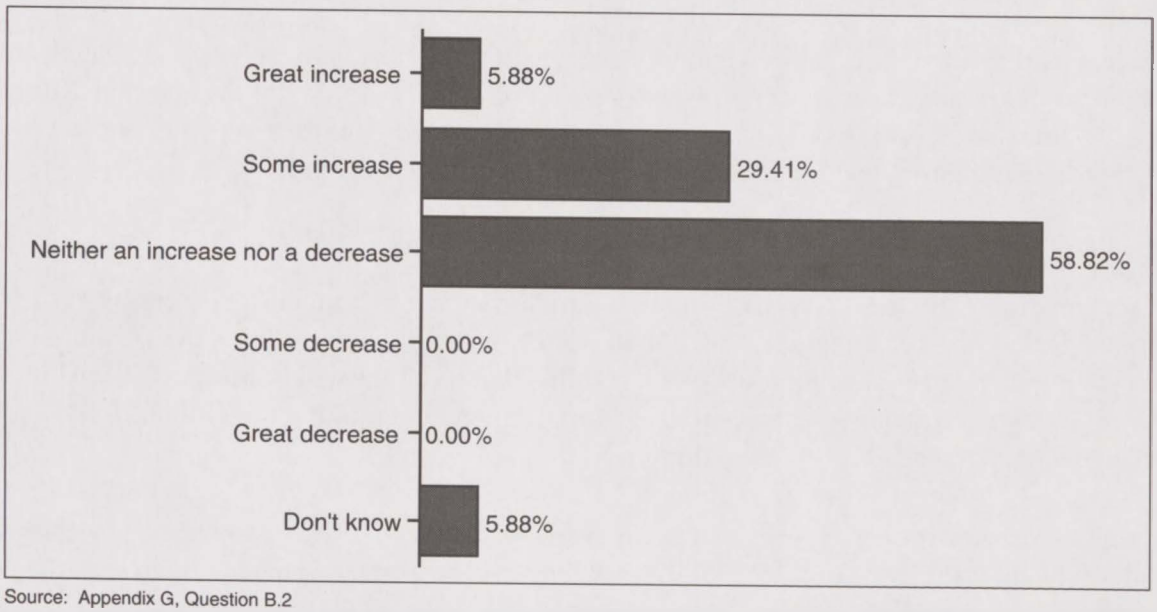
> Our typical users of energy information are faculty researchers or graduate students. Those patrons who used ITIS were from the above group, thus were used to the technical nature of the information.

Figure 21: Based on your experience with the Pilot Project, how do you think the frequency with which your library patrons access your collection of DOE microfiche will be affected?



Source: Appendix G, Question B.1

Figure 22: As a result of the Pilot Project, did you experience any increase or decrease in the number of requests you received for scientific and technical information (STI)?



Source: Appendix G, Question B.2

One respondent qualified the "Yes" answer with "But *very* few." Two libraries answered "No" to this question (Appendix G, Question B.3; Appendix H under Question B.3/B.4 for full text of comments).

Question B.5 asked the libraries to estimate what percentage of their usual, overall clientele they felt would have an ongoing need for DOE information. Fifteen (88.24%) chose the range "1 to 25%" as their estimate. Only one library chose a higher range, "26 to 50%," and one library marked "Not sure." One respondent, in explaining the choice of "1 to 25%" wrote, "Note that not all our patrons are interested in STI" (Appendix H, Question B.5).

Twelve respondents (70.58%) indicated that, at least to "Some extent," regular access to ITIS and the Energy Science and Technology Database had been valuable to their library. One respondent, explaining a response of "Great extent" on the scale, wrote the comment "to Physics branch library" (Appendix H, Question B.6). The other 29.41% marked "Little or no extent" (Table 32).

Fourteen respondents (82.35%) said that, at least to "Some extent," receiving DOE shared cataloging files would be valuable to their library, and half of these indicated the degree as "Very great extent." One respondent, marking "Very great extent," placed three stars beside the answer. Another commented, "If we had the resources to load (or access for free), value would be *high.*" A third respondent explained the choice of "Moderate extent" with, "If files could be successfully tape loaded onto local automated system" (Table 32 and Appendix H, Question B.7).

Table 32: Final Project Evaluation Survey

	To what extent, if any, has regular access to ITIS and the Energy Science and Technology Database been valuable to your library? (Question B.6)		To what extent, if any, would receiving DOE shared cataloging files be valuable to your library? (Question B.7)	
Rating	Freq.	Percent	Freq.	Percent
Very great extent	0	0.00	7	41.18
Great extent	2	11.76	2	11.76
Moderate extent	2	11.76	4	23.53
Some extent	8	47.06	1	5.88
Little or no extent	5	29.41	2	11.76
Don't know/No basis to respond	0	0.00	1	5.88
Total	17	100.00	17	100.00

Library Use of the Energy Science and Technology Database

This section includes the responses to Questions C.8 through C.10. The first three questions are similar to questions asked at the mid-project point. The responses to these questions concerning how many times libraries used the Energy Science and Technology Database, how useful it was to their purposes, and how often they were able to retrieve the information they or their patrons needed are presented in Tables 33, 34, and 35.

Table 33: Final Project Evaluation Survey

Approximately how many times did you use the Energy Science and Technology Database during the Project? (Question C.8)

	Freq.	Percent
One time	0	0.00
2 to 5 times	5	29.41
6 to 10 times	5	29.41
11 or more times	5	29.41
Never	2	11.76
Total	17	100.00

Table 34: Final Project Evaluation Survey

Overall, how useful was the Database for your purposes? (Question C.9)

	Freq.	Percent
Extremely useful	3	20.00
Very useful	4	26.67
Moderately useful	3	20.00
Somewhat useful	2	13.33
Hardly or not at all useful	3	20.00
No basis to judge	0	0.00
Total	15	100.00

Table 35: Final Project Evaluation Survey

When you searched the Database, about how often were you able to retrieve the information you needed for yourself or patrons? (Question C.10)

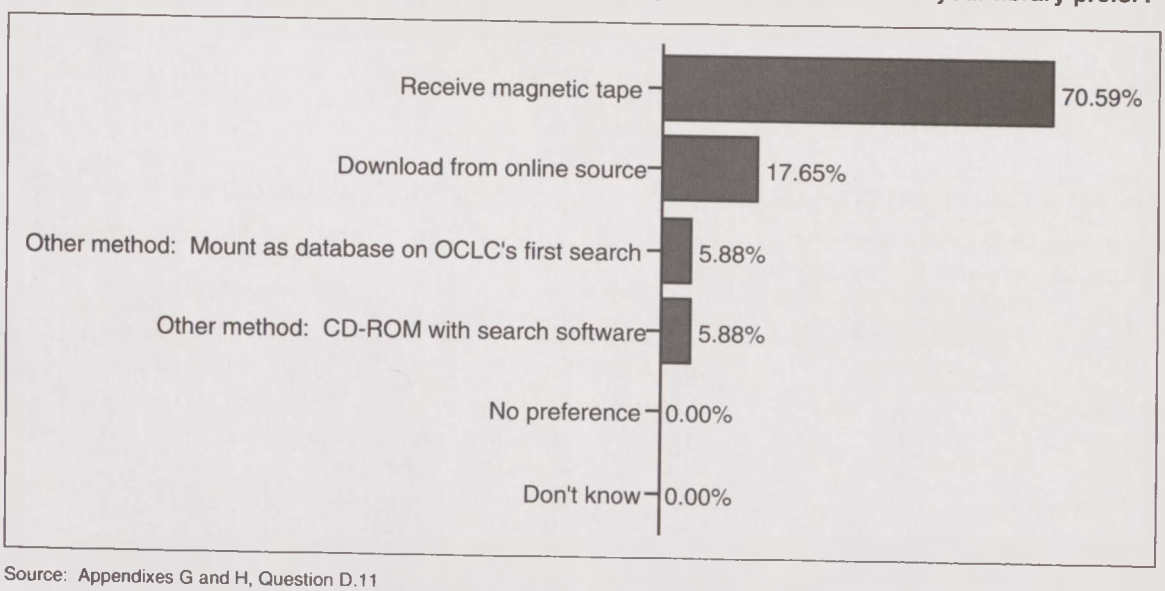
	Freq.	Percent
Always or almost always	6	40.00
Often	5	33.33
Sometimes	2	13.33
Rarely	2	13.33
Never or almost never	0	0.00
Not sure/no basis to respond	0	0.00
Total	15	100.00

Library Use of DOE Shared Cataloging

This section covers Questions D.11 and D.12 of the survey instrument. Libraries were asked which method of receiving shared cataloging records they preferred. Twelve of the 17 libraries checked "Receive magnetic tape." Three indicated they would prefer to "Download from online source." Two who marked "Other method" specified, "CD-ROM with search software" and "Mount as database with OCLC's first search" (Figure 23 and Appendix H, Question D.11).

Question D.12 instructed the libraries to rate their satisfaction with DOE shared cataloging based on their overall experience. Four statements were then given to which libraries could agree ("Strongly" or "Somewhat") or disagree ("Strongly" or "Somewhat"). They could also choose a neutral choice of "Not sure/Don't know."

Figure 23: Which method of receiving shared cataloging records does or would your library prefer?



Source: Appendixes G and H, Question D.11

For four of the five statements, more respondents disagreed than agreed. Eight to four, they disagreed that the overall quality of the product was satisfactory. Nine to three, they disagreed that the quality of the cataloging records was acceptable as it presently existed. Six to three, they disagreed that the method of obtaining the records was acceptable. Respondents did agree, six to four, with "This product meets our microfiche cataloging needs," but when responding to "Our organization would be interested in subscribing to this product if it were made available," five disagreed, while four agreed. For every statement, at least two libraries did not answer and others, sometimes five or six others, marked "Not sure/Don't know" (Table 36).

Table 36: Final Project Evaluation Survey

Based on your overall experience, please rate your satisfaction with shared DOE cataloging. (Question D.12)

	Strongly Agree		Somewhat Agree		Not Sure/Don't Know		Somewhat Disagree		Strongly Disagree		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
The overall quality of this product is satisfactory	1	6.67	3	20.00	3	20.00	5	33.33	3	20.00	15	100.00
The quality of the cataloging records is acceptable as it presently exists	2	13.33	1	6.67	3	20.00	3	20.00	6	40.00	15	100.00
This product meets our microfiche cataloging needs	4	26.67	2	13.33	5	33.33	1	6.67	3	20.00	15	100.00
Our organization would be interested in subscribing to this product if it were made available	4	26.67	0	0.00	6	40.00	3	20.00	2	13.33	15	100.00
The method of obtaining the record is acceptable	2	14.29	1	7.14	5	35.71	3	21.43	3	21.43	14	100.00

Ten libraries (60%) provided explanations/comments of their answers.

Ten respondents provided comments on shared cataloging. Lack of personnel or funding to handle translation and loading of the electronic files into their library's catalog/catalog software was mentioned four times. The fact that the records were MARC-like rather than true MARC format was mentioned three times, and file format problems were mentioned three times.

One library explained it had spent over 100 hours to get one shared cataloging file uploaded into their online catalog and went on to list the three major problems they encountered. This library said it would like to see the DOE cataloging records made available through OCLC. Read the full text of these comments in Appendix H under Question D.12.

Library Use of the ITIS Communication Gateway

This section covers the responses to Questions E.13 through E.20 on the survey instrument. Because nine libraries indicated they had never used the Gateway at any time during the Pilot Project, only eight were eligible to answer this set of questions. Of these eight, two libraries said they had used the Gateway "One time"; four had used it "2 to 5 times"; and only two libraries had used it "11 or more times" (Appendix G, Question E.13).

Table 37 shows the capabilities that were used, and Table 38 shows how the eight libraries rated five features of the Gateway. Two choices on the scale were "Not sure" and "Didn't use." Excluding the respondents who marked these choices, three of the Gateway features were rated "Good" by the

majority. Only "File merging" failed to receive any "Good" check marks. It received one check mark for "Fair" and one for "Poor," while all other respondents marked "Not sure" or "Didn't use" for this feature.

Table 37: Final Project Evaluation Survey

Which of the following Gateway capabilities did you use? (Check all that apply.) (Question E.14)

	Freq.	Percent
Creating bibliographies or notification lists for distribution	5	62.50
Merging search results files from ITIS and DIALOG	2	25.00
Viewing or printing personal databases created in the Gateway	1	12.50
None of the above	0	0.00
Don't know	0	0.00

Based on responses from eight libraries.

Note: Only the eight libraries which indicate that they had used the Gateway one or more times were eligible to answer this question.

Table 38: Final Project Evaluation Survey

Based on your overall experience with the Gateway, please rate your satisfaction with the following items. (Question E.15)

	Excellent		Good		Fair		Poor		Not Sure		Didn't Use		Total Responses	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
File merging	0	0.00	0	0.00	1	12.50	1	12.50	2	25.00	4	50.00	8	100.00
User screens	0	0.00	5	62.50	2	25.00	0	0.00	1	12.50	0	0.00	8	100.00
Report formats	0	0.00	2	25.00	2	25.00	0	0.00	1	12.50	3	37.50	8	100.00
Creating bibliographies	0	0.00	5	62.50	0	0.00	1	12.50	2	25.00	0	0.00	8	100.00
Access to DIALOG	0	0.00	3	37.50	1	12.50	0	0.00	1	12.50	3	37.50	8	100.00
Other	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

One library found the ITIS Gateway overall to be "Very easy" to use, and three marked that it was "Somewhat easy." Another three marked "Somewhat difficult," and the eighth respondent marked "Don't know/No basis to respond" (Table 39).

The Gateway was designed to allow database searching on both ITIS and DIALOG so that the results files of current and retrospective energy information could be merged. Question E.17 asked, "Which retrieval software are you more comfortable using, ITIS or DIALOG?" Seven of the eight respondents indicated they were more comfortable using DIALOG's retrieval software. In explaining their answer of DIALOG, all but two of the seven referred in some way to the fact that they had more experience and, therefore, more familiarity with that retrieval software. The remaining library marked "Both equal" (Appendix G, Question E.17). The full text of respondents' comments is found in Appendix H under Question E.17.

Question E.18 asked, "Are the citations on DIALOG current enough for your needs?" Five of the eight libraries replied "Yes." One said "No," explaining that:

> Microfiche is received and available long before records appear in DIALOG. Faculty are often aware of current research and want access as quickly as possible.

Table 39: Final Project Evaluation Survey

Overall, how easy or difficult to use did you find the ITIS Gateway? (Question E.16)

	Freq.	Percent
Very easy	1	12.50
Somewhat easy	3	37.50
Somewhat difficult	3	37.50
Very difficult	0	0.00
Don't know/No basis to respond	1	12.50
Total	8	100.00

One library chose "Not always" as a response and explained, "but only because many users want information the same day the information was released." The remaining library checked "NA" (Appendix G, Question E.18 and Appendix H, Question E.18).

The survey also asked if the libraries had used the OneSearch capability on DIALOG to search other files at the same time they searched the Energy Science and Technology Database. As Table 40 shows, more libraries said "No" than "Yes."

The final question in the Gateway portion of the questionnaire was, "How important is it to you to be able to search multiple files using a single search strategy?" Seven libraries responded within the range of "Some importance" to "Great importance." Only one library answered "Little or no importance" (Table 41).

Table 40: Final Project Evaluation Survey

Have you used the OneSearch capability on DIALOG to search other files at the same time you search the Energy Science and Technology Database? (Question E.19)

	Freq.	Percent
Yes, frequently	0	0.00
Yes, occasionally	3	37.50
No	5	62.50
Not sure	0	0.00
Total	8	100.00

Table 41: Final Project Evaluation Survey

How important is it to you to be able to search multiple files using a single search strategy? (Question E.20)

	Freq.	Percent
Very great importance	0	0.00
Great importance	4	50.00
Moderate importance	2	25.00
Some importance	1	12.50
Little or no importance	1	12.50
Don't know/No basis to respond	0	0.00
Total	8	100.00

Project Costs Reported by Libraries

Question F.21 asked the libraries to provide their costs for Component I and indicate whether the costs they listed were actual or estimated. The table of this information is found in the section of this report titled "Online Usage Statistics and Component I Costs." See Appendix H, Question F.21, for additional comments.

Summary—Component I

Seventeen Depository Libraries were selected to participate in Component I of the Pilot Project. These were libraries that were receiving DOE microfiche, had online catalogs, and had indicated their interest in participating and their ability to commit the necessary staff and budget resources.

Component I gave the participating libraries expanded and enhanced access to DOE scientific and technical information. To accomplish this, user accounts for the libraries were established on the Integrated Technical Information System (ITIS), a system primarily serving DOE and major DOE contractors. Through ITIS, the libraries were able to search the most current window of the Energy Science and Technology Database, obtain shared cataloging records, and utilize the ITIS Gateway to merge current records from ITIS with older records from the retrospective database on DIALOG.

OSTI completed work on the shared cataloging product and on the ITIS Gateway to make them available for beta testing during the Pilot Project. Training on the system, including these test modules, was given for representatives from the libraries in January 1991. The six-month Component I time frame for ITIS access ran from February 1, 1991, through July 31, 1991. Only 16 of the libraries utilized their ITIS accounts; the 17th library worked with the shared cataloging records, which were also distributed on magnetic tape, but did not use ITIS.

The 16 libraries logged a total of 264.05 online hours on ITIS during Component I of the Pilot Project. For tracking and costing purposes, this overall system usage was subdivided into four categories or types of usage. Two of these, database usage and usage of the ITIS electronic mail and system utilities, were characterized as "billed" usage and charged at the rate of $16.00, which was about half the normal rate charged to the DOE audience. GPO subsidized the first two months of billed usage, and then the libraries themselves paid for their billed usage during the last four months. Libraries also paid $0.25 per record, regardless of format or length, for all records downloaded or printed from the database. The "non-billed" usage was that provided by DOE at no cost to GPO or Project participants. DOE subsidized usage of the shared cataloging module on ITIS, the shared cataloging records, the ITIS Gateway, and records printed or downloaded through the Gateway options.

The total dollar value of the 264.05 online hours logged on ITIS was $4,224.77. Of this total, GPO subsidized 56.59 online hours for $905.45; the libraries paid $777.60 for 48.60 online hours; and DOE subsidized 158.86 online hours for a value of $2,541.72.

Component I objectives are listed in full in the body of this report. To briefly summarize, they included discovering the extent of usage for DOE technical reports on microfiche, determining factors contributing to the use or non-use of that collection, determining the feasibility and desirability of providing electronic cataloging for the DOE microfiche in a format suitable for uploading into libraries' online catalogs, encouraging the use of the Energy Science and Technology Database as a "pointer" to the DOE fiche, exploring the feasibility of replacing paper indexes with online access, and testing the ITIS Gateway as a tool for merging DOE's energy information on DIALOG with the latest energy information on ITIS and as a tool for customizing the results into various report formats and sorts.

To gather information related to these objectives, three surveys were conducted during and immediately following Component I. The first survey instrument, entitled "Depository Library Use of DOE Microfiche," was designed to discover the normal practices of the libraries for handling the DOE microfiche, microfiche in general, and users' requests for scientific and technical information (STI). Because this survey was intended to establish baseline information, libraries were instructed to respond to the questions based on their operation prior to the beginning of the Pilot Project. Sixteen libraries responded to this survey.

The second survey instrument, entitled "Technical Evaluation Survey," was designed to evaluate the libraries' experiences *at the mid-project point* with ITIS, the Energy Science and Technology Database, shared cataloging, and the Gateway. Sixteen libraries also participated in this survey.

The third and final survey instrument, entitled "Final Project Evaluation," aimed at discovering changes that may have occurred in the libraries as a result of Component I, overall response to the various services and products involved, and overall response to this part of the Pilot Project as a whole. All 17 libraries involved in Component I responded to this survey.

In the baseline survey, the libraries' collections of DOE microfiche were characterized as "very accessible" by 75% of the 16 responding libraries. However, 13 libraries were not cataloging their DOE fiche collection prior to the Pilot Project, citing not enough staff, not enough time, expense, and not enough demand for this microfiche to justify the time/expense as common reasons. Of the three that were cataloging their DOE fiche, two were merging them with the cataloging for other collections.

Nine libraries (56.25%) reported that they received 16 or more STI requests from their patrons in a typical week. Two of these libraries estimated that they received 150 or more requests. The weekly frequencies indicating how often library staff and patrons accessed the DOE microfiche collection were, on the whole, however, lower than the numbers indicating the frequency with which STI requests were received. Only one library reported accessing the DOE fiche more than 15 times per week, whereas 14 libraries (87.50%) estimated they accessed those fiche 15 times or less per week.

The baseline survey listed 14 reference sources that could possibly be used to find information concerning the STI requests that are received. Respondents were asked to rate how often they searched these sources and then how often these sources led them or their patrons to the DOE microfiche. Thirteen libraries for *Energy Research Abstracts* and eleven for DOE Energy on DIALOG said these sources "Always/Almost always" or "Often" led them or their patrons to the DOE microfiche collection. However, when asked how often they searched these sources to answer STI requests, 9 said only "Sometimes" for *ERA* and only 5 said "Always" to "Often." For DOE Energy on DIALOG, 10 said they "Sometimes" searched it, but only 1 library said they "Often" searched it, and no one marked "Always/Almost always."

This survey also showed that more than half of the libraries were used to receiving catalog records for other, non-microfiche formats on magnetic tape, and half were used to obtaining catalog records by downloading from an online source.

The shared cataloging records were made available to the libraries during Component I both through the online delivery mechanism on ITIS and on magnetic tape. All through the project and at the end,

the libraries provided ratings and comments that reflected the problems they experienced with this product. The time required to download the file from ITIS was not acceptable to the majority of those who provided feedback at mid-project point. The amount of programming required to enable the electronic file to upload to the libraries' online catalogs exceeded the planned staff support and budget for several libraries and remained an item that received lengthy comment throughout Component I. Another problem was the attempt to merge the MARC-like records provided by OSTI with true MARC records already in the libraries' catalogs. As a result of these problems, libraries disagreed eight to four and nine to three with the statements, "Overall quality of this product is satisfactory" and "Quality of the cataloging records is acceptable as it presently exists."

Even so, the libraries continued to indicate their interest in being able to provide cataloging of some kind for their DOE microfiche. Ratings for "This product meets our microfiche cataloging needs" swung back toward agreement, and the libraries disagreed only five to four with "Our organization would be interested in subscribing to this product if it were made." Note that other respondents either did not answer or answered "Not sure/Don't know" when rating shared cataloging and were counted as neutral for the purposes of this discussion. However, 14 of the 17 respondents said that receiving DOE shared cataloging would be valuable to their libraries at least to some extent, with half of those choosing "Very great extent" as the degree. One respondent marking "Very great extent" placed three stars beside the answer. Another commented, "If we had the resources to load (or access for free), value would be *high*."

Comments received at the end of the project continued, as noted above, to describe the problems with shared cataloging, but also touched on the desire to provide cataloging for microfiche. One respondent wrote:

> Most of our patrons expect to find energy related material using our public access catalog. We have GPO cataloging and most assume that DOE material is included. Having the DOE cataloging in PAC would vastly increase the use of the Energy material and make it available to a large cross section of our patrons. For this reason, the Shared Cataloging is the most important part of the Pilot Project.

The ITIS Gateway attracted only 8 of the 16 libraries enough to get them to use it, and even that usage was very low. This fact alone says something about its perceived utility. The eight respondents indicated they were more comfortable with DIALOG than with ITIS, primarily because of their longer experience with and, therefore, familiarity with that system. Five of the eight said the citations on DIALOG were current enough for their needs.

One objective of Component I was to encourage the libraries to become more familiar with DOE's information in the Energy Science and Technology Database. Fifteen libraries estimated that "1 to 25%" of their usual, overall clientele had an ongoing need for DOE information. Access to ITIS and the database was rated valuable, at least to some extent, by 47.06%, and another 25.52% said "Moderate" or "Great extent." Ten rated its usefulness to their purposes with the top three values on the rating scale: "Extremely useful," "Very useful," or "Moderately useful."

Forty-one percent of the libraries said that, based on their experience with the Pilot Project, they thought their patrons would access the DOE microfiche collection "Somewhat more frequently," and another eighteen percent said "Much more frequently."

On both the second and third survey instruments, respondents took a great deal of time and trouble to write lengthy, detailed comments about their shared cataloging experiences. This was some of

the most helpful information collected, and the full text of their comments should be read in Appendixes F, H, and J. For instance, the very last question of this third survey, Question F.22, asked, "Do you have any other comments concerning your participation in the Pilot Project?" One respondent commented on OSAM, the menu-driven user interface that OSTI had provided with the database for any who wished to use it:

> Also, OSAM version of ITIS was great for our purposes. It would be *great* as the front-end search software that all libraries use if you decide to make ITIS available to depository libraries.

When shared cataloging was mentioned in these final comments, the problems noted before came up again, but so did mention of the desire to have this cataloging for the DOE microfiche collection. One respondent said that only one tape of shared cataloging had been loaded into the online catalog by the time this questionnaire was being answered; another said, "... inability to load tapes prevented serious study of adequacy of shared catalog product." Others commented on the need for a real MARC format and the need for corrections to the file format so that records could be uploaded more easily. One respondent wrote, ". . . if records for DOE reports could be merged into our general catalog, a significant jump in usage would be seen."

Another explained:

> Most of our patrons expect to find energy related material using our public access catalog. We have GPO cataloging and most assume that DOE material is included. Having the DOE cataloging in PAC would vastly increase the use of the Energy material and make it available to a large cross section of our patrons. For this reason, the Shared Cataloging is the most important part of the Pilot Project. While it took far longer than I would have preferred, we were able to load the records. Since working out the problems is what pilot projects are all about, I feel the Shared Cataloging project to be a success. I strongly urge that distribution of the DOE cataloging records to depository libraries be offered in the very near future.

Two respondents mentioned CD-ROM as a medium in which they had interest:

> Investigation of ITIS was valuable and instructive, as was introduction to DOE indexing and document distribution. Lack of funding and systems staff was our major difficulty. Having *full-text* documents available on line or in CD-ROM form would be a convenient and cost-saving method for us.

> CD-ROM is probably more appropriate to our needs. Adding records to the catalog could become prohibitively expensive in terms of mass storage.

One library's comments on Component I of the Pilot Project were divided into "positives" and "negatives," providing an excellent overall summary of their experience:

> Positives—Very helpful information about contents of DOE microfiche; Familiarization with OSTI, extremely interesting and beneficial; associations with OSTI personnel; very gratifying experience; Associations with other documents librarians from several states; Opportunity to participate in pilot and go through training program—a very well-planned project with many benefits for a more research-oriented institution; a well-planned training program with good personnel and resources.

> Negatives—Expensive for the library and institution for benefit received academically; Not really a beneficial program for a small liberal arts university; Lack of MARC format for records impossible to use; Lack of a load program to use with NOTIS system for cataloging records.

The comments received in this final survey provide excellent information and should be read in full in Appendixes H and J.

COMPONENT II: ALTERNATIVE MEDIA FOR FULL-TEXT DELIVERY

While Component I was specifically related to the use of DOE information, the second part of the Pilot Project took a broader view of the issues involved with disseminating and using full text. Most full-text information is not currently available in electronic format. Rather, this information is primarily accessed via such mechanisms as bibliographic databases and printed or online catalogs. Information users are directed to the full-text information through these mechanisms, but in most cases must manually scan the desired information on paper or microfiche.

While they are becoming more prevalent, even online full-text databases do not offer a definitive solution to the problem of searching and accessing the information they contain. Unlike bibliographic databases, full-text databases are not inherently structured in a way that makes them easily searchable. For text to be retrieved effectively from these databases, it must be marked in such a way that the search and retrieval software can recognize and extract appropriate sections in the proper context. Although standards such as the Standard Generalized Markup Language (SGML) and Computer-aided Acquisition and Logistics Support (CALS) that will provide consistent ways of marking text for this purpose are evolving, it will be several more years until they are fully developed, particularly for STI.

The demand for better access to full-text information, however, is immediate and increasing. Component II of the Pilot Project addressed the specific needs and concerns related to the acquisition and use of full text by the Depository Library community. This component was developed to determine the feasibility of distributing full-text DOE technical reports to Depository Libraries in some medium or media other than microfiche. A survey covering technological, economic, and other issues associated with the various electronic delivery options was delivered to all Depository Libraries, and responses were received from 1,064 libraries. Also included in this component is an assessment of alternative media technology and its use.

Objectives

The objectives of Component II were to determine the following:

- Capabilities and technologies existing at the Depository Libraries for receipt of full-text scientific and technical information (STI) in electronic format;
- Usability of full-text information in electronic format;
- Optimum medium for presenting DOE research and development (R&D) results in full-text formats;
- Need for DOE R&D results in the full-text format;
- Information which can be used by GPO and DOE to make decisions concerning future dissemination mechanisms;
- Usefulness of DOE information to the Depository Library user communities;
- Criticality of full-text information to the Depository Libraries or sufficiency of bibliographic information;
- Future, new, and existing technologies suitable for disseminating the full text of DOE STI reports.

Depository Library Use of Alternative Media for Full-Text Dissemination Survey Results

A two-part survey was used to collect data about the use of full-text information by Depository Libraries. The first part examined the current use of full-text information on microfiche; the second part addressed current and planned library technical capabilities for accessing full text in a variety of formats. The survey instrument, which included both closed-ended and open-ended questions, was developed in consultation with GPO and the General Accounting Office (GAO). GAO also served as a technical advisor for the data collection and analysis processes.

The survey was distributed to the 1,398 Depository Libraries on July 9, 1991, with responses requested by July 17, 1991. A total of 1,064 libraries responded, for a response rate of 76%.

Analysis of the data included examination of the total frequency of responses to each survey question, as well as (for selected questions) analysis of those responses provided by libraries which receive DOE full-text technical reports on microfiche compared with other libraries. Cross-tabulations between questions were performed where it seemed appropriate.

The data was analyzed using PC SAS©, Lotus 1-2-3©, FoxPro©, and StatGraphics© software. Several graphics software packages were used to generate charts. The survey form and data are contained in Appendixes K, L, and M.

Profile of Participating Libraries

To assist GPO and DOE in ascertaining the population of responding libraries currently being served by DOE full-text information, the libraries were asked whether they currently receive DOE technical reports in microfiche form. As shown in Table 42, of the 1,047 libraries responding to this question, 421 (40.21%) reported that they received all or some of these reports. Of the remaining libraries, 607 (57.98%) stated that they do not receive DOE microfiche, and an additional 19 libraries (1.81%) did not know whether they received DOE microfiche (Appendix K, Question I.6). Where appropriate, survey results for this component have been stratified into two groups based on responses to this question: (1) libraries stating that they did receive all or selected DOE reports ("Libraries Receiving DOE Full-Text Reports") and (2) "All Other Libraries." Note that the number of libraries which stated that they receive DOE full-text reports is greater than the number of library microfiche profiles maintained by OSTI; however, no attempt was made to correlate the microfiche profiles with the responses to this question.*

Types of Libraries

As shown in Figure 24, over half of the total libraries (54.97%) responding to this question were academic libraries. The next largest group was public libraries (23.42%) (see Table 43). More libraries receiving DOE technical reports were academic libraries (68.44% of the 358 responding in this group) than libraries in the "All others" group (47.41% of the 637 responding in this group) (Appendix K, Question I.2).

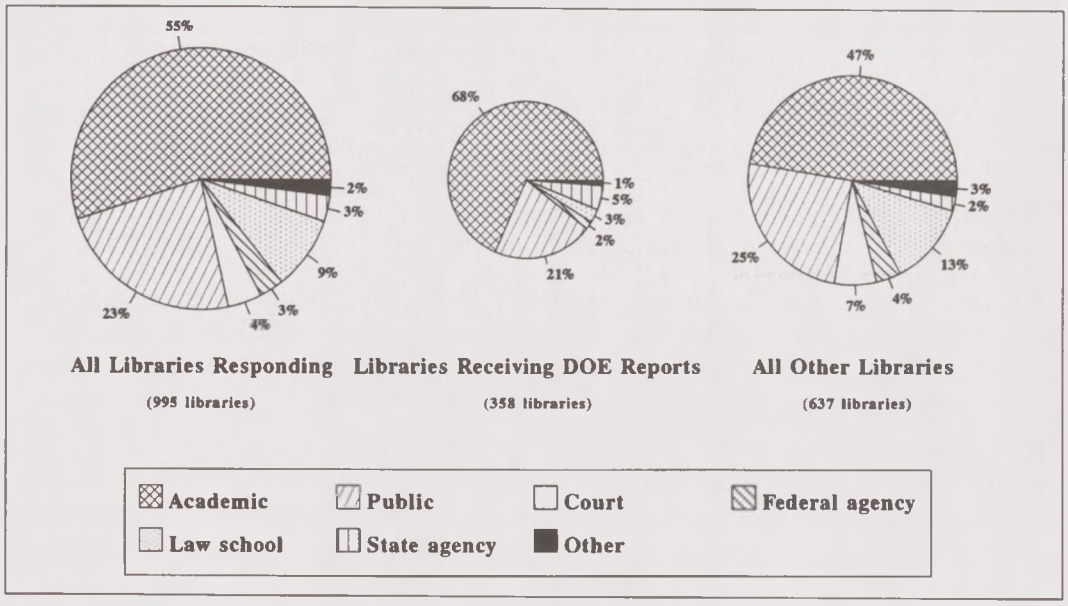
*At the time that the Pilot Project was initiated, OSTI distributed microfiche on an ongoing subscription basis to 255 Depository Libraries electing to receive all or selected DOE technical reports. Currently, OSTI maintains standing microfiche profiles for approximately 225 Depository Libraries. However, DOE microfiche are also available from the National Technical Information Service (NTIS), from various commercial vendors, and may be individually purchased from OSTI. In addition, DOE microfiche may be acquired through interlibrary loan or shared among several libraries belonging to the same institution or university. Therefore, the number of Depository Libraries actually receiving or acquiring DOE technical reports on microfiche is not limited to those for which OSTI maintains profiles.

Table 42: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Does your library currently receive DOE technical reports in microfiche form? (Question I.6)

Response	Total Libraries Responding	
	Freq.	Percent
Yes, we receive all available DOE microfiche	100	9.55
Yes, we receive selected DOE microfiche	321	30.66
No, but we are interested in receiving these microfiche	38	3.63
No, we have no interest/need for these microfiche	569	54.35
Don't know	19	1.81
Total	1047	100.00

Figure 24: Types of Libraries Responding to Survey*



Source: Appendix K, Question I.2

*69 libraries did not provide this information on the survey.

Table 43: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Which of the items below best describes your library? (Question I.2)

Response	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Academic library	245	24.62	302	30.35	547	54.97
Public library	75	7.54	158	15.88	233	23.42
Court library	0	0.00	42	4.22	42	4.22
Federal agency library	6	0.60	24	2.41	30	3.01
Law school library	10	1.01	81	8.14	91	9.15
State agency library	18	1.81	14	1.41	32	3.22
Other	4	0.40	16	1.61	20	2.01
Total	358	35.98	637	64.02	995	100.00

Libraries Holding DOE Contracts

Of all the libraries responding to a question concerning whether their institution holds a DOE research and development (R&D) contract, 76 libraries (7.87%) stated that they do hold such a contract, as shown in Table 44 (see Question I.5, Appendix K). Of the libraries receiving all or selected DOE reports on microfiche, 16.96% percent held a DOE R&D contract compared with .0158% of all other libraries. Over a third of all libraries responding to this question did not know whether their institution holds a DOE R&D contract.

Table 44: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

If your library is affiliated with a large institution or organization, does that organization/institution currently have a U.S. Department of Energy (DOE) research and development contract in place? (Question I.5)

	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
Response	Freq.	Percent	Freq.	Percent	Freq.	Percent
Yes	67	6.94	9	0.93	76	7.87
No	170	17.60	374	38.72	544	56.31
Don't know/Not sure	158	16.36	188	19.46	346	35.82
Total	395	40.89	571	59.11	966	100.00

Library Budgets for Materials and Equipment Acquisition

Question I.4 parts a and b asked the libraries to specify the dollar amounts and percentage of their total budget which was available for material and equipment acquisitions (Appendix K, Question I.4). Both median and average values were calculated for these dollars amounts and percentages.

Table 45 shows that an average of $834,863.79 was available for acquisition of materials. However, the median value for material acquisitions, $350,000.00, may be a more accurate measure of the actual budget amount available to a typical library. The average and median budget percentages for material acquisitions calculated for the libraries were closer to one another, at 33.47% (average) and 31% (median).

Average and median library budget dollar amounts and percentages for equipment acquisitions are reported in Table 46. Again, the wide gap between the high and low values reported by the libraries may make the median dollar amount ($20,000.00) a more accurate gauge of the typical library's budget allocation for equipment.

Table 45: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How much of the library's budget is available for material acquisitions? (Question I.4a)

	Dollar amount*	Budget percent†
Average	834,863.79	33.47
Median	350,000.00	31.00

*Based on 595 total responses.

†Based on 477 total responses.

Table 46: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How much of the library's budget is available for equipment acquisitions? (Question I.4b)

	Dollar amount*	Budget percent†
Average	91,999.31	4.31
Median	20,000.00	2.00

*Based on 399 total responses.

†Based on 331 total responses.

It is apparent from the information collected in this question that the community of Depository Libraries varies widely in terms of the libraries' relative abilities to purchase new equipment and materials. Any decisions concerning technologies used for dissemination of full-text information must therefore take into consideration that negligible funds are available to some libraries for materials or equipment to accommodate new media/technologies.

Microfiche Storage and Access

In answer to a question concerning where DOE microfiche are physically located, 84.5% of libraries responding indicated that the microfiche are located in the main library (see Table 47). Note that only libraries stating that they received all or selected DOE microfiche were eligible to respond to this question (Appendix K, Question I.7).

Table 47: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Where are DOE microfiche physically located? (Question I.7)

	Total Libraries Responding	
Response	Freq.	Percent
Not applicable	7	1.70
Main library	349	84.50
Branch library	34	8.23
Dispersed among several locations	6	1.45
Other	17	4.12
Not sure	0	0.00
Total	413	100.00

As shown in Table 48, over half (67.89%) of the libraries responding to Question I.9 indicated that they maintain more than the required five years of depository microfiche. Of the 420 libraries receiving DOE reports, 76.43% maintained microfiche longer than the required five years compared to 62.05% of the other 614 libraries (Appendix K, Question I.9).

Table 48: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Does your library maintain more than the required current five years of depository microfiche? (Question I.9)

	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
Response	Freq.	Percent	Freq.	Percent	Freq.	Percent
Yes	321	31.04	381	36.85	702	67.89
No	84	8.12	207	20.02	291	28.14
Not sure	15	1.45	26	2.52	41	3.97
Total	420	40.62	614	59.38	1034	100.00

Of the libraries which indicated that they do maintain depository microfiche longer than the required 5 years, 635 provided a response indicating how long it is maintained. Approximately 36% (233 of the 635 libraries) stated that they maintain all years of microfiche received for all or selected items. Another 17.48% (111 libraries) stated that the number of years that depository microfiche are maintained depends on the subject or title of the microfiche. Other responses given by more than 10% of these libraries were (1) microfiche are maintained for 10 to 15 years (by 87 libraries, or 13.7%) and (2) the number of years varies, reason not specified (by 79 libraries, or 12.44%). Frequencies and percentages of these responses are given in Appendix L, Question I.9.a.

Filing Systems for Microfiche and Paper

When asked to list all the filing systems they use for microfiche, over 90% of the libraries responding to this question indicated that they use Dewey Decimal, SuDocs, or some other classification system,

as shown in Table 49 (Appendix K, Question I.10). The next most frequently used filing system (by 17.2% of libraries responding) was by type of publication. The most frequently reported "Other" filing system was "Alphabetical by title," listed by 53 libraries (5.09% of all libraries responding) (Appendix L, Question I.10.e).

Similarly, 96.23% of responding libraries indicated that they use Dewey Decimal, SuDocs, or some other classification system for their books and paper publications (see Table 50). The next most frequently cited filing system for paper was by subject or subject category (20.94% of responding

Table 49: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How are your filing systems for microfiche organized? (Check all that apply.) (Question I.10)

	Libraries Receiving DOE Full-Text Reports*		All Other Libraries†		Total Libraries Responding	
Response	Freq.	Percent‡	Freq.	Percent‡	Freq.	Percent‡
By subject or subject category	43	4.13	81	7.78	124	11.91
By Dewey Decimal, SuDocs, or other classificationsystem	397	38.14	565	54.27	962	92.41
By type of publication	55	5.28	124	11.91	179	17.20
By vendor	30	2.88	23	2.21	53	5.09
Other filing method	50	4.80	72	6.92	122	11.72
Don't receive	0	0.00	2	0.19	2	0.19
Don't file	0	0.00	0	0.00	0	0.00
Don't know/Not sure	0	0.00	0	0.00	0	0.00
Total Responses	575		867		1442	

*Responses were received from 415 libraries in this group.
†Responses were received from 626 libraries in this group.
‡Percent based on 1,041 libraries responding.

Table 50: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How are your filing systems for books/paper publications organized? (Check all that apply.) (Question I.10)

	Libraries Receiving DOE Full-Text Reports*		All Other Libraries†		Total Libraries Responding	
Response	Freq.	Percent‡	Freq.	Percent‡	Freq.	Percent‡
By subject or subject category	74	7.14	143	13.80	217	20.94
By Dewey Decimal, SuDocs, or other classification system	399	38.51	598	57.72	997	96.23
By type of publication	46	4.44	94	9.07	140	13.51
By vendor	6	0.58	7	0.68	13	1.26
Other filing method	26	2.51	49	4.73	75	7.24
Don't receive	0	0.00	0	0.00	0	0.00
Don't file	1	0.10	0	0.00	1	0.10
Don't know/Not sure	0	0.00	0	0.00	0	0.00
Total Responses	552		891		1443	

*Responses were received from 413 libraries in this group.
†Responses were received from 620 libraries in this group.
‡Percent based on 1,033 libraries responding.

libraries). "Alphabetical by title" was the most frequently listed "Other" filing system (by 39 libraries) (Appendix L, Question I.10.e).

Difficulties in Accessing Full Text on Microfiche

As shown in Table 51, significant difficulties in accessing full-text information on microfiche were reported by approximately 45% of libraries responding to Question I.14. Libraries receiving DOE reports were slightly more likely to report significant problems in accessing full text on microfiche than were all other libraries (50.24% vs. 41.63%). The nature of the access difficulties experienced by these libraries is shown in Table 52. The most frequently cited problem (by 89.13% of libraries

Table 51: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Have you or your patrons experienced any significant difficulties in effectively accessing full-text information on microfiche? (Question I.14)

	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
Response	Freq.	Percent	Freq.	Percent	Freq.	Percent
Yes	207	20.15	256	24.93	463	45.08
No	205	19.96	359	34.96	564	54.92
Total	412	40.12	615	59.88	1027	100.00

Table 52: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

What is the nature of this access difficulty? (Check all that apply.) (Question I.15)

	Libraries Receiving DOE Full-Text Reports*		All Other Libraries†		Total Libraries Responding	
Response	Freq.	Percent‡	Freq.	Percent‡	Freq.	Percent‡
Patrons dislike microfiche format	172	37.39	238	51.74	410	89.13
Patrons aren't aware of availability of microfiche	112	24.35	116	25.22	228	49.57
Patrons have difficulty locating the information microfiche	78	16.96	113	24.57	191	41.52
Poor quality of fiche reader or printer equipment	64	13.91	64	13.91	128	27.83
Other	48	10.43	46	10.00	94	20.43
Insufficient number of microfiche readers or printers to meet demand	37	8.04	42	9.13	79	17.17
Fiche are missing or misfiled	38	8.26	31	6.74	69	15.00
Microfiche aren't filed or made available in a timely manner	30	6.52	25	5.43	55	11.96
Library staff aren't trained in accessing microfiche	8	1.74	5	1.09	13	2.83
Total Responses	587		680		1267	

*Responses were received from 205 libraries in this group.

†Responses were received from 255 libraries in this group.

‡Percent based on 460 libraries responding.

responding to Question I.15) was that patrons dislike the microfiche format. Almost half (49.57%) of these libraries reported that patrons aren't aware of the availability of information on microfiche. 41.52% stated that patrons have difficulty locating the information on microfiche (Appendix K, Question I.15). The 20.43% of these libraries checking "Other" were asked to describe the nature of the other access difficulties experienced. Poor quality of the microfiche itself was listed by 27 libraries, followed by inadequate/poor quality indexing (11 libraries). Eighteen other access difficulties were listed by one or more libraries (Appendix L, Question I.15.i).

To determine whether a relationship exists between the frequency of patrons' requests for STI and significant difficulties to librarians or patrons in effectively accessing full-text information on microfiche, a cross-tabulation of the results for Questions I.11 and I.14 was performed. The cross-tabulation was limited to the libraries providing valid responses to both questions, and percentages shown in Table 53 are based on these 869 libraries. The responses to Question I.11, which asked libraries how frequently patrons requested STI, were grouped according to whether patrons made requests (1) more frequently than once a month or (2) once a month or less. Based on this cross-tabulation, there does appear to be a relationship between the frequency with which requests for STI are received and whether significant access difficulties are experienced. The majority of libraries—264 of 444 (59.46%)—indicating that they receive requests for STI more than once a month also reported experiencing significant difficulties in accessing information on microfiche. In contrast, the majority of libraries—274 of 425 (64.47%)—receiving requests for STI once a month or less report they do *not* experience difficulties in accessing microfiche.

Table 53: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Relationship Between Frequency of Requests for STI and Experiencing Significant Difficulties in Effectively Accessing Full-Text Information on Microfiche (Cross-tabulation of Question I.14* by Question I.11†)

	Frequency of Requests for STI					
	Receive Requests More than Once a Month		Receive Requests Once a Month or Less		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Experience difficulty accessing information on microfiche	264	30.38	151	17.38	415	47.76
Do not experience difficulty accessing information on microfiche	180	20.71	274	31.53	454	52.24
Total	444	51.09	425	48.91	869	100.00

*Question I.14: Have you or your patrons experienced any significant difficulties in effectively accessing full-text information on microfiche?

†Question I.11: Within the past six months, about how frequently did patrons request scientific and technical information (STI)?

Patron Requests for Scientific and Technical Information

Table 54 shows that libraries receiving DOE full-text reports on microfiche were over twice as likely to receive requests for scientific and technical information at least once a week as all other libraries (50% vs. 22.48% of each group, respectively). Only 6.31% of libraries receiving DOE microfiche reported that patrons had made no requests for STI within the past six months compared with 33.39% of all other libraries (Appendix K, Question I.11).

Table 54: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Within the past six months, about how frequently did patrons request scientific and technical information (STI)? (Question I.11)

Response	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Patrons made at least a daily request for STI	115	11.19	53	5.15	168	16.34
Patrons requested STI less than daily, but more often than once a week	53	5.16	59	5.74	112	10.90
Patrons made a request for STI at least once a week	38	3.70	26	2.53	64	6.23
Patrons requested STI less than once a week, but more often than once a month	46	4.47	58	5.64	104	10.11
Patrons requested STI at least once a month	28	2.72	41	3.99	69	6.71
Patrons requested STI less than once a month	58	5.64	85	8.27	143	13.91
Patrons did not request STI within the past 6 months	26	2.53	205	19.94	231	22.47
Don't know/Not sure	48	4.67	89	8.66	137	13.33
Total	412	40.08	614	59.92	1028	100.00

Libraries receiving requests for STI within the past 6 months were asked to estimate the percentage of the time that patrons requested specific time periods for the information (Appendix K, Question I.12). Both average and median values were calculated for (1) the percent of the time that requesters specified a time period and (2) the percent of the time that requesters did not specify a time period. By the average value calculation, libraries reported that patrons requested a specific time period 43.89% of the time and did not specify a time period 56.11% of the time.

Libraries that had received requests for STI within the past 6 months for which patrons had requested specific times periods were further asked to identify what time periods were specified and how often they were requested (Appendix K, Question I.12). Table 55 shows how often each of the following time periods was requested: information less than 1 year old, information published within the past 1 to 5 years, information published with the past 6 to 10 years, and information over 10 years old. Figure 25 shows the relative frequency with which each time period was requested by patrons.

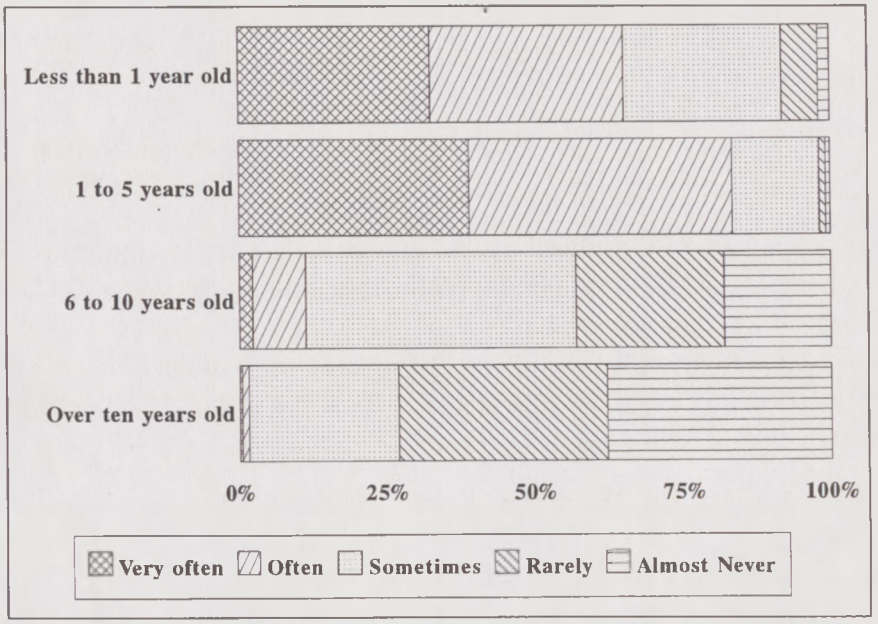
To determine if requests for STI were more frequent at libraries receiving DOE reports on microfiche, a cross-tabulation of the results for Question I.11 (dealing with frequency of requests of STI) and Question I.6 (dealing with whether libraries receive DOE microfiche) was performed. The cross-tabulation was limited to the libraries providing valid responses to both questions, and percentages shown in Table 56 are based on these 868 libraries. A relationship between frequency of requests for STI and receipt of DOE reports does appear to exist. For instance, daily requests for STI were received by 31.59% (115 of 364) of the libraries which receive DOE microfiche, compared with

Table 55: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

For those requests you received that did specify a time period, about how often was each period usually specified (at all libraries)?
(Question I.13)

	Very Often		Often		Sometimes		Rarely		Almost Never		Not Sure		Total	
Age of Information	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Information less than one year	86	32.09	86	32.09	70	26.12	16	5.97	5	1.87	5	1.87	268	100.00
Information published in past 1-5 years	107	38.63	121	43.68	40	14.44	3	1.08	2	0.72	4	1.44	277	100.00
Information published in past 6-10 years	6	2.23	24	8.92	119	44.24	65	24.16	47	17.47	8	2.97	269	100.00
Information published over 10 years ago	1	0.38	3	1.15	64	24.52	89	34.10	95	36.40	9	3.45	261	100.00

Figure 25: Frequency with Which Time Periods Were Specified by Patrons Requesting STI
(Based on Responses From Libraries Receiving Requests for STI Within the Past 6 Months)



Source: Appendix K, Question I.13

10.12% (51 of 504) of the libraries which do not receive DOE microfiche. Only 7.1% (26 of 364) libraries which receive DOE microfiche did not receive a request for STI during the previous 6 months, compared with 39.7% (200 of 504) libraries which do not receive DOE microfiche.

Library Technical Capabilities

The second part of this survey dealt with the libraries' current and planned technical capabilities for acquiring and accessing full-text information. Question II.2 asked the libraries to indicate which of

Table 56: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Relationship Between Receipt of DOE Reports and Frequency of Requests for STI (Cross-tabulation of Question I.11* by Question I.6†)

	Receive DOE Microfiche		Do Not Receive DOE Microfiche		Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Patrons made at least a daily request for STI	115	31.6	51	10.1	166	19.1
Patrons requested STI less than daily, but more often than once a week	53	14.6	56	11.1	109	12.6
Patrons made a request for STI at least once a week	38	10.4	22	4.4	60	6.9
Patrons requested STI less than once a week, but more often than once a month	46	12.6	55	10.9	101	11.6
Patrons requested STI at least once a month	28	7.7	37	7.3	65	7.5
Patrons request STI less than once a month	58	15.9	83	16.5	141	16.2
Patrons did not request STI within the past 6 months	26	7.1	200	39.7	226	26.0
Total	364	41.9	504	58.1	868	100.0

*Question I.11: Within the past six months, about how frequently did patrons request scientific and technical information (STI)?

†Question I.6: Does your library currently receive DOE technical reports in microfiche form?

the listed types of computers they (1) use currently, (2) plan to use in three years, (3) are considering using but are undecided, and (4) don't use or plan to use. As shown in Table 57, over 98% of all libraries responding to this question currently use microcomputers/personal computers. Only 0.029% of these libraries do not use or plan to use this type of computer. Figure 26 depicts the proportionate distribution of usage of all types of computers listed (Appendix K, Question II.2).

Table 57: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

What type(s) of computer(s) does your library use currently and/or plan to use in the next three years? (Question II.2)

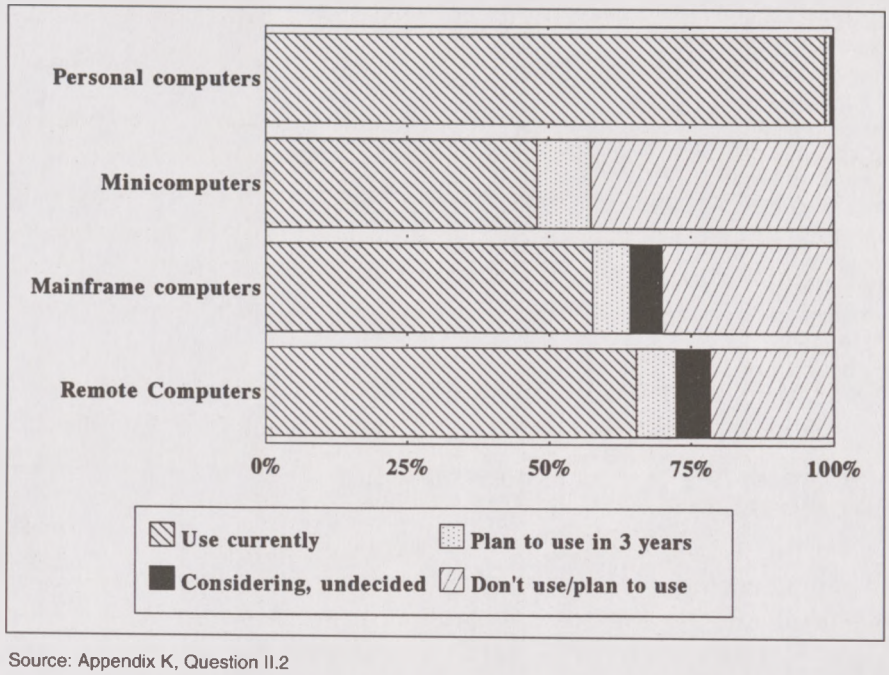
	Use Currently		Will Use in 3 yrs		Considering But Undecided		Don't Use or Plan To Use		Total Responses	
Computer type	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Personal computers	1029	98.56	9	0.86	3	0.29	3	0.29	1044	100.00
Minicomputers	238	47.89	47	9.46	0	0.00	212	42.65	497	100.00
Mainframe computers	396	59.37	42	6.30	36	5.40	193	28.93	667	100.00
Remote computers	413	65.35	44	6.96	38	6.01	137	21.68	632	100.00
Don't know/Not sure	7	15.22	15	32.61	6	13.04	18	39.13	46	100.00

Library Use of Optical and Compact Discs

Question II.3 asked libraries to indicate how they currently use optical disc and compact disc technologies for storing and retrieving all types of data and information used (Appendix K, Question II.3). Over 85% of the libraries responding to this question indicated that they don't currently own or use optical discs for

any purpose, as shown in Table 58. (Note that 558 libraries did not respond to the part of the question concerning use of optical discs.) More libraries receiving DOE technical reports used optical discs in some capacity (41 of 202 libraries responding or 20.3%) than did all other libraries (31 of 304 libraries responding or 10.2%). Use of optical discs for search and retrieval of information was reported by 8.88% of all libraries.

Figure 26: Current and Planned Usage of Computers



Source: Appendix K, Question II.2

Table 58: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How does your library currently use optical disc technology (for all types of data/information)? (Question II.3)

	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
Response	Freq.	Percent	Freq.	Percent	Freq.	Percent
Archival storage only	5	0.99	2	0.40	7	1.39
Search and retrieval of information	23	4.54	22	4.35	45	8.88
Both archival storage and search and retrieval	12	2.37	2	0.40	14	2.77
Other	1	0.20	5	0.99	6	1.19
Don't currently own or use	161	31.82	273	53.95	434	85.77
Total	202	39.92	304	60.08	506	100.00

In contrast, Table 59 shows that over 90% of all libraries responding to this question indicated that they do use compact disc technology in some capacity (872 libraries or 90.83%). The most frequently listed use for compact discs was for search and retrieval of information, as shown in Table 59. Again,

a higher percentage of libraries receiving DOE technical reports on microfiche used compact discs (96.28% or 363 libraries of 377 responding) than did all other libraries (87.31% or 509 of 583 libraries responding).

In Question II.4, the libraries were asked to indicate how they planned to use optical and compact disc technologies in the next three years. Over 68% of all libraries responding to this question indicated that they do not plan to own or use optical discs in that time period (Table 60). Approximately 14% of all libraries responding to this question stated that they planned to use optical discs for both archival storage and search and retrieval of information. (Note that 597 libraries did not respond to this part of the question—see Appendix K, Question II.4.)

Planned usage of compact discs was reported by 97.36% of all libraries responding to Question II.4 (887 of 911 responding libraries). Approximately 71% of all libraries responding planned to use compact discs for both archival storage and search and retrieval of information, with another 25% planning to use compact discs for some other purpose than those listed in the question, as shown in Table 61. Reported "Other" responses are contained in Appendix L, under Question II.4.d—Other.

Table 59: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How does your library currently use compact disc (CD) technology (for all types of data/information)? (Question II.3)

	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
Response	Freq.	Percent	Freq.	Percent	Freq.	Percent
Archival storage only	5	0.52	1	0.10	6	0.62
Search and retrieval of information	289	30.10	453	47.19	742	77.29
Both archival storage and search and retrieval	65	6.77	46	4.79	111	11.56
Other	4	0.42	9	0.94	13	1.36
Don't currently own/use	14	1.46	74	7.71	88	9.17
Total	377	39.27	583	60.73	960	100.00

Table 60: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How does your library plan to use optical disc technology in the next three years? (Question II.4)

	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
Response	Freq.	Percent	Freq.	Percent	Freq.	Percent
Archival storage only	4	0.86	4	0.86	8	1.72
Search and retrieval of information	28	6.00	36	7.71	64	13.70
Both archival storage and search and retrieval	29	6.21	25	5.35	54	11.56
Other	8	1.71	14	3.00	22	4.71
Don't plan to own or use	125	26.77	194	41.54	319	68.31
Total	194	41.54	273	58.46	467	100.00

Table 61: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

How does your library plan to use compact disc (CD) technology in the next three years? (Question II.4)

Response	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Archival storage only	3	0.33	0	0.00	3	0.33
Search and retrieval of information	228	25.03	418	45.88	646	70.91
Both archival storage and search and retrieval	116	12.73	111	12.18	227	24.92
Other	5	0.55	6	0.66	11	1.21
Don't plan to own or use	5	0.55	19	2.09	24	2.63
Total	357	39.19	554	60.81	911	100.00

Question II.5 asked the libraries to indicate all types of compact disc (CD) equipment currently owned or accessed. As shown in Table 62, the three most frequently given responses were (1) multiple CD workstations in a stand-alone mode (listed by 56.62% of libraries responding), (2) a single CD workstation not on a local area network (LAN) (listed by 40.88% of responding libraries), and (3) a CD jukebox or disc tower, not on a LAN (listed by 13.82% of responding libraries) (Appendix K, Question II.5.). It is interesting that only about 23% of those responding stated that they had any CD equipment on any type of network. (See Appendix L, Question II.5.g for other types of CD equipment specified by the libraries.)

Table 62: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Please describe the compact disc (CD) equipment your library currently owns or accesses. (Check all that apply.) (Question II.5)

Response	Total Libraries Responding	
	Freq.	Percent*
Single CD workstation, not on a Local Area Network (LAN)	426	40.88
Single CD workstation, on a LAN	52	4.99
Multiple CD workstations, stand alone	590	56.62
Multiple CD players, connected by a network or daisy chain	115	11.04
CD jukebox or disc tower, not on a LAN	144	13.82
CD jukebox or disc tower, on a LAN	69	6.62
Other	22	2.11
None	82	7.87
Total Responses	1500	

*Percent based on 1042 libraries responding.

Library Use of Networks

As shown in Table 63, approximately 63% of libraries responding to Question II.6 indicated that they had workstations that were used to access local or remote networks. Of these libraries, 88% stated

Table 63: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Are any of the workstations in your library used to access a local or remote network? (Question II.6)

Response	Total Libraries Responding	
	Freq.	Percent
Yes	645	63.36
No	360	35.36
Not sure	13	1.28
Total	1018	

that they use a workstation with a modem to access remote computers (e.g., dial in to DIALOG) as shown in Table 64 (Appendix K, Question II.7). The next most frequently given response (by 237 libraries or 37.44%) was workstations connected to a mainframe computer.

Question II.8 asked the libraries to indicate whether they currently had, or planned to have within three years, access to one or more of several listed network services, including TYMNET, Internet, Compuserve, etc. These networks, some commercial and some government-operated, provide access to remote databases, electronic mail, bulletin boards, and other services. Over 56% of the libraries stated that they had or would have access to TYMNET, with approximately 45% reporting access to Internet and BITNET (Table 65).

In addition, 181 libraries reported that they used one or more "Other" networks. Sprintnet (formerly called Telenet) was the "Other" network most frequently cited (by 59 libraries), followed by OCLC/EPIC (28 libraries), Dialnet (22 libraries), and DIALOG (18 libraries). Seventy-four other networks were listed by one or more libraries, for a total of 248 responses (Appendix L, Question II.8.h).

Further analysis of the other networks listed by these libraries revealed that they fell into one of five categories: (1) network access systems, such as Dialnet and Sprintnet; (2) commercial bibliographic systems, such as DIALOG and OCLC; (3) local or statewide networks, such as FIRN and Huskernet;

Table 64: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Describe the way(s) that your library uses workstations to access networks. (Check all that apply.) (Question II.7)

Response	Total Libraries Responding	
	Freq.	Percent*
Workstations are connected to a LAN (e.g., library only)	213	33.65
Workstations are connected to a Wide Area Network (WAN) (e.g., campus-wide)	206	32.54
Workstations have modems to access remote computers (e.g., dial in to DIALOG)	558	88.15
Workstations are connectged to a minicomputer	122	19.27
Workstations are connected to a mainframe computer	237	37.44
Don't know/Not sure	5	0.79
Total Responses	1,341	

*Percent based on 633 libraries responding.

(4) consortiums, such as Econet and Freenet; and (5) networks that did not fit into any of the other categories. For the purpose of this analysis, a "consortium" is defined as a subject-specific network (e.g., law or medicine related) or a regional, non-commercial network that encompasses more than a single state. The libraries' responses were then retabulated to determine whether they had listed one or more networks within a given *category*.

As shown in Table 66, network access systems were used by 53.59% of the 181 libraries, with 31.49% using commercial bibliographic systems.

Table 65: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Does your library currently have, or plan to have within the next three years, access to any of the following network services? (Check all that apply.) (Question II.8)

	Libraries Receiving DOE Full-Text Reports*		All Other Libraries†		Total Libraries Responding	
Response	Freq.	Percent‡	Freq.	Percent‡	Freq.	Percent‡
TYMNET	254	24.85	324	31.70	578	56.56
INTERNET	233	22.80	231	22.60	464	45.40
Defense Data Network (DDN)	9	0.88	6	0.59	15	1.47
ESnet	5	0.49	1	0.10	6	0.59
NSFNET	56	5.48	37	3.62	93	9.10
BITNET	235	22.99	232	22.70	467	45.69
COMPUSERVE	94	9.20	140	13.70	234	22.90
Other	77	7.53	120	11.74	197	19.28
No access/does not apply	16	1.57	61	5.97	77	7.53
Don't know	43	4.21	83	8.12	126	12.33
Total Responses	1,022		1,235		2,257	

*Responses were received from 407 libraries in this group.
†Responses were received from 615 libraries in this group.
‡Percent based on 1,022 libraries responding.

Table 66: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Use of "Other" Networks/Services by Category (Number of Libraries Listing One or More Networks in a Category) (Question II.8*)

	Freq.	Percent†
Network Access Systems (e.g. Dialnet, Sprintnet, Internet, etc.)	97	53.59
Commercial Bibliographic Systems (e.g. DIALOG, OCLC, RLIN, etc.)	57	31.49
Local/Statewide Networks (e.g. FIRN, Huskernet, Sunynet, etc.)	32	17.68
Consortiums (e.g. Econet, Freenet, SURANET, etc.)	13	7.18
Other (unidentified/do not fit into other categories)	12	6.63
Total	211	

* Does your library currently have, or plan to have within the next three years, access to any of the following network services?
† Percentages are based on 181 libraries which provided a valid "other" response.

Current and Planned Methods Used To Acquire Full-Text Information

Question II.9 asked the libraries to indicate all the methods currently used to acquire full-text information and planned usage of those methods within the next three years. All of the media listed were used by a higher percentage of libraries receiving DOE microfiche than by other libraries. Table 67 shows the percentage of usage for all of the methods listed (Appendix K, Question II.9). Additional methods used to acquire full text specified by the libraries are listed in Appendix L, Question II.9.i.

Table 67: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Please indicate all the methods your library currently uses to acquire full-text information. (Check all that apply.) (Question II.9)

	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
Response	Freq.	Percent*	Freq.	Percent†	Freq.	Percent‡
Download from remote, time-sharing database/ service	251	61.67	359	60.13	610	60.76
Download from internal host (mainframe, minicomputer, microcomputer)	101	24.82	137	22.95	238	23.71
Optical discs	33	8.11	26	4.36	59	5.88
Compact discs (i.e., CD-ROM)	324	79.61	387	64.82	711	**70.82**
Floppy disks	207	50.86	273	45.73	480	47.81
Microfiche or microfilm	377	92.63	540	90.45	917	**91.33**
Magnetic tape	55	13.51	45	7.54	100	9.96
Paper	366	89.93	530	88.78	896	**89.24**
Other	2	0.49	11	1.84	13	1.29

*Percent based on 407 libraries receiving DOE full-text reports responding.

†Percent based on 597 "all other" libraries responding.

‡Percent based on 1,004 libraries responding.

The second part of Question II.9 asked the libraries to specify the methods they planned to use to acquire full text in the next three years. In tabulating the responses to this question, it was assumed that the libraries currently using a given method would continue to use it during the next three years, and that the "plan to use" responses given to this question represented libraries which planned to use that method but did not currently do so. As Table 68 demonstrates, more libraries planned to add the use of compact discs during the next three years than any other method listed (182 libraries or 44.28% of those planning to add the use of media). Other methods planned to be used by 100 or more libraries were downloading information from internal hosts (by 133 libraries or 32.36%) and downloading from remote, time-sharing databases (109 libraries or 26.52%). Note that relatively few libraries responded to this part of the question.

Factors in Selecting a Storage/Access Medium and User Interface for Full Text

Question II.10 asked the libraries to rate the importance of a number of factors in selecting a storage/ access medium for full-text information. The factor rated by the largest number of libraries as being of "Very great" or "Great" importance was ease of retrieval of information (by 947 libraries, or 91.68% of those rating this factor). Purchase cost was the second most important factor in terms of

Table 68: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Please indicate all the methods your library plans to use in the next three years. (Check all that apply.) (Question II.9)

Response	Libraries Receiving DOE Full-Text Reports		All Other Libraries		Total Libraries Responding	
	Freq.	Percent*	Freq.	Percent†	Freq.	Percent‡
Download from remote, time-sharing database/ service	48	28.92	61	24.90	109	26.52
Download from internal host (mainframe, minicomputer, microcomputer)	64	38.55	69	28.16	133	32.36
Optical discs	39	23.49	40	16.33	79	19.22
Compact discs (i.e., CD-ROM)	52	31.33	130	53.06	182	44.28
Floppy disks	11	6.63	23	9.39	34	8.27
Microfiche or microfilm	3	1.81	10	4.08	13	3.16
Magnetic tape	39	23.49	31	12.65	70	17.03
Paper	2	1.20	10	4.08	12	2.92
Other	3	1.81	0.00	0.00	1.6	0.73

*Percent based on 166 libraries receiving DOE full-text reports responding.

†Percent based on 245 "all other" libraries responding.

‡Percent based on 411 libraries responding.

the percentage of libraries rating it as being of "Very great" or "Great" importance (by 945 libraries, or 90.95% of those rating this factor). The third most important factor was update or subscription costs (rated as being of at least "Great" importance by 914 libraries, or 88.05% of those rating this factor) (Table 69). Thus, two of the three most important factors to libraries in selecting a storage/ access medium for full-text information were related to costs of the medium. All of the listed factors received ratings of at least "Great" importance by 50% or more of the libraries rating that factor. (Note that although 100% of the libraries listing an "Other" factor ranked the specified factor as being of at least "Great" importance, only 32 libraries stated that some "Other" factor was of importance to them.) (Responses are listed in Appendix L, Question II.10.i.)

In the general comments provided by libraries in Questions I.16 and II.13, several libraries remarked that storage space required for various media and and/or any required new equipment was a concern. Nine libraries indicated that microfiche takes less storage space than paper and is a space-saving medium; seven libraries said that they have limited storage space for full text in paper or microform; and five libraries stated that they will use more full text on electronic and optical media due to storage limitations. Tabulations of comments related to storage space are contained in Appendix M (Questions I.16 and II.13).

Factors in selecting a user interface for searching, retrieving, and manipulating full-text information were rated in Question II.11 (Appendix K). Eight different factors were listed in the question; in addition, libraries were asked to identify any other factors they thought important. (These additional factors specified by the libraries along with their assigned ratings are listed in Appendix L, Question II.11.l.) Easy search and retrieval of information was the factor receiving the highest percentage of ratings of at least "Great" importance (by 965 libraries, or 93.6% of those rating this factor), as shown in Table 70.

Table 69: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

For each of the following, please indicate how important this factor would be to your library in selecting a storage/access medium for full-text information.
(Question II.10)

	Very Great Importance		Great Importance		Moderate Importance		Some Importance		Little or No Importance		Not Applicable		Total Responses	
Factor	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Compatibility with other media used	423	41.15	343	33.37	150	14.59	66	6.42	29	2.82	17	1.65	1,028	100.00
Compatibility with current hardware owned	563	54.19	350	33.69	87	8.37	20	1.92	3	0.29	16	1.54	1,039	100.00
Purchase cost	626	60.25	319	30.70	69	6.64	17	1.64	1	0.10	7	0.67	1,039	100.00
Maintenance/operation cost	505	49.03	369	35.83	122	11.84	26	2.52	1	0.10	7	0.68	1,030	100.00
Update or subscription costs	548	52.79	366	35.26	97	9.34	16	1.54	0	0.00	11	1.06	1,038	100.00
Minimal physical storage requirements	232	22.72	312	30.56	303	29.68	140	13.71	26	2.55	8	0.78	1,021	100.00
Supports simultaneous access by multiple users	240	23.58	289	28.39	245	24.07	163	16.01	68	6.68	13	1.28	1,018	100.00
Ease of retrieval of information	627	60.70	320	30.98	71	6.87	10	0.97	0	0.00	5	0.48	1,033	100.00
Other	22	68.75	10	31.25	0	0.00	0	0.00	0	0.00	0	0.00	32	100.00

Table 70: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

For each of the following, please indicate how important this factor would be to your library in selecting a user interface for searching, retrieving, and manipulating full-text information. (Question II.11)

	Very Great Importance		Great Importance		Moderate Importance		Some Importance		Little or No Importance		Not Applicable		Total Responses	
Factor	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Compatibility with current software/operating systems	517	50.44	349	34.05	100	9.76	31	3.02	12	1.17	16	1.56	1,025	100.00
Supports simultaneous access by multiple users	294	28.85	299	29.34	234	22.96	117	11.48	61	5.99	14	1.37	1,019	100.00
Familiarity with user interface	232	22.95	330	32.64	292	28.88	112	11.08	33	3.26	12	1.19	1,011	100.00
Menu-driven user interface	318	31.27	361	35.50	224	22.03	85	8.36	17	1.67	12	1.18	1,017	100.00
Easy search and retrieval of information	663	64.31	302	29.29	44	4.27	14	1.36	2	0.19	6	0.58	1,031	100.00
Fast retrieval of information	336	32.81	427	41.70	202	19.73	50	4.88	3	0.29	6	0.59	1,024	100.00
Capability to download or extract information for sorting and formatting	283	27.72	339	33.20	254	24.88	102	9.99	34	3.33	9	0.88	1,021	100.00
Complete representation of information	282	28.37	412	41.45	201	20.22	73	7.34	10	1.01	16	1.61	994	100.00
Information is formatted to conform to expected standards	355	34.98	379	37.34	181	17.83	74	7.29	14	1.38	12	1.18	1,015	100.00
Capability to printout information in different formats	212	20.99	305	30.20	311	30.79	138	13.66	34	3.37	10	0.99	1,010	100.00
Accommodates both novice and expert users	546	53.48	325	31.83	97	9.50	38	3.72	8	0.78	7	0.69	1,021	100.00
Other	15	46.88	6	18.75	1	3.13	0	0.00	0	0.00	10	31.25	32	100.00

Interestingly, the two factors receiving the highest percentage of "Very great" or "Great" importance ratings were related to the user-friendliness of the interface. Of the general comments related to dissemination of full text provided by the libraries (see Appendix M, "Comments Related to User-Friendliness of Technology for Full-Text Dissemination," Questions I.16 and II.13), 20 comments were specifically related to the user-friendliness of technology/media used for full-text dissemination. Several of these comments urged government agencies to ensure that any interface provided with full-text information be as user friendly as possible.

The average overall importance of each factor in selection of a user interface for full-text information listed in Question II.11 was calculated by assigning a value of 4 to "Very great importance" responses, a value of 3 to "Great importance" responses, a value of 2 to "Moderate importance" responses, and a value of 1 to "Some importance" responses. "Little or no importance" and "Not applicable" responses were excluded from this analysis so that the averages would include responses only from those libraries attaching some importance to a given factor. Table 71 shows the average overall importance of each factor to libraries receiving DOE reports on microfiche, all other libraries, and all libraries providing an importance rating for each factor listed.

Libraries receiving DOE reports on microfiche assigned a slightly higher average importance to factors related to supporting multiple numbers and types of users, standardization and completeness of information, and easy search and retrieval of information than did other libraries.

Table 71: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Average Value of Importance of Factors Affecting Selection of a User Interface for Searching, Retrieving, and Manipulating Full-Text Information* (Question II.11†)

	Average Importance for Libraries Which Receive DOE Full-Text Reports	All Other Libraries	Average for Total Libraries Providing a Rating
Other	3.38	3.79	3.64
Easy search and retrieval of information	3.64	3.53	3.58
Accommodates both novice and expert users	3.41	3.35	3.37
Compatibility with current software/ operating systems	3.34	3.36	3.36
Fast retrieval of information	3.07	3.01	3.03
Information is formatted to conform to expected standards	3.10	2.98	3.03
Complete representation of information	2.99	2.89	2.93
Menu-driven user interface	2.90	2.94	2.92
Supports simultaneous access by multiple users	2.86	2.79	2.82
Capability to download or extract information for sorting and formatting	2.87	2.78	2.82
Familiarity with user interface	2.70	2.71	2.71
Capability to print out information in different formats	2.59	2.63	2.61

*Method: Average overall importance of each factor was calculated using the following scale: Very great importance = 4, Great importance = 3, Moderate importance = 2, and Some importance = 1.

†Question II.11: For each of the following, please indicate how important this factor would be to your library in selecting a user interface for searching, retrieving, and manipulating full-text information.

Preferred Environments and Media for Receiving and Accessing Full-Text Information

Two questions on this survey asked libraries to specify their preferences for media and/or environments used to receive or access full-text information. It should be noted that the issues of receiving and accessing full text are different, but both are discussed in this section to illustrate the extent to which libraries' preferences are tied to the various media.

Library Preferences for Receiving DOE Technical Reports

Question I.8 asked the libraries which receive DOE full-text reports on microfiche to indicate the extent to which they preferred to *receive* DOE technical reports in a medium or media other than microfiche (Appendix K). Of the media/sources listed, compact discs received the highest percentage of "Very greatly prefer" responses (25.58%) as shown in Table 72. In addition, 51.39% of libraries rating this medium indicated that they would "Greatly prefer" it to microfiche. Paper was the next most preferred medium to microfiche, rated as at least "Greatly preferred" to microfiche by 25.38% of libraries rating this medium. Only 10.83% of the libraries rating compact discs stated that they "Do not prefer" this medium. Figure 27 represents the proportionate preferences of libraries providing a rating for each medium.

Library Preferences for Accessing Full Text in General

The final question of the survey asked libraries to indicate, all considerations of cost and planned acquisition aside, which media and environments they *preferred* to access full-text information. (Appendix K, Question II.12). The first section of the question, which dealt with preferences for electronic and nonelectronic environments, listed various types of computers and systems that could be used as a platform for accessing full-text information (Table 73). The two environments receiving the highest percentages of "Very greatly prefer" and "Greatly prefer" ratings were stand-alone personal computers (61.25% of libraries rating this item) and personal computers on a local area network (53.50% of libraries rating this item). The environment receiving the highest percentage of "Do not prefer" ratings was mainframe/minicomputer (16.14% of libraries rating this item). The nonelectronic environment received a rating of at least "Greatly prefer" from 32.94% of the libraries providing a rating, with 10.36% of these libraries indicating that they "Do not prefer" this environment for accessing full text.

Of the media the libraries were asked to rate in this question, optical discs were the least preferred medium, as shown in Table 73. Only 10.78% of libraries rating this medium indicated that they "Very greatly" or "Greatly" preferred it, with 36.34% stating that they "Do not prefer" optical discs for accessing full text. Compact discs, on the other hand, were the most preferred medium (72.89% of the libraries rated this medium as "Very greatly" or "Greatly" preferred). Paper was at least "Greatly" preferred by 53.94% of the libraries providing a rating and was not preferred by only 1.89% of these libraries. Most of the ratings for floppy disks and microfiche fell in the "Moderately prefer" to "Somewhat prefer" categories. Other preferred media specified by the libraries are listed in Appendix L, Question II.12.1. Figure 28 represents the proportionate preferences of all libraries providing a rating for each medium.

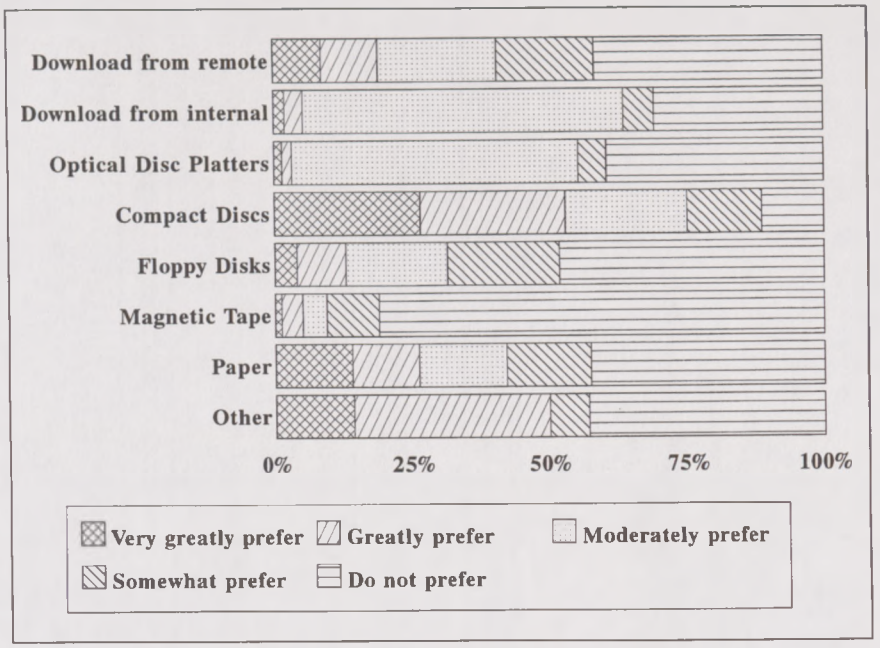
Average preferences were calculated for each environment and medium by assigning a value of "4" to "Very greatly prefer" responses, a "3" to "Greatly prefer" responses, a "2" to "Moderately prefer" responses, and a "1" to "Somewhat prefer" responses. "Do not prefer" and "Don't know" responses

Table 72: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

If you could receive full-text DOE technical reports in some medium or media other than microfiche, to what extent would you prefer each of the following media? (Question I.8)

	Very Greatly Prefer		Greatly Prefer		Moderately Prefer		Somewhat Prefer		Do Not Prefer		Don't Know		Total	
Source	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Download from remote, time-sharing database/ service	31	8.05	36	9.35	75	19.48	62	16.11	144	37.40	37	9.61	385	100.00
Download from internal host	14	3.74	24	6.42	41	10.96	39	10.43	217	58.02	39	10.43	374	100.00
Optical Disc Platters	8	2.19	10	2.74	28	7.67	28	7.67	217	59.45	74	20.28	365	100.00
Compact Discs	111	25.58	112	25.81	92	21.20	57	13.13	47	10.83	15	3.45	434	100.00
Floppy Disks	15	3.91	33	8.59	68	17.71	76	19.79	177	46.09	15	3.91	384	100.00
Magnetic Tape	4	1.08	13	3.53	15	4.07	32	8.67	273	73.98	32	8.67	369	100.00
Paper	54	13.71	46	11.67	62	15.74	59	14.97	163	41.37	10	2.54	394	100.00
Other	2	7.14	5	17.86	0	0.00	1	3.57	6	21.43	14	50.00	28	100.00

Figure 27: Library Preferences for Receiving Full-Text DOE Technical Reports



Source: Appendix K, Question I.8

were excluded from this calculation as these ratings do not indicate an actual level of preference for a given medium. Table 74 presents these average preferences for libraries which receive DOE full-text reports, all other libraries, and for all libraries indicating some level of preference for an environment or medium.

The electronic environment which received the highest rating by this method was stand-alone personal computers, which had an average preference value of 2.96 (approximating a rating of "Greatly prefer"). Personal computers on a local area network received the next highest average preference rating. A nonelectronic environment received an average preference rating of 2.58 (midway between "Greatly prefer" and "Moderately prefer").

Of the media rated by this method, the "Other" media specified by libraries received the highest rating (3.57, midway between "Very greatly" and "Greatly prefer"). However, note that only 17 libraries actually specified a preferred "Other" medium. Compact discs received the next highest average preference rating of 3.09 (just above "Greatly prefer"). Microfiche/microform and floppy disks each received an average preference rating of 2.12, which was the lowest average preference for any medium.

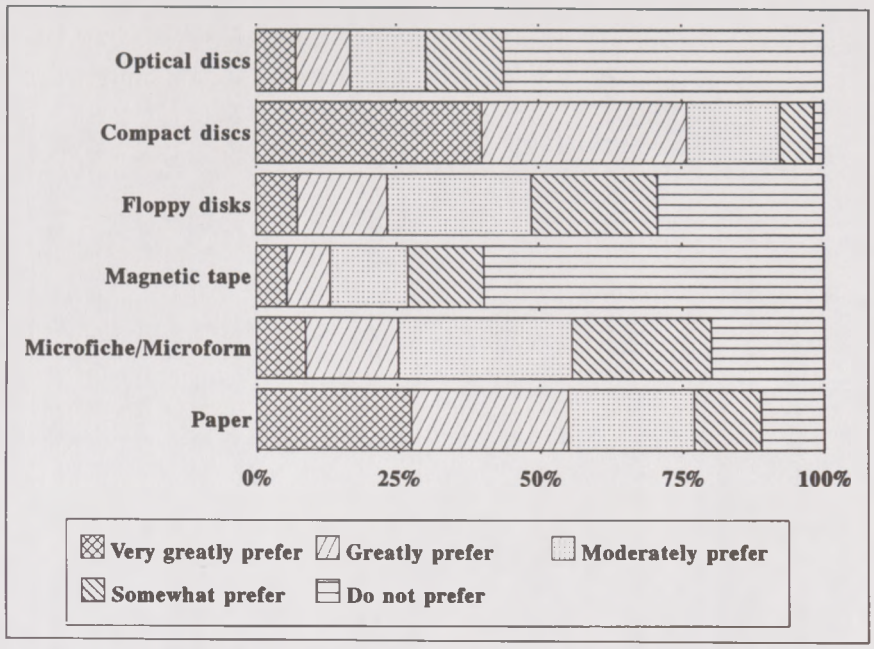
Many of the general comments provided by the libraries dealt with preferences for or concerns about the various media addressed by this survey. Throughout these comments, ease of use emerges as a major concern for libraries. Of the 109 comments related to compact discs (see Appendix M), the three most frequently made were (1) that CD-ROM products used for full-text dissemination must be user friendly and easy to install and use; (2) that current government CD-ROM products have poor user interfaces, poor user support, and/or poor search software; and (3) that government CD-ROM products should use standard search protocols and/or common user interfaces.

Table 73: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

All considerations of cost and presently planned acquisitions aside, please indicate on which of the following environments and media your library *prefers* to access full-text information. (Question II.12)

	Very Greatly Prefer		Greatly Prefer		Moderately Prefer		Somewhat Prefer		Do Not Prefer		Don't Know		Total	
Factor	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Electronic Environment														
Personal computer (PC)—(stand alone)	297	30.94	291	30.31	195	20.31	69	7.19	30	3.13	78	8.13	960	100.00
PC Local Area Network (LAN)	261	27.44	248	26.08	148	15.56	82	8.62	117	12.30	95	9.99	951	100.00
Mainframe/Minicomputer	98	10.99	127	14.24	168	18.83	96	10.76	144	16.14	259	29.04	892	100.00
Remote networks/ Computers	107	11.89	183	20.33	219	24.33	127	14.11	121	13.44	143	15.89	900	100.00
Nonelectric environment	132	17.53	116	15.41	153	20.32	92	12.22	78	10.36	182	24.17	753	100.00
Media														
Optical disc platters	39	4.57	53	6.21	71	8.32	75	8.79	310	36.34	305	35.76	853	100.00
Compact discs	369	37.05	357	35.84	163	16.37	59	5.92	31	3.11	17	1.71	996	100.00
Floppy disks	64	7.03	137	15.04	219	24.04	191	20.97	49	5.38	251	27.55	911	100.00
Magnetic tape	40	4.65	56	6.50	99	11.50	96	11.15	136	15.80	434	50.41	861	100.00
Microfiche/Microform	81	8.60	151	16.03	282	29.94	224	23.78	20	2.12	184	19.53	942	100.00
Paper	255	26.76	259	27.18	206	21.62	111	11.65	18	1.89	104	10.91	953	100.00
Other	14	35.90	5	12.82	2	5.13	0	0.00	15	38.46	3	7.69	39	100.00

Figure 28: Library Preferences for Media Used To Access Full-Text Information



Source: Appendix K, Question II.12

Table 74: Depository Library Use of Alternative Media for Full-Text Dissemination Survey

Preferred Media for Receiving Full Text (Overall Average Preferences*)
(Question II.12†)

	Average Preference for Libraries Which Receive DOE Full-Text Reports	Average Preference for All Other Libraries	Average Preference for All Libraries Stating a Preference
Electronic Environment			
Personal Computer (PC)— (Stand alone)	2.91	2.99	2.96
PC Local Area Network (LAN)	2.96	2.91	2.93
Remote networks/Computers	2.45	2.41	2.42
Nonelectronic environment	2.47	2.67	2.58
Mainframe/Minicomputer	2.52	2.42	2.46
Media			
Other	3.40	3.73	3.57
Compact discs	3.12	3.07	3.09
Paper	2.70	2.85	2.79
Optical disc platters	2.19	2.27	2.24
Magnetic tape	2.12	2.16	2.14
Floppy disks	2.10	2.14	2.12
Microfiche/Microform	2.21	2.06	2.12

*Method: Average overall preferences for each medium were calculated using the following scale: Very greatly prefer = 4, Greatly prefer = 3, Moderately prefer = 2, and Somewhat prefer = 1.

†Question II.12: All considerations of cost and presently planned acquisitions aside, please indicate on which of the following environments and media your library *prefers* to access full-text information.

Summary of General Library Comments

In addition to the comments and explanations provided by libraries pertaining to specific survey questions, general library comments and suggestions related to the dissemination of full-text information were

requested in open-ended questions at the end of both parts of the survey (Appendix K, Questions I.16 and II.13). Comments related to key issues concerning full-text dissemination have been grouped and tabulated in Appendix M. These tables have been referred to throughout the sections describing the findings of the survey where appropriate. The following paragraphs highlight comments received concerning the use of various media for full-text dissemination.

The largest number of general comments received about a given medium (109) concerned the use of compact discs for full-text dissemination. The most frequently made comment about this medium (by 14 libraries) was that CD-ROM products must be user friendly and easy to install and use. The next most frequent comment made (by 12 libraries) was that government CD-ROM products have poor user interfaces, poor search software, and poor user support. Comments noting the ease of use or user friendliness of CD-ROM products comprise 30% (33 of the 109) of all the comments received about this medium. Negative comments about compact discs included inadequate search software for some products, cost, and concerns about archival quality.

The media receiving the next highest number of general comments were paper and microfiche (39 comments each). Over half of the comments received on the use of paper for full-text dissemination stated that users prefer paper to other media. Negative comments about paper were concerned with the space requirements and associated costs of storing paper documents.

Over 20% of the 39 libraries making comments on the use of microfiche stated that they have no problem with the dissemination of full text on this medium. The next most frequently made comment in this category (by 13% of the 39 libraries) was that microfiche is used because of storage/space problems. Other positive comments concerned the ease of using fiche for distribution and replacement of documents and cost savings. Negative comments about microfiche mostly noted inconvenience, user resistance, and poor quality of microfiche/reproductions.

The most frequently made comment concerning the use of online networks for full-text information (by 32% of the 22 libraries making this type of comment) was that cost of access is a great concern. Hardware/software limitations and lack of use were other concerns. Positive comments concerning the use of online/remote networks for full text included not having to store documents locally and ease of access.

Ten comments were received related to the use of optical discs for full-text dissemination. Of these, only one expressed a definite preference for this medium, stating that optical discs are better than CD-ROM for large full-text databases. The other comments focused on lack of equipment and other resources for use of this medium and concerns about the archival capabilities and quality of optical discs.

In addition to the comments concerning various media, libraries provided comments on a number of issues related to the dissemination and use of full-text information. Issues for which at least 20 comments each were received were bibliography/indexing and search/retrieval capabilities, cost/budget, equipment, software, user friendliness, and storage/space requirements for full-text information. These comments are listed in individual tables in Appendix M.

Assessment of Alternative Media for Dissemination of Full-Text Information

As part of Component II of the Pilot Project, OSTI conducted an assessment of the feasibility of disseminating DOE full-text information on electronic media. The full analysis is contained in Appendix N.

Most of the DOE technical reports currently being received by depository libraries are in the form of printed documents or microfiche. Electronic dissemination of these reports would require that organizations providing reports to DOE transfer data in digital form or that DOE acquire technology to scan more than 2.7 million pages per year either in-house or through a contractor. In the future, the availability of high-speed telecommunications via the national fiber-optic network will make it practical to transmit such large segments of full-text data electronically. The ability to receive these reports from their originators in electronic form would largely eliminate the need for scanning operations.

A further consideration is the fact that many of the reports include graphic or pictorial data that are absolutely necessary to the intellectual content of the document. In some cases the text would be of little use without the related graphic or pictorial data. This incorporates another level of complexity: the need to combine text and non-text data, a process known as imaging.

To incorporate image data even at a very low resolution requires significant space for the storage of the bitmap generated by a scanner. Imaging also adds a level of complexity to the search and retrieval software, as hyperlinks are required to associate the analog bitmaps with the digital text data so that both may be retrieved and displayed together.

This requirement for enormous data storage capability on any given distribution medium is the driving factor in full-text dissemination. It would be possible to reduce the need to physically distribute such enormous sets of data if a single source for access to full-text documents were provided through an online interface that could be used to rapidly retrieve full-text data in a cost-effective manner.

Such a system would allow the user to review the data on a terminal or download the data from the source to their local system for further processing. This capability does not yet exist; however, the advent of fiber-optic communications makes high-speed data transmission more and more available as networks are installed across the country. Improved speed and reduced cost will tend to make online systems more appealing to users and will reduce (but not eliminate) the need for a physical distribution process.

Much of the analysis of alternative media focused on the possibility of disseminating full-text information on CD-ROM. The CD-ROM format requires less space, cannot be damaged as easily as microfiche or paper, can use Boolean-type search capabilities, and has rapid query response. The CD-ROM format can also incorporate both text and image data.

Although technologies for storing and retrieving full-text information on CD-ROM currently exist, they have rarely been applied to a task as large as 30.5 GB of data (for a combination of ASCII and image format at 200 dpi) to 90 GB (for image format only at 200 dpi) annually. While this is a "worst case" figure, it is not unrealistic. Considering the enormity of such a full-text project, it would probably be better to enter the CD-ROM production arena on a smaller scale and allow the CD-ROM technology and fiber-optic communications to evolve to a state in which large quantities of data can be readily accessed and rapidly transferred.

A realistic short-term goal might be to produce a CD-ROM containing a twelve month-plus window of DOE STI abstracts rather than full text. This set of data could easily be loaded onto a single CD-ROM, including indices for searching. The abstract CD-ROM would essentially provide an

index into the microfiche file, based on the abstract number, and would help resolve the difficulty of locating desired data within the microfiche file.

It should be noted that not all media authorities are in agreement regarding the life expectancy of optical media in their present form. Estimates of the archival life span of CD-ROM products range from five to one hundred years. This is reminiscent of the arguments heard thirty to forty years ago concerning the life expectancy of microfilm. Only time will provide the answer to the question of the longevity of optical media.

When users are able to access an online system that provides the capability to perform search and retrieval operations on full-text data, including the ability to actually download selected full-text data to their local system for further analysis and processing, the requirement for distribution services in other media will diminish. However, this capability is an issue for the future. In the meantime, an index CD-ROM accompanying microfiche shipments would provide enhanced access to the libraries' existing stores of full-text information.

Summary—Component II

This section is intended to summarize for the reader some of the primary findings of Component II. Note that stated percentages are based on the number of libraries which responded to each individual question and do not necessarily represent the percentage of all 1,064 libraries responding to the survey.

DOE microfiche are physically located in the main library of 85% of libraries that receive DOE reports on microfiche. Both microfiche and paper are filed by Dewey Decimal, SuDocs, or some other classification system by over 90% of libraries listing one or more filing methods. Patrons or librarians at approximately 45% of libraries had experienced significant difficulties in accessing full-text information. The three most frequently cited access difficulties were that (1) patrons dislike the microfiche format, (2) patrons are not aware of the availability of information on microfiche, and (3) patrons have difficulty locating the information on microfiche.

Over 98% of libraries currently use microcomputers/personal computers. Usage of compact discs was reported by 91% of libraries, with 97% planning to use this technology within 3 years. Over 85% of libraries did not own or use optical discs for any purpose, and only 32% planned to use this technology within 3 years. The type of CD-ROM equipment owned or accessed by the highest percentage of libraries was multiple stand-alone CD workstations.

The responding libraries make extensive use of networks, particularly network access systems such as Internet, TYMNET, and Sprintnet. Workstations with modems are used to access remote computers by 88% of libraries.

Microfiche is the primary method currently used by libraries to acquire full-text information (used by 91% of libraries), followed by paper (89%) and compact discs (71%). More libraries reported that they will add the usage of compact discs for acquiring full text more than any other medium for acquiring full text.

Ease of retrieval of information was the most important factor to the libraries in selecting a storage/access medium and user interface for accessing full-text information. Costs, including purchase and maintenance costs, were also an important factor.

Responding libraries in general preferred compact discs more than any other medium for accessing full-text information. The preferred environment for accessing full-text was on a personal computer, either stand-alone or connected to a local area network.

Libraries that receive DOE full-text reports on microfiche would prefer to receive these reports on compact disc more than any other medium. Magnetic tape was the least preferred medium for receiving these reports.

In assessing the feasibility of disseminating DOE full-text information on some medium other than microfiche, this study found that the volume of technical reports issued each year makes it extremely problematic to generate a cost-effective replacement for microfiche. Since most of the technical reports currently submitted to OSTI are in paper format, electronic dissemination of these reports would require scanning and storing in digital form more than an estimated 2.7 million pages per year. In addition, disseminating these reports to Depository Libraries on the their preferred medium, compact discs, would generate approximately four new discs per week. Therefore, a more feasible alternative might be to produce a searchable CD-ROM containing a 12 month-plus window of abstracts, rather than the full text of the DOE reports. This CD-ROM would enhance access to the information contained on microfiche, and could be created from existing electronic files of bibliographic information.

DISSEMINATION MEDIA COST ANALYSIS

During 1992 the United States Department of Energy (DOE), Office of Scientific and Technical Information (OSTI) made distribution of nearly 14,000 (13,914) research and development reports in varying quantities to 225 Depository Libraries. Distribution was made in the form of microfiche. A monthly publication in bibliographic format, *Energy Research Abstracts (ERA)*, is provided as an index to the report literature acquired by OSTI, and, in particular, the DOE microfiche file. *ERA* subscription includes an annual index.

An objective of the GPO/DOE Pilot Project was to provide a cost analysis of at least one viable alternative technology compared to the cost of disseminating the same quantity of information in the form of microfiche to the Depository Libraries. A technology assessment, a discussion of currently available electronic media that could be considered for dissemination purposes, is provided as a separate appendix within this report.

Charts 1 and 2 on the following pages compare dissemination costs for providing bibliographic and full-text data to the Depository Libraries within the context of the applicable footnotes. It should be noted that provision of the following data does not indicate that these products are currently available, nor does it constitute a commitment on the part of DOE to produce such products. The analysis and actual production of CD-ROM discs were beyond the scope of the study; therefore the costs provided below are based on currently available data for commercial replication and distribution activities.

The following comparisons include data related to CD-ROM replication and distribution. It should be noted at this point that the CD-ROM cost estimates included in this analysis are based on a very simplistic design for the data contained on a CD-ROM. The study assumes that (1) each CD-ROM disc will be a stand-alone product, each with its own unique indexing capability; (2) information is stored on the CD-ROM in image format; and (3) search and retrieval software will be resident on each disc.

There are many different scenarios that could be examined or implemented in the design of a CD-ROM product. The Pilot Project did not include provision for the analysis and selection of the most economically feasible CD-ROM product design and implementation. Certain of these scenarios could conceivably provide significant cost savings, particularly in the area of software licensing; however, this is outside the scope of the Project.

Full-Text Data: Microfiche vs. CD-ROM

Chart 1 compares the actual replication and distribution costs of full-text reports in microfiche form with the estimated cost of replication and distribution of similar data utilizing the CD-ROM medium. In this case the term "replication" implies that OSTI is reproducing an existing product for distribution to the Depository Libraries. These costs do not include the cost of the acquisition of the data, its evaluation, initial microfilming, or storage. Similarly, the estimated costs for replication and

distribution of the full-text CD-ROM product do not include the cost of acquisition of the data, its evaluation, its storage, and the preparation for and actual production of the CD-ROM master disc from which the distribution copies are made.

Chart 1

	Microfiche	CD-ROM
Full Text	$375,500 (Footnote 1)	$657,540 (Footnote 2)

Calculation of Costs of Full-Text CD-ROM

Of the 14,000 technical reports OSTI distributed to the Depository Libraries during 1992, not all libraries received all reports. OSTI's user profile system determined which reports to reproduce on microfiche and distribute, by customer. If a CD-ROM distribution were to be established, all technical reports would be loaded onto a CD-ROM master from which the distribution copies would be made. All Depository Libraries choosing to receive DOE reports would receive the full distribution.

Using 14,000 reports per year as a base figure, an average of 270 reports per week can be assumed, based on the following calculation:

14,000 reports ÷ 52 weeks per year = 270 reports per week (average)

The technical analysis of possible alternative distribution media indicates that, based on an average of 1.4 microfiche per report and 98 frames to a microfiche, there are approximately 138 pages in an average technical report. With this information it can be shown that weekly processing includes approximately 37,260 pages:

270 reports per week × 138 pages per report (average) = 37,260 pages per week

Appendix N of this report, "Technology Assessment of Alternative Media for Full-Text Delivery," provides a series of calculations concerning data storage requirements. The calculations within Appendix N are based on a resolution of 200 dots per inch (dpi), and indicate a storage requirement of 46,500 characters (or bytes) for a single 8.5 inch by 11 inch page.

This figure has been used for the following calculations to provide consistency among the figures found in Appendix N and the cost analysis. It should be noted that changes in data scanning resolution will have a significant impact on the number of compact discs required to store the same quantity of full-text data. This in turn will have a proportionate impact on replication, handling, and mailing costs.

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[1]Based on annual distribution for 225 Depository Libraries currently receiving DOE microfiche if all libraries received all reports. The estimated full-text microfiche costs include replication costs of $142,000, handling costs of $166,500, and mailing costs of $67,000.

[2]Based on annual distribution of CD-ROM media to the 225 Depository Libraries currently receiving DOE microfiche. The estimated costs include replication, handling, software licensing, and mailing. Note that this estimate is based on an imaging resolution of 200 dpi.

At a relatively low resolution of 200 dpi (Footnote 3), the average page will require approximately 46,500 (Footnote 4) bytes of storage as a raster image. Using this information and the estimated number of pages per week it is possible to calculate the total number of bytes of storage required for an average week:

37,260 pages × 46,500 bytes per page = 1,732,590,000 bytes per week

A CD-ROM disc is capable of storing as many as 660 megabytes (MB) of data on a single disc. However, the indexes necessary to access the data stored on the disc require a significant amount of storage space. For the purpose of this estimation process we will assume that 220 MB of each disc are required for the indexes, leaving 440 MB of data storage. Using this information and the estimated number of bytes which must be stored each week, it is possible to estimate the number of discs required per week, as follows:

1,732,590,000 bytes ÷ 440 MB of storage per disc = 4 CDs per week

The estimated four compact discs represent a single set that would serve a single Depository Library. There are 225 Depository Libraries currently receiving microfiche distribution; therefore, it would be necessary to produce 225 sets of these compact discs, a total of 900:

4 CDs × 225 Depository Libraries = 900 CDs produced per week

Current replication costs for a CD-ROM, including the jewel box and poly wrap, are approximately $3.50 per disc (Footnote 5) for quantities less than 250. It is assumed that as many as 75 additional customers would be receiving these CD-ROM products, increasing required CD-ROM production from 225 to 300 sets of these discs. When reproduction levels for a single master disc exceed 250 copies, reproduction costs are reduced from $3.50 per disc to $2.50. Therefore the weekly replication costs would be $2,250:

900 CDs × $2.50 replication and packaging fee = $2,250 per week

Indexes placed on the CD-ROM must have software available to read the index and to retrieve the data from the disc. This software is licensed individually for each disc. License prices may vary, but for the purpose of this process a licensing cost of $10 per disc is assumed. At this rate the licensing cost for 900 discs will be $9,000:

900 CDs × $10.00 estimated software licensing cost per CD = $9,000 per week

Adding the total replication and packaging costs to the licensing costs, the total weekly costs to produce the CD-ROM product comes to $11,250:

$2,250 production costs + $9,000 licensing cost = $11,250 per week

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[3]Note that 200 dpi is a relatively low resolution for raster images. Depending on the data, it may be necessary to increase the resolution to 300 dpi. Such a change in resolution will result in a significant increase in the number of discs required to store the same quantity of data, with a proportionate increase in replication, handling, and mailing costs.

[4]This figure is based on calculations provided in Appendix N, "Technology Assessment of Alternative Media for Full-Text Delivery."

[5]Based on pricing data provided by Optical Media International, Los Gatos, CA, March 18, 1993.

Shipping and handling costs are estimated at $1.55 per disc, a total expense of $1,395 per week.

900 CDs × 1.55 shipping and handling costs = $1,395 per week

When the total weekly production costs are combined with the shipping and handling costs, the total weekly cost to produce and disseminate the CD-ROM product is $12,645:

$11,250 + $1,395 = $12,645 total cost per week

The total estimated CD-ROM dissemination cost for a year is then $657,540:

$12,645 total cost per week × 52 weeks = $657,540 total cost per year

Bibliographic Data: Paper vs. CD-ROM

Chart 2 compares the replication and distribution costs of the *ERA* publication for 473 Depository Libraries with the estimated replication and distribution costs of the same data utilizing a CD-ROM medium. This comparison is included because this was the recommendation of the "Technology Assessment of Alternative Media for Full-Text Delivery" (Appendix N).

Chart 2

	Paper	CD-ROM
Bibliographic Data	$298,000 (Footnote 6)	$86,411 (Footnote 7)

In this table the value $298,000 represents the estimated costs of duplication, binding, and shipping the *Energy Research Abstracts (ERA)* publication to 473 Depository Libraries. This cost does not include the cost of acquiring, evaluating, processing, and storing the data. This value is simply the cost of providing an existing product to multiple consumers.

Calculation of Costs of *ERA* Bibliographic CD-ROM

ERA is published monthly and distributed to 473 Depository Libraries. *ERA* provides bibliographic information concerning available scientific and technical reports, and provides an index into the DOE microfiche file being provided to some libraries.

Based on historical publication data, the average size of an *ERA* issue is 795 pages. From this information, the storage required for the average monthly issue can be estimated at 36.9 MB, as follows:

795 pages × 46,500 bytes per page = 36,967,500 bytes per month

[6]GPO override printing and estimated distribution and mailing costs for *ERA* to 473 libraries for one year. These estimated costs include reproduction costs of $264,000, handling costs of $10,000, and mailing costs of $24,000.

[7]GPO override replication, handling, software license, and mailing cost for *ERA* on CD-ROM for 473 libraries for one year.

The following calculation indicates that at a low resolution of 200 dpi, a monthly issue of *ERA* would only use approximately 8% of a CD-ROM disc. The remaining space on this disc could be used for other purposes. It should also be noted that the calculations being used in this evaluation are based on raster images, which are a worst-case estimate since raster images require significantly more storage space than do ASCII data.

36,967,500 bytes ÷ 440 MB of storage per disc = 0.08401 CD

Since only one CD is required for the monthly distribution of *ERA*, the total distribution to 473 Depository Libraries for a single month will require 473 CD-ROM discs:

1 CD × 473 Depository Libraries = 473 CDs

At currently available commercial rates (March 1993), replication costs for 473 CD-ROM discs, including jewel boxes and poly wrap, will cost approximately $1,183 per month:

473 CDs × $2.50 replication and packaging fee = $1,183 per month

Software licensing costs for 473 CD-ROM discs at $10 per disc will cost approximately $4,730 per month:

473 CDs × $10.00 estimated software licensing cost per CD = $4,730

Total production costs for 473 CD-ROM discs will be approximately $5,913 per month:

$1,183 replication costs + $4,730 licensing cost = $5,913

It is estimated that shipping and handling costs will average $1.55 per CD-ROM shipped. On the basis of this assumption, monthly shipping and handling costs will be approximately $734:

473 CDs × $1.55 handling and mailing costs = $734

Using the total production and mailing costs established in the preceding calculations, the total monthly cost for CD-ROM distribution of the *ERA* publication can be approximated as $6,647:

$5,913 production costs + $734 mailing costs = $6,647

The annual cost would then be $79,764 for distribution of twelve months of the *ERA* publication:

$6,647 total cost per month × 12 months = $79,764

Calculation of Costs of *ERA* Annual Index CD-ROM

The most recent *ERA* annual index consisted of 3,924 pages. The raster image storage requirement at a low resolution of 200 dpi for 3,924 pages is approximately 183 MB:

3,924 pages × 46,500 bytes per page = 182,466,000 bytes

The value 183 MB represents a storage requirement of approximately 42% of the available space on a CD-ROM disc:

182,466,000 bytes ÷ 440 MB of storage per disc = 0.41469 CD

The *ERA* annual index can be stored on a single CD-ROM disc. Since the distribution will include 473 Depository Libraries, it will be necessary to replicate 473 copies of the CD-ROM.

1 CD × 473 Depository Libraries = 473 CDs produced

The replication fee, including the jewel box and poly wrap, for 473 CD-ROM discs will be approximately $1,183:

473 CDs × $2.50 replication and packaging fee = $1,183

Licensing costs for 473 discs at $10 per disc will cost approximately $4,730:

473 CDs × $10.00 estimated software licensing cost per CD = $4,730

Total production costs are estimated by adding the total replication costs and the estimated licensing costs, a total amount of $5,913:

$1,183 replication costs + $4,730 licensing cost = $5,913

Shipping and handling costs for CD-ROMs are estimated at $1.55 per disc. For 473 discs this cost would be $734:

473 CDs × $1.55 shipping and handling costs = $734

Combining production costs and mailing costs, the total distribution costs for the annual *ERA* index can be estimated at $6,647:

$5,913 production costs + $734 mailing costs = $6,647

Estimated Total Annual *ERA* CD-ROM Distribution Costs

When the total annual costs for the distribution of the monthly *ERA* updates and the total cost for the distribution of the annual *ERA* index are combined, it can be estimated that the total annual cost for replication and distribution to the Depository Libraries of a full year of *ERA* publications would be $86,411, if such a product were to be produced:

$79,764 total *ERA* monthly costs + $6,647 total annual index cost = $86,411

Appendixes A–J

(Component I)

APPENDIX A

Package Sent to Depository Libraries Requesting Participation in the Pilot Project with Survey Results

United States Government Printing Office
Washington, DC 20402

ASSISTANT PUBLIC PRINTER
(Superintendent of Documents)

October 22, 1990

Dear Depository Librarian:

We are pleased to announce plans for a pilot project to evaluate ways to improve the dissemination of, access to, and utilization of Department of Energy (DOE) research results.

The GPO/DOE Pilot Project is one of five pilots being conducted to test electronic dissemination of information to depository libraries. This project consists of two interrelated components: "Information Access" and "Alternative Media for Full Text Delivery."

Under the "Information Access" (online) component, approximately 20 depository libraries will access the DOE Integrated Technical Information System (ITIS) for a period of six months, beginning February 1990. This includes:

* searching bibliographic and authority files resident on ITIS;

* using electronic mail;

* testing a gateway to DIALOG;

* testing a COSATI to MARC-like conversion utility for shared cataloging.

The second component, "Alternative Media for Full Text Delivery," will evaluate the feasibility of distributing the full text of DOE technical reports in electronic format.

This letter and accompanying materials provide a description of the "Information Access" component of the GPO/DOE Pilot Project. Additional details about ITIS may be found in the appendix to the enclosed information packet. A copy of the packet (except for the survey) has also been sent to your Library Director.

Page 2

Participation in the GPO/DOE Pilot Project is voluntary, and consideration as a test site is open to all depository libraries currently receiving DOE microfiche. Depository libraries that are chosen as test sites will be expected to commit resources, including travel expenses associated with training, some of the telecommunications fees, staff time, etc.

The enclosed survey is very important and should be completed whether or not you wish to be considered as a test site. The survey should be returned to the:

U.S. General Accounting Office
General Government Division
Mr. Thomas Beall
441 G Street NW., Room 3826
Washington, DC 20548

Surveys must be received by December 4, 1990, for libraries to be considered as test site candidates. A postage-paid envelope has been provided for your convenience.

If you have any questions about the materials contained in this package, please call Jane Bartlett at (202) 275-1003.

Thank you for your cooperation and support of this very important project.

Sincerely,

Donald E. Fossedal

DONALD E. FOSSEDAL
Superintendent of Documents

Enclosures (2)

U.S. GOVERNMENT PRINTING OFFICE

SURVEY OF DEPOSITORY LIBRARIES

GPO/DOE Pilot Project
Information Access Component

INTRODUCTION

The Government Printing Office (GPO) is conducting a survey of depository libraries that receive Department of Energy (DOE) microfiche to ascertain your interest in participating as a pilot project test site for the Information Access Component of the GPO/DOE Pilot Project. Libraries indicating a desire to participate will be considered as candidates from which 20 test sites will be chosen, as outlined in the accompanying materials.

Most of the questions can easily be answered by checking boxes, entering numbers, or providing brief narrative responses. Space has been provided for additional comments at the end of the questionnaire. If necessary, additional pages may be attached.

Even if your library is not interested in participating in this Pilot Project, please complete the appropriate items on the questionnaire. Information concerning your reasons for not participating is important in an overall assessment of the usefulness of online databases for the dissemination of government information to the depository libraries.

The questionnaire should take only about 15 minutes to complete. If your have any questions, please call Jane Bartlett at (202) 275-1003.

Please return the completed questionnaire in the enclosed pre-addressed envelope. Surveys must be received by December 4, 1990 for libraries to be considered as test site candidates. In the event the envelope is misplaced, the return address is:

U.S. General Accounting Office
General Government Division
Mr. Thomas Beall
441 G Street, N.W. Room 3826
Washington, D.C. 20548

Thank you for your cooperation.

NOTE: RESPONSES TO EACH QUESTION ARE SHOWN IN BRACKETS [ ] FOR ALL LIBRARIES RESPONDING TO THE SURVEY. RESPONSES FOR THE SEVENTEEN LIBRARIES ACTUALLY PARTICIPATING IN THE PILOT PROJECT ARE SHOWN IN PARENTHESES ( ).

PLEASE PROVIDE THE FOLLOWING INFORMATION:

Depository library number: 154 libraries responded

Library name: _____

Library mailing address: _____

_____

_____

_____

_____ _____ _____
(City) (State) (Zip Code)

Name and telephone number of person completing questionnaire or other contact person:

_____
(Name)

_____ _____
(Area code) (Number)

1. Is your library a selective or regional depository library (CHECK ONE.)

   1. [ ] Selective depository library [117] (8)

   2. [ ] Regional depository library [37] (9)

2. Which of the items below best describes the size of your library (depository and non-depository materials)? (CHECK ONE.)

   1. [ ] Over 600,000 volumes [111] (16)

   2. [ ] Between 150,000–600,000 volumes [38] (1)

   3. [ ] 150,000 volumes or fewer [5] (0)

3. Which of the items below best describes your library? (CHECK ONE.)

1. [ ] Academic library [124] (14)
2. [ ] Court library [1] (0)
3. [ ] Federal agency library [1] (0)
4. [ ] Law school library [0] (0)
5. [ ] Public library [14] (2)
6. [ ] State agency library [11] (1)
7. [ ] Other (please specify) [0] (0)
   Did not answer [3]

4. In which of the following time zones is the library located? (CHECK ONE.)

1. [ ] Eastern [60] (6)
2. [ ] Central [51] (6)
3. [ ] Mountain [20] (4)
4. [ ] Pacific [18] (1)
5. [ ] Other (please specify) [3] (0)
   Did not answer [2]

STOP . . . . . .

BEFORE COMPLETING THE REMAINDER OF THIS QUESTIONNAIRE, PLEASE READ THE INFORMATION PACKET CONCERNING THE REQUIREMENTS FOR PARTICIPATING IN THE GPO/DOE PILOT PROJECT. THE SIGNATURES OF THE LIBRARIAN AND LIBRARY DIRECTOR ARE REQUESTED IN ITEM 10 FOR THOSE LIBRARIES APPLYING FOR CONSIDERATION AS A PARTICIPANT FOR THE PILOT PROJECT.

5. Does your library wish to be considered as a candidate for the pilot project? (CHECK ONE.)

1. [ ] Yes [19] (17)
2. [ ] No (SKIP TO QUESTION 8.) [135] (0)

6. How interested are you in each of the follow features:

	Very Interested	Moderately Interested	Slightly Interested	Not Interested at all	Did Not Answer
Access to EDB on ITIS	(15) [17]	(2) [2]	(0) [0]	(0) [0]	[0] (0)
Searching Authority Files	(7) [9]	(6) [6]	(2) [2]	(1) [1]	[1] (1)
Electronic Mail	(9) [9]	(7) [7]	(1) [3]	(0) [0]	[0] (0)
ITIS Gateway	(10) [10]	(6) [8]	(1) [1]	(0) [0]	[0] (0)
Shared Cataloging	(10) [12]	(4) [4]	(2) [2]	(1) [1]	[0] (0)

STOP . . . . . .

BEFORE RESPONDING TO QUESTION 7, PLEASE REVIEW THE INFORMATION PACKET SECTION IV. TEST SITE SELECTION.

7. Please describe below any special circumstances, conditions, or plans associated with your library's desire to participate in the pilot project. (INCLUDE ANY ATTACHMENTS).

SKIP TO 9

8. Which of the following reasons, if any, describes why your library does not wish to be considered as a candidate for the pilot project? (CHECK ALL THAT APPLY).

1. [ ] Do not have equipment to access ITIS [14]

2. [ ] Do not have funds to support telecommunications costs [30]

3. [ ] Do not have staff resources available to support this information service [83]

4. [ ] Do not believe that there would be sufficient library user demand for energy information to warrant project participation [68]

5. [ ] Do not wish to institute a service that might be discontinued at the end of the pilot project period [50]

6. [ ] Do not have funds to support travel costs associated with staff training [64]

7. [ ] Do not have online catalog [30]

8. [ ] Do not have account on DIALOG [5]

9. [ ] Do not have local ADP support [25]

10. [ ] Do not have ability to establish deposit account [6]

11. [ ] Cannot accommodate proposed project schedule [21]

12. [ ] Cannot obtain required review/approval in time allowed for response [13]

13. [ ] Other (please specify) [17]
Did not answer [0]

9. If you have any additional comments regarding any previous question or general comments concerning the GPO/ DOE Pilot Project, please use the space provided below.

---

10. If you answered "Yes" to question 5, indicating that the library wishes to be considered as a participant in the pilot project, please have the following statement signed.

I have read the information contained in the Information Packet and agree to fulfill the administrative responsibilities of a pilot project participant.

_____ _____

(Librarian) (Date)

_____ _____

(Library Director) (Date)

APPENDIX B

Participating Depository Libraries

Cleveland Public Library
Cleveland, Ohio

College of William & Mary
Swem Library
Williamsburg, Virginia

Denver Public Library
Denver, Colorado

Eastern Washington University*
John F. Kennedy Memorial Library
Cheney, Washington

Emporia State University
William Allen White Library
Emporia, Kansas

Louisiana State University
Louisiana State University Libraries
Baton Rouge, Louisiana

Oklahoma Department of Libraries
Oklahoma City, Oklahoma

Rice University
Fondren Library
Houston, Texas

Texas A&M University
Sterling C. Evans Library
College Station, Texas

University of Colorado, Boulder
Government Publications Library
Boulder, Colorado

University of Kentucky
University of Kentucky Libraries
Lexington, Kentucky

University of Massachusetts
University Library
Amherst, Massachusetts

University of Minnesota
Government Publications Library
Minneapolis, Minnesota

University of New Mexico
University of New Mexico General Library
Albuquerque, New Mexico

University of Tennessee, Knoxville
John C. Hodges Library
Knoxville, Tennessee

Utah State University
Merrill Library
Logan, Utah

West Virginia University
West Virginia University Evansdale Library
Morgantown, West Virginia

*Did not participate after initial training.

APPENDIX C

Depository Library Use of DOE Microfiche Questionnaire with Results

The U.S. Government Printing Office (GPO) and the U.S. Department of Energy Office of Scientific and Technical Information (OSTI) are conducting a pilot project to evaluate the usefulness of OSTI products and services in delivering scientific and technical information (STI) to your patrons. As one of the sites selected to participate in this project, your library will be asked to complete a series of questionnaires designed to determine the value to you of the capabilities you have been provided with for the duration of the project.

This questionnaire will establish baseline information that will be used to evaluate the success of the project. The questionnaire should take between 45 minutes and 1 hour to complete. To the extent possible, please respond to the questions based on your operation **PRIOR TO THE BEGINNING OF THE PILOT PROJECT.**

Please return the questionnaire to OSTI in the enclosed postage-paid envelope by April 26. If you prefer, you may return the questionnaire by facsimile to (615) 576-2865. Your cooperation is important, and will help OSTI evaluate its dissemination program. If you need additional information on this study, or if you have any questions, please contact Amy Finnerty of OSTI at (615) 576-6800.

Thank you for your participation.

A. LIBRARY INFORMATION:

Depository Library Number: [16 libraries responded to this survey]
Library Name: _____

Name, position, address, and telephone number of person completing this questionnaire or other contact person:

Name: _____
Position: _____
Telephone: _____
Address: _____
_____
_____

(City) (State) (Zip code)

B. FILING MICROFICHE:

1. Where are DOE microfiche physically located? (If located in a branch library, please specify the specialty of the branch, i.e., engineering). CHECK ONE:

1. [11] Main library
2. [5] Branch library (Specify [5 responses])
3. [0] Dispersed among several locations (Specify 0)
4. [0] Other (Specify 0)
5. [0] Not sure

Did not answer [0].

2.a How accessible are DOE microfiche to patrons? CHECK ONE:

1. [12] Very accessible
2. [2] Somewhat accessible
3. [0] Not sure
4. [1] Somewhat inaccessible
5. [1] Not at all accessible

Did not answer [0].

2.b For each question, please place a check in the column under the answer that that best describes the accessibility of DOE microfiche in your library. CHECK ONLY ONE ANSWER FOR EACH QUESTION:

	Yes	No	Somewhat/ Sometimes	Not Sure	Did Not Answer
1. Are staff available to assist patrons in accessing microfiche?	15	0	1	0	[0]
2. Are microfiche readers/printers located in the microfiche area?	13	1	2	0	[0]
3. Are patrons allowed to browse the fiche collection?	13	3	0	0	[0]
4. Is the microfiche area open the same number of hours that the library is open?	14	2	0	0	[0]
5. Is the index located in the microfiche area?	8	7	1	0	[0]

3. How are your filing systems for microfiche and paper copies of DOE reports organized? CHECK ALL THAT APPLY, MARKING AT LEAST ONE BOX IN EACH COLUMN:

	Microfiche	Paper Copy
1. By subject heading	0	2
2. By date of receipt	0	0
3. By fiche shipment number	0	0
4. By DOE report number	10	4
5. By DE number	2	0
6. By SuDocs call number	8	11
7. Other filing method (Specify [2 responses (paper)])	0	2
8. Don't receive	0	2
9. Don't file	0	0
10. Don't know/not sure	0	0
	Did not answer [0].	Did not answer [1].

4. What type of equipment, if any, is available at your library for filing and storing microfiche? CHECK ALL THAT APPLY:

1. [16] Microfiche files or drawers
2. [0] Lektriever or other automated equipment
3. [2] Boxes
4. [0] Other (Specify [0 responses])
5. [0] No equipment is available for filing and storing microfiche

Did not answer [0].

5. Please place a check under the column that best describes your library's procedure for retrieving or re-filing microfiche. CHECK ONLY ONE BOX ON EACH ROW:

	Library Staff Only	Staff and Patrons	Patrons Only	Don't Know	Did Not Answer
Who usually retrieves microfiche?	2	14	0	0	[0]
Who usually re-files microfiche?	16	0	0	0	[0]

6. **Has your library experienced any problems with missing or mis-filed fiche attributable to the procedures for retrieving or re-filing? CHECK ONE:**

1. [0] Major problems
2. [12] Minor problems
3. [3] No problems
4. [1] Not sure

Did not answer [0].

C. **REQUESTS FOR STI:**

7. **For Part (a), please refer to Attachment A, "Subject Categories in DOE Energy," at the end of the questionnaire. During the past year, approximately how many collective requests for scientific and technical information (STI) related to these subject categories did your library typically receive in a week?**

For Part (b), please indicate average number of times per week you access DOE fiche to satisfy the requests you listed in part (a). If your response for either part (a) or part (b) is greater than 25, please write the approximate number in the box for the appropriate column. CHECK ONE RESPONSE IN EACH COLUMN:

	(a) Average weekly number of requests for STI	(b) Average times per week DOE fiche are accessed
Not applicable	0	0
Less than 5	3	6
5 to 10	2	4
11-15	0	4
16-20	2	0
21-25	3	1
More than 25 (Specify number of times)	4	0
Don't know	2	1
Did not answer	[0]	[0]

8.a **When you receive requests for STI in the subject categories referenced in Attachment A, about what percentage of the time do patrons actually request specific time periods? ENTER PERCENTAGES (0 TO 100%) TO TOTAL 100%:**

1. [25.42] % of the time requesters specify time periods. H=90 L=5
2. [74.58] % of the time requesters do not specify time periods. H=95 L=10

100 % Average values

3. [2] Not sure/no basis to respond.

Did not answer [2].

20% median
80% values
100%

8.b **For those requests you receive that do specify a time period, about how often is each period usually specified? CHECK ONE BOX IN EACH ROW:**

	Very Often	Often	Some-times	Rarely	Almost Never	Not Sure	Did Not Answer
1. Documents less than one year old	4	7	2	2	0	0	[0]
2. Documents published in past 1-5 years	5	7	2	0	0	0	[1]
3. Documents published in past 6-10 years	0	3	7	4	1	0	[0]
4. Documents published over 10 years ago	0	0	6	5	4	0	[0]

Did not answer [1].

9.a About how often do you search each of the following sources to find information concerning requests for this STI? CHECK ONE BOX IN EACH ROW:

	Always/ Almost Always	Often	Some-times	Rarely	Never/ Almost Never	Not Sure	No Access/ Don't Own	Did Not Answer
1. Energy Research Abstracts/ERA	3	2	9	0	1	0	0	[1]
2. DOE Energy on DIALOG	0	1	10	3	1	0	1	[0]
3. NTIS on DIALOG	1	2	9	2	1	0	0	[1]
4. NSA on DIALOG	0	0	1	4	8	1	1	[1]
5. DOE Energy on STN	0	0	2	3	6	0	4	[1]
6. EDB on ITIS	0	1	6	3	2	0	4	[0]
7. In-house online catalog	6	3	4	0	1	0	1	[1]
8. NTIS on CD-ROM	3	0	1	0	0	0	11	[1]
9. GPO Monthly Catalog (CD-ROM)	0	4	5	0	0	1	5	[1]
10. GPO Monthly Catalog (fiche)	0	0	1	1	4	0	9	[1]
11. GPO Monthly Catalog (paper)	1	1	6	3	2	1	1	[1]
12. Government Reports Announcement & Index-GRA&I	4	2	7	2	1	0	0	[0]
13. Other CD-ROM ([6 responses])	1	3	2	0	0	0	3	[7]
14. Other (Specify [4 responses])	1	3	0	0	0	0	2	[10]

D. ACCESSING MICROFICHE:

9.b Of the sources you checked in 9.a, about how often do each of the following sources lead you or your patrons to the DOE microfiche collection? CHECK ONE BOX IN EACH ROW:

	Always/ Almost Always	Often	Some-times	Rarely	Never/ Almost Never	Not Sure	No Access/ Don't Own	Did Not Answer
1. Energy Research Abstracts/ERA	7	6	1	0	1	0	0	[1]
2. DOE Energy on DIALOG	6	5	3	1	1	0	0	[0]
3. NTIS on DIALOG	1	3	11	0	0	0	0	[1]
4. NSA on DIALOG	0	1	2	5	4	2	1	[1]
5. DOE Energy on STN	1	3	0	1	4	1	5	[1]
6. EDB on ITIS	3	2	3	2	1	0	4	[1]
7. In-house online catalog	2	2	4	3	4	0	1	[0]
8. NTIS on CD-ROM	2	0	1	0	0	0	11	[2]
9. GPO Monthly Catalog (CD-ROM)	0	2	7	0	0	1	4	[2]
10. GPO Monthly Catalog (fiche)	0	0	2	0	4	0	8	[2]
11. GPO Monthly Catalog (paper)	0	2	3	3	3	2	1	[2]
12. Government Reports Announcement & Index-GRA&I	3	3	5	5	0	0	0	[0]
13. Other CD-ROM ([5 responses])	0	2	0	0	3	1	2	[8]
14. Other (Specify [4 responses])	0	1	3	0	0	0	1	[11]

10. How often do each of the following types of requests lead you or your patrons to access the DOE fiche collection? CHECK ONE BOX IN EACH ROW:

	Always/ Almost Always	Often	Some-times	Rarely	Never/ Almost Never	Not Sure	Did Not Answer
1. Specific DOE report number identified from a printed source	7	7	1	1	0	0	[0]
2. Specific DOE report number identified from an online source	6	4	5	1	0	0	[0]
3. Other report identification from a printed source	1	6	6	1	1	1	[0]
4. Other report identification from an online source	1	4	5	3	2	1	[0]
5. Subject browsing of collection using fiche subject headers	0	0	1	4	11	0	[0]
6. Subject queries leading to use of ERA or online source	1	7	3	3	1	1	[0]
7. Other (Specify [0 responses])	0	0	0	0	0	1	[15]

11. When patrons request a specific DOE report, how often have they used the following sources to identify information about the report? CHECK ONE BOX IN EACH ROW:

	Always/ Almost Always	Often	Some-times	Rarely	Never/ Almost Never	Not Sure	Did Not Answer
1. Printed source (i.e. ERA, GRA&I, etc.)	2	8	3	3	0	0	[0]
2. Online source (i.e. DIALOG, STN)	1	5	8	2	0	0	[0]
3. CD-ROM such as NTIS	2	2	4	0	7	0	[1]
4. Word of mouth	0	1	4	5	4	1	[1]
5. Other (Specify [5 responses])	0	5	0	0	0	1	[10]

12. When reviewing DOE reports on microfiche do library patrons usually (CHECK ALL THAT APPLY):

1. [6] Use the fiche reader without printing any pages/records.
2. [11] Use the fiche printer to print specific pages or references.
3. [8] Use the fiche reader and then request a print out of the entire report if it is relevant.
4. [3] Print the entire report without previewing it on the fiche reader.
5. [1] Skip any references that are contained on microfiche.
6. [3] Other (Specify [3 responses])
7. [2] Not sure/no basis to respond.

Did not answer [1].

13. After a shipment of microfiche is received by the library, how soon are DOE microfiche made physically available (i.e. retrievable) and bibliographically available (i.e. announced or available to patrons in an index) to patrons? CHECK ONE BOX ON EACH ROW:

	Less than 1 Day	Within 1-2 Days	Within a Week	Within 2 Weeks	Within a Month	Longer than 1 Month	Not Sure	Did Not Answer
1. Physically available	0	3	5	3	3	1	0	[1]
2. Bibliographically available	0	0	3	1	2	2	8	[0]

14. How are online searches for library patrons typically funded? CHECK ONE:

1. [2] The library always pays the full cost.
2. [3] The patron always pays the full cost.
3. [0] The library and the patron each pay part of the cost.
   ([0 responses] % paid by library/ [0 responses] % paid by patron)
4. [3] Depends on who the patron is. (Explain [3 responses])
5. [5] Depends on the type of query. (Explain [5 responses])
6. [1] Other (Specify [1 response])
7. [0] Not sure/no basis to respond.

   Did not answer [2].

E. CATALOGING MICROFICHE:

15. On which media, if any, do you receive cataloging records for books, monographs, reports, etc.? CHECK ALL THAT APPLY:

1. [2] Floppy disks
2. [8] Online (download)
3. [2] Catalog card
4. [0] Computer printout
5. [13] Magnetic tape
6. [5] CD-ROM
7. [0] Other (Specify [0 responses])

   Did not answer [0].

16. Which media, if any, do you currently use to maintain your cataloging records (including those produced internally as well as those acquired from external sources)? CHECK ALL THAT APPLY:

1. [1] Personal computer or floppy disks
2. [14] Online catalog
3. [3] Card catalog
4. [1] Computer printout
5. [10] Magnetic tape
6. [3] CD-ROM
7. [1] Other (Specify [1 response])
8. [0] None

   Did not answer [0].

17. Which vendors do you use to obtain cataloging records for books and monographs? CHECK ALL THAT APPLY AND CIRCLE YOUR PREFERRED SOURCE, IF ANY:

1. [2] Library of Congress
2. [16] OCLC
3. [2] RLIN
4. [0] CARL
5. [5] Other (Specify [5 responses])

Preferred source = 5 responses (all OCLC).

Did not answer [0].

18. Do you anticipate using the same vendor(s) for cataloging records of technical reports? CHECK ONE:

1. [7] Yes
2. [4] No
3. [5] Not sure (Explain [4 responses])

Did not answer [0].

19. Which statement best describes your library's method of cataloging DOE fiche? CHECK ONE:

1. [2] We acquire cataloging from an external source only. (Go to question 21)
2. [1] We perform the cataloging internally only. (Go to question 22)
3. [0] We use both the external and internal methods. (Go to question 21)
4. [13] We do not catalog DOE microfiche. (Go to next question)

Did not answer [0].

20. If you do not currently catalog DOE fiche, please indicate why not. CHECK ALL THAT APPLY: [13 possible responses].

1. [8] Not enough time
2. [11] Not enough staff
3. [9] Too expensive
4. [2] Do not catalog any type of fiche
5. [7] Not enough demand for DOE fiche to justify the time/expense
6. [2] Other (Specify [2 responses])

(Go to question 24)

Did not answer [0].

21. Please list all external sources used to acquire cataloging records of DOE fiche: [2 possible responses].

Did not answer [0].

22. Is the DOE fiche catalog merged with the cataloging of the library's other collections? CHECK ONE: [3 possible responses].

1. [2] Yes (Go to question 24)
2. [1] No (Go to question 23)

Did not answer [0].

23. Why is separate cataloging maintained for DOE fiche? CHECK ALL THAT APPLY: [1 possible response].

1. [0] System cannot accommodate format
2. [0] Different forms and choice of author and corporate entries
3. [0] Different forms and choices of subject entries
4. [1] System cannot accommodate quantity
5. [0] Other (Specify [0 responses])

Did not answer [0].

F. MICROFICHE PROMOTION:

24. Which of the following do you use to make library patrons aware of DOE microfiche? CHECK ALL THAT APPLY:

1. [2] Computer printout of fiche titles available
2. [4] List of titles available
3. [4] Patrons are referred to fiche storage to browse
4. [3] Post bulletins or flyers inside the library
5. [0] Card catalog
6. [6] CD-ROM
7. [7] Online catalog
8. [5] Handouts
9. [9] Library instruction
10. [8] Other (Specify [8 responses])
11. [3] None

Did not answer [0].

25. How does your library promote the DOE fiche collection externally (i.e. outside the library)? CHECK ALL THAT APPLY:

1. [6] Do not promote any fiche collection externally
2. [0] Promote other fiche collections externally, but not DOE fiche
3. [4] Circulate an accessions list or bibliography of newly added titles
4. [3] Announce/advertise in a library or institution newsletter
5. [2] Circulate or post flyers or bulletins describing DOE fiche
6. [10] Word of mouth
7. [4] Other (Describe [4 responses])

Did not answer [0].

G. LIBRARY INSTRUCTION:

26. If your staff provides any type of general instruction or orientation on library use or use of the fiche collection, is information regarding DOE microfiche included in this instruction/orientation? CHECK ONE:

1. [7] Yes (Go to question 27)
2. [7] Sometimes (Go to question 27)
3. [2] No (Go to question 28)

Did not answer [0].

27. Which statement best describes your treatment of DOE fiche in this instruction or orientation? CHECK ONE: [14 possible responses].

1. [3] We describe how to access all fiche in general terms, but don't mention specific collections.
2. [2] We describe how to access all fiche, including DOE specifically.
3. [0] We provide provide special instruction on accessing DOE fiche.
4. [2] We don't provide formal instruction, but we do provide informal one-to-one instruction as needed.
5. [4] The type of instruction provided depends on who is being instructed.
6. [2] Other (Specify [2 responses])

Did not answer [1].

28. If your library has any type of manual, handout or documentation for staff and/or patrons on library use or use of your fiche collection, is DOE fiche usage included? CHECK ONE:

1. [4] Do not maintain this type of manual, documentation or handout
2. [3] Yes, fiche are addressed in a general way
3. [4] Yes, DOE fiche are specifically addressed
4. [5] No

Did not answer [0].

H. OTHER:

29. Have you or your patrons experienced any significant difficulties in effectively accessing DOE technical report literature? CHECK ONE:

1. [10] Yes (Go to next question)
2. [6] No (Go to question 31)

Did not answer [0].

30. What is the nature of this access difficulty? CHECK ALL THAT APPLY: [10 possible responses].

1. [8] Patrons aren't aware of the availability of microfiche
2. [1] Microfiche aren't filed or made available in a timely manner
3. [8] Patrons dislike microfiche format
4. [0] Insufficient number of microfiche readers or printers to meet demand
5. [1] Poor quality of fiche reader or printer equipment
6. [3] Patrons have difficulty locating the information on microfiche
7. [2] Fiche are missing or mis-filed
8. [1] Library staff aren't trained in accessing microfiche
9. [4] Other (Specify [4 responses])

Did not answer [0].

31. Do you have any other comments or suggestions related to the use of DOE technical reports or microfiche? (Please use additional sheets if necessary). [5 responses].

Did not answer [11].

THANK YOU!

ATTACHMENT A

SUBJECT CATEGORIES IN DOE ENERGY

1.	010000	Coal, Lignite, and Peat
2.	020000	Petroleum
3.	030000	Natural Gas
4.	040000	Oil Shales and Tar Sands
5.	050000	Nuclear Fuels
6.	070000	Isotope and Radiation Source Technology
7.	080000	Hydrogen
8.	090000	Biomass Fuels
9.	100000	Synthetic Fuels
10.	130000	Hydro Energy
11.	140000	Solar Energy
12.	150000	Geothermal Energy
13.	160000	Tidal and Wave Power
14.	170000	Wind Energy
15.	200000	Fossil-Fueled Power Plants
16.	210000	Nuclear Power Plants
17.	220000	Nuclear Reactor Technology
18.	240000	Power Transmission and Distribution
19.	250000	Energy Storage
20.	290000	Energy Planning and Policy
31.	300000	Direct Energy Conversion
32.	320000	Energy Conservation, Consumption, and Utilization
33.	330000	Advanced Propulsion Systems
34.	350000	Arms Control
35.	360000	Materials
36.	400000	Chemistry
37.	420000	Engineering
38.	430000	Particle Accelerators
39.	440000	Instrumentation
40.	450000	Military Technology, Weaponry, and National Defense
41.	540000	Environmental Sciences
42.	550000	Biomedical Sciences, Basic Studies
43.	560000	Biomedical Sciences, Applied Studies
44.	570000	Health and Safety
45.	580000	Geosciences
46.	640000	Physics I
47.	650000	Physics II
48.	700000	Fusion Energy
49.	990000	General and Miscellaneous (includes Management, Mathematics and Computers, Information Handling, and Law)

APPENDIX D

Depository Library Use of DOE Microfiche Survey: Open-Ended Questions, Explanations of Responses, Library Comments

Question B.1 **Where are DOE microfiche physically located? (Branch libraries specified.)**

- Science/Engineering
- Evansdale Library
- Accelerator Facility
- Science/Engineering
- Physical Sciences Library

Responses were received from 5 libraries.

Question B.2.a **How accessible are DOE microfiche to patrons?**

Library comment:

- You have to be on the right campus. A few of our energy information users work on a different campus 1 mile away. (Explaining response of "Very accessible.")

Question B.3 **How are your filing systems for microfiche and paper copies of DOE reports organized?** ("Other" responses—filing methods for paper.)

- L.C. call number (2 responses)

Responses were received from 2 libraries.

Library comment:

- Paper copies that are catalogued have subject headings in the card catalog (L.C.) but the items are filed by L.C. call number. (Explaining response of "By subject heading.")
- Vast majority are fiche arranged by DOE report number or SuDocs number. (Explaining response of "Don't know/Not sure.")

Question C.7.a **During the past year, approximately how many collective requests for scientific and technical information did your library typically receive in a week? (Responses greater than 25 per week specified.)**

- 170
- 150+
- 75
- 50

Responses were received from 4 libraries.

Library comment:

- We answer about 100–150 science & technology questions per week during the Fall and Spring semesters. About 20 questions a week are energy related to do with the fields you listed. I assume we should not count the categories listed unless they are energy related.

Question C.7.b **Indicate the average number of times per week you access DOE fiche to satisfy the requests you listed in part (a).**

Library comment:

- For Part B, I assume I should count the whole library and not just myself. I average about .25 per week.

Question C.8.a **When you receive requests for STI, about what percentage of the time do patrons actually request specific time periods? (Percentages reported.)**

% of the Time Requesters Specify Time Periods	% of the Time Requesters Do Not Specify Time Periods
20.00	80.00
10.00	90.00
90.00	10.00
20.00	80.00
40.00	60.00
10.00	90.00
5.00	95.00
20.00	80.00
10.00	90.00
20.00	80.00
10.00	90.00
50.00	50.00

Responses were received from 12 libraries.

Library comment:

- I usually assume they want current information from the last 0–5 years. If I asked, I bet 90% would say they preferred current. (Explaining response of "Not sure/no basis to respond.")

Question C.9.a **About how often do you search each of the following sources to find information concerning requests for STI? (Other CD-ROM responses specified.)**

"ALWAYS/ALMOST ALWAYS" RESPONSES:

- Applied Science & Technology

Response was received from 1 library.

"OFTEN" RESPONSES:

- CASSIS
- Compendix and Toxic Release Inventory (EPA)
- US Patents

Responses were received from 3 libraries.

"SOMETIMES" RESPONSES:

- Compendex
- Online catalog

Responses were received from 2 libraries.

Question C.9.a **About how often do you search each of the following sources to find information concerning requests for STI? ("Other" responses specified.)**

"ALWAYS/ALMOST ALWAYS" RESPONSES:

- Other paper indexes: Applied Science & Technology Index, Chemical Abstracts in paper or online, Engineering Index in paper or online. Inspec indexes on paper or online, etc. Also, handbooks, encyclopedias and the like.

Response was received from 1 library.

"OFTEN" RESPONSES:

- NTIS on BRS, GPO on BRS, NASA on NASA/Recon
- GPO Monthly Catalog and Chemical Abstracts on DIALOG; Scientific and Technical Aerospace Reports (NASA) in paper
- Paper

Responses were received from 3 libraries.

Question C.9.b **About how often do each of the following sources lead you or your patrons to the DOE microfiche collection? ("Other CD-ROM" responses.)**

"OFTEN" RESPONSES:

- CASSIS
- Online catalog

Responses were received from 2 libraries.

"NEVER/ALMOST NEVER" RESPONSES:

- Compendex
- US patents

Responses were received from 2 libraries.

"NOT SURE" RESPONSES:

- Compendex and Toxic Release Inventory (EPA)

Response was received from 1 library.

Question C.9.b **About how often do each of the following sources lead you or your patrons to the DOE microfiche collection? ("Other" responses.)**

"OFTEN" RESPONSES:

- OCLC

Response was received from 1 library.

"SOMETIMES" RESPONSES:

- NTIS on BRS, GPO on BRS, NASA on NASA/Recon
- GPO Monthly Catalog and Chemical Abstracts on DIALOG; Scientific and Technical Aerospace Reports (NASA) in paper

- Applied Science and Technology Index, Chemical Abstracts in paper or online, Inspec indexes on paper or online, etc. Also handbooks, encyclopedias, and the like.

Responses were received from 3 libraries.

Question D.11.5 **When patrons request a specific DOE report, how often have they used the following sources to identify information about the report? ("Other" responses.)**

- Footnotes-bibliographies
- References at end of article or another report
- References on a paper
- Bibliographies at the end of papers
- OCLC

Responses were received from 5 libraries.

Question D.12.6 **When reviewing DOE reports on microfiche, do library patrons usually— ("Other" responses.)**

- Duplicate microfiche (3 duplicators here)
- Ask us to purchase paper copy of report
- Complain that we don't have in paper

Responses were received from 3 libraries.

Question D.14 **How are online searches for library patrons typically funded?**

"DEPENDS ON WHO THE PATRON IS" RESPONSES:

- Faculty/student pay cost less $10.00 Non EWV
- University students, staff, and faculty get subsidized searching, so they pay only a portion of costs incurred. "Outside" people pay a flat fee plus full cost.
- Some are paid by endowment.

Responses received from 3 libraries.

"DEPENDS ON THE TYPE OF QUERY" RESPONSES:

- Quick reference or verification of a citation is paid by library. Longer searches, i.e., more than 10 print-outs, or over $6 are paid entirely by patron or their funded research.
- Library pays for quick reference searches. Patron pays for all others, either personally or with dept./grant funding.
- Ready reference searches are free. Longer searches the patron pays the full cost.
- Quick reference—library pays.
- Ready reference—paid by library. Preparation of subject bibliography—paid by patron.

Responses received from 5 libraries.

"OTHER" RESPONSES:

- A few databases are funded by library since subscription had to be cancelled, and was a moderately or high use index, e.g., Chemical Abstracts. Patron usually pays full cost of 90% of online searches.

Response received from 1 library.

Question E.16.7 **Which media, if any, do you currently use to maintain your cataloging records? ("Other" responses.)**

- Disks for OPAC

Response received from 1 library.

Question E.17.5 **Which vendors do you use to obtain cataloging records for books and monographs? ("Other" responses.)**

- Marcive
- Marcive for GPO tapes
- GPO through Marcive
- GPO tapeload
- Marcive GPO tapes

Responses were received from 5 libraries.

Question E.18.3 **Do you anticipate using the same vendor(s) for cataloging records of technical reports? (Explanations of "Not Sure" responses.)**

- We usually don't catalog fiche reports. A few of our reports are print and we catalog them with the same vendor as for our books.
- No plans at present for cataloging technical reports.
- We do not fully catalog all technical documents. Those that we do, we use OCLC, other receive limited cut in-house.

Responses were received from 4 libraries; however, one response was illegible.

Question E.19 **Which statement best describes your library's method of cataloging DOE fiche?**

Library comment:

- All cataloging is done by central cataloging in library, NOT by documents department. Therefore, questions are answered as they would be by our technical services department.

Question E.20.6 **If you do not currently catalog DOE fiche, indicate why not. ("Other" responses.)**

- Too much computer space
- Very few records available on OCLC

Responses were received from 2 libraries.

Library comment:

- However, demand goes up when fiche is cataloged. The records are then advertised on the online catalog.

Question E.21 **List all current external sources used to acquire cataloging records of DOE fiche (open-ended question).**

- OCLC, Energy Abstracts, SuDocs (monthly catalog), & CD-ROM (GDCS)
- DOE/OSTI down- & up-loading (we are successfully uploading our downloads)

Responses were received from 2 libraries.

Question F.24.10 **Which of the following do you use to make library patrons aware of DOE microfiche? ("Other" responses.)**

- DOE produced Accessions list distributed to departments and individual faculty, (selected)
- New circulate "Accessions List"
- Verbal referrals from other libraries
- Reference desk, citations
- ERA
- News alerts of all collections
- Ready reference
- Title page of report is photocopied at times and sent to interested instructors.

Responses were received from 8 libraries.

Question G.25.7 **How does your library promote the DOE fiche collection externally? ("Other" responses.)**

- Mention it when answering reference questions
- Might do publicity on new products/services
- Library instruction
- See note on #26: Are instructors external? (No note actually provided.)

Question G.27.6 **Which statement best describes your treatment of DOE fiche in [library] instruction or orientation? ("Other" responses.)**

- We describe how to access fiche, emphasizing DOE and NASA.
- Both 2 and 4 (4 excludes 2).

Question G.28 **If your library has any type of manual, handout, or documentation for staff and/or patrons on library use or use of your fiche collection, is DOE fiche usage included?**

Library comment:

- But we are making new handouts on Energy and Environment which will address part of this problem.

Question H.30.9 **What is the nature of this access difficulty [with effectively accessing DOE report literature]? ("Other" responses.)**

- We know about reports before they are indexed or shipped—have to wait for access.
- Fiche access easy (illegible) numbers
- We don't receive international fiche/other non-depository which are in old version of ERA. ERA-located title.
- ERA is too time consuming; DIALOG is too expensive.

Responses received from 4 libraries.

Question H.31 **Do you have any other comments or suggestions related to the use of DOE technical reports or microfiche? (Open-ended question).**

- The DOE microfiche are important to us because of our mission to support the colleges of Engineering, and Mining and Energy Resources, as well as to provide research materials for the state of West Virginia where energy is seen as very

vital to the economy. It is under-utilized partly because we don't promote it enough, partly because we don't receive requests for report literature, partly because people perceive it as hard to access through ERA, and partly because DIALOG is so expensive. In my opinion we would save considerable expense in filing and mislocating reports, if we could order individual fiche quickly. I would like to be able to continue to offer low-cost searching, or at least much lower than DIALOG. Ideally we could then order the needed fiche online and it would come in the mail. Another idea is to put the reports on floppy disks since users aren't terribly keen on microfiche.

- Nothing new since the previous survey.
- We appreciate the format: we could not possibly store that much paper, nor would we have time to select individual titles if they could not be subscribed to as a collection. Even if the collection is not used to the fullest—even if only one in 100 microfiche are ever used—when there is a request for a specific one it is most gratifying to be able to retrieve it immediately.
- DOE should perhaps take advantage of GPO experience in creating MARC records for DOE publications; MARC records that are produced by a national cataloging authority is a must for depository libraries. GPO is a national cataloging authority, and DOE can become one after training from GPO.
  A. While the use of DOE technical reports is of great importance to some institutions, in a small liberal arts institution, it is not uncommon that they would have extremely limited use—either little or none. Also, the type student being served in an educational institution has much to do with the ultimate demand. Undergraduates and even masters' students have less interest and it would be understandable that researchers, doctoral students and those in technical professions would use these reports much more.
  B. Many of the reports are difficult or impossible to obtain. Users in academe are driven by a short availability span, and are unwilling to go to a lot of effort to produce reports.
  C. Users in research institutions and business are used to paying for reports while those in academe are not. The price is usually not worth the product for those in academic institutions which are undergraduate in nature. When individuals pay for their own reports, it is less common that they are pursued strenuously.
  D. Referring to comment (A.), I must add that most of the students and many of the interested faculty might very probably be unable to understand the DOE technical reports. Most are highly technical, naturally, and require an interest and background in a specific subject.
  E. Many of the DOE reports are written in foreign languages. There is no one in most small academic institutions to translate, or even that knows many of the languages used. There is no money to translate and especially when the need is so limited.
  F. Regarding the format of the DOE reports, while microfiche is not loved by its users, it is nevertheless unrealistic to receive in paper, especially with the limited use it receives in many institutions. However, accessibility is still more difficult.
  G. My last comment concerns general use of the DOE technical reports. I believe it vital that these reports be available to those persons who do need the information. However, it is unrealistic to believe that a great percentage of the population needs DOE reports. For those who do need them, it is a wonderful source of technical information, and the availability factor must be protected. I commend OSTI heartily for their part in making DOE reports available and for the helpful way in which assistance is given.

Comments/suggestions were received from 5 libraries.

APPENDIX E

Technical Evaluation Questionnaire with Results

The U.S. Government Printing Office (GPO) and the U.S. Department of Energy Office of Scientific and Technical Information (OSTI) are conducting a pilot project to evaluate the usefulness of OSTI products and services in delivering scientific and technical information to your patrons. Baseline information about your library was collected from the first questionnaire you completed.

This questionnaire is designed to evaluate your experience to date with the Integrated Technical Information System (ITIS), the Energy Science and Technology Database, shared cataloging capabilities, and the ITIS Communication Gateway. The questionnaire is divided into three separate parts: Part A covers ITIS and the database, Part B covers the shared cataloging capabilities, and Part C covers the ITIS Communication Gateway. Since different individuals at your site may have been responsible for these different aspects of the project, the person who was most involved with each activity should complete the appropriate part of the questionnaire.

Each part of the questionnaire should take no more than 10–15 minutes to complete. Please return all three parts at the same time in the enclosed postage-paid envelope by July 1. If you prefer, you may return the questionnaire by facsimile to (615) 576-2865. Your cooperation is important. If you need additional information or have any questions, please contact Amy Finnerty at (615) 576-6800.

Thank you for your participation.

GPO/DOE Pilot Project
Part A
ITIS and Energy Science and Technology Database Evaluation

Part A is divided into two sections. The first section covers the Integrated Technical Information System (ITIS). Section 2 covers the Energy Science and Technology Database.

Today's Date: ___ /___ /___
MM DD YY

Depository Library Number: [16 libraries responded to this survey]

Depository Library Name: _____

Please list the name, position, and telephone number of the person completing this questionnaire or another contact person:

Name: _____

Position: _____

Telephone: _____

SECTION 1: Integrated Technical Information System

Please respond to the questions in this section based on your experience to date with the Integrated Technical Information System (ITIS).

1. Approximately how many times have you used ITIS? *(Check one.)*

   a. [1] One time
   b. [2] 2 to 5 times
   c. [5] 6 to 10 times
   d. [8] 11 or more times
   e. [0] Never (Do not answer any questions in this section or section 2. **Go to Part B.**)

   Did not answer [0].

2. Were there any significant differences between what the documentation states and how the system actually operates? *(Check one.)*

   a. [0] Yes
   b. [15] No
   c. [1] Don't know/No basis to judge

   Did not answer [0].

3. Based on your experience to date with ITIS, please rate the ease or difficulty of the following activities. *(Check one box in each row.)*

EASE OF USE	Very easy	Generally easy	Neither easy nor difficult	Generally difficult	Very difficult	No basis to judge	Did not answer
a. Learning to use the basic features of the system.	2	10	3	0	0	1	[0]
b. In general, using the system.	1	10	4	0	0	1	[0]
c. Conducting searches.	1	9	4	1	0	1	[0]
d. Reading the screens.	0	12	1	2	0	1	[0]
e. Following what needs to be done from the screen layout/display.	1	10	4	0	0	1	[0]
f. Moving from search information to documents.	1	10	2	2	0	1	[0]
g. Using the search operators.	0	12	2	1	0	1	[0]
h. Printing out information.	1	5	4	1	1	4	[0]
i. Saving information to disk (downloading).	1	6	1	3	1	4	[0]
j. Logging on to the system.	1	10	4	0	0	1	[0]

SECTION 2: Energy Science and Technology Database

Please answer the following questions based on your experience to date with the Energy Science and Technology Database.

4. Generally, how would you rate your ability to use electronic database searching? *(Check one.)*

   a. [0] Very great proficiency
   b. [9] Great proficiency
   c. [6] Moderate proficiency
   d. [1] Some proficiency
   e. [0] Little or no proficiency
   f. [0] Never searched a database before

   Did not answer [0].

5. Approximately how many times have you used the Energy Science and Technology Database? *(Check one.)*

   a. [1] One time
   b. [6] 2 to 5 times
   c. [3] 6 to 10 times
   d. [5] 11 or more times
   e. [1] Never (Please do not answer any more questions in this section. **Go to Part B.**)
   Did not answer [0].

[15 libraries were eligible to answer questions 6–11]

6. To date, how useful has the database been for your purposes? *(Check one.)*

   a. [1] Extremely useful
   b. [5] Very useful
   c. [5] Moderately useful
   d. [0] Somewhat useful
   e. [4] Hardly or not at all useful
   f. [0] No basis to judge
   Did not answer [0].

7. When you search the database, about how often are you able to retrieve useful information for yourself or patrons? *(Check one.)*

   a. [6] Always or almost always
   b. [5] Often
   c. [1] Sometimes
   d. [1] Rarely
   e. [0] Never or almost never
   f. [2] Not sure/No basis to judge
   Did not answer [0].

8. Has the database provided you with information that was not available in your library before? *(Check one.)*

   a. [9] Yes
   b. [4] No
   c. [2] Don't know/No basis to judge
   Did not answer [0].

9. Has the database provided you with information that is more up-to-date than what was available in the library before? *(Check one.)*

   a. [9] Yes
   b. [3] No
   c. [3] Don't know/No basis to judge
   Did not answer [0].

10. Has the database provided you with information that is in a more useful format (e.g., computer-readable file) than what was available in the library before? *(Check one.)*

    a. [6] Yes
    b. [7] No
    c. [2] Don't know/No basis to judge

    Did not answer [0].

11. What types of patrons have you been able to serve with information from the database? *(Check all that apply.)*

    a. [0] Students grades K-12
    b. [5] Undergraduate students
    c. [11] Graduate students
    d. [7] General public
    e. [10] Professors/Instructors
    f. [4] Library staff
    g. [2] Business/Industry
    h. [6] Scientists/Researchers
    i. [2] State/Local government
    j. [1] Other (Specify.) [1 response]

    Did not answer [0].

GPO/DOE Pilot Project
Part B
Shared Cataloging Evaluation

Part B asks you to evaluate the shared cataloging capabilities of ITIS and the Energy Science and Technology Database. If you disagree with any statement in this section, please explain why in the space provided below each question. Be as specific as possible.

Today's Date: ___ /___ /___
MM DD YY

Depository Library Number: [15 libraries responded to this section]

Depository Library Name: _____

Please list the name, position, and telephone number of the person completing this questionnaire or another contact person:

Name: _____

Position: _____

Telephone: _____

1. Based on your experience, please rate the downloading capabilities of shared cataloging. *(Check one box in each row.)*

DOWNLOADING	Strongly Agree	Somewhat Agree	Not Sure/ Don't Know	Somewhat Disagree	Strongly Disagree	Did Not Answer
a. Access via ITIS is straightforward and easily accomplished.	5	6	2	2	0	[0]
b. Download procedure is easy.	3	5	3	3	1	[0]
c. Download menu is easily understood.	4	7	3	1	0	[0]
d. Help messages provide needed answers.	2	3	7	3	0	[0]
e. Time required to perform download is satisfactory.	1	3	3	2	6	[0]
f. User instructions for downloading are adequate.	5	5	3	2	0	[0]

Explanations/Comments:

Did not answer [5]

2. Based on your experience, please rate your satisfaction with the cataloging records. *(Check one box in each row.)*

CATALOGING RECORDS	Strongly Agree	Somewhat Agree	Not Sure/ Don't Know	Somewhat Disagree	Strongly Disagree	Did Not Answer
a. OSTI elements occur in correct MARC fields.	0	2	9	2	2	[0]
b. Selected data elements are appropriate to our cataloging needs.	2	1	9	1	2	[0]
c. Cataloging records match microfiche.	1	1	12	1	0	[0]
d. Timing of document delivery with availability of cataloging records is satisfactory.	2	2	10	0	0	[1]
e. Accompanying user support information is adequate.	1	3	8	1	2	[0]

Explanations/Comments: [10 libraries responded].

3. Based on your experience, please rate your overall satisfaction with shared cataloging. *(Check one box in each row.)*

SATISFACTION WITH PRODUCT	Strongly Agree	Somewhat Agree	Not Sure/ Don't Know	Somewhat Disagree	Strongly Disagree	Did Not Answer
a. The overall quality of this product is satisfactory.	2	1	7	1	4	[0]
b. The quality of the cataloging records is acceptable as it presently exists.	3	2	6	1	3	[0]
c. This product meets our microfiche cataloging needs.	3	0	9	1	2	[0]
d. Our organization would be interested in subscribing to this product if it was made available.	2	3	5	1	4	[0]
e. The method of obtaining the record is acceptable.	2	1	6	1	5	[0]

Explanations/Comments: [9 libraries responded].

GPO/DOE Pilot Project
Part C
ITIS Communication Gateway Evaluation

Part C asks you to evaluate the Integrated Technical Information System (ITIS) Communication Gateway as a viable service to depository libraries.

Today's Date: ___ /___ /___
MM DD YY

Depository Library Number: [16 libraries responded to this section]

Depository Library Name: _____

Please list the name, position, and telephone number of the person completing this questionnaire or another contact person:

Name: _____

Position: _____

Telephone: _____

1. Generally, how would you rate your ability to use electronic database searching? *(Check one.)*

   a. [0] Very great proficiency
   b. [8] Great proficiency
   c. [6] Moderate proficiency
   d. [1] Some proficiency
   e. [0] Little or no proficiency
   f. [0] Don't know/No basis to respond

   Did not answer [1].

2. Approximately how many times have you used the ITIS Gateway? *(Check one.)*

   a. [4] One time
   b. [3] 2 to 5 times
   c. [0] 6 to 10 times
   d. [1] 11 or more times
   e. [8] Never (Please STOP at this point and return the questionnaire.)

   Did not answer [0].

FILE MERGING:

The ITIS Gateway allows the user to merge the results of searches in the Energy Science and Technology Database on ITIS with older DOE records in files 103 and 104 on DIALOG. The search results are combined in a personal database that can be viewed, sorted, or printed as desired. The following questions concern the use of ITIS or other systems to merge files of search results from different sources.

[8 libraries were eligible to respond to this section].

3. Have you used the ITIS Gateway to merge search results files from ITIS and DIALOG? *(Check one.)*

   a. [4] Yes
   b. [0] Not sure
   c. [4] No (Go to question 6.)

   Did not answer [0].

4. Overall, how satisfactory was the merger activity? *(Check one.)* [4 possible responses].

   a. [2] Very satisfactory
   b. [0] Somewhat satisfactory
   c. [0] Somewhat unsatisfactory
   d. [2] Very unsatisfactory
   e. [0] Don't know

   Did not answer [0].

5. Did the Gateway successfully eliminate duplicate records in the personal database created by merging the search results files? *(Check one.)* [4 possible responses].

   a. [1] Yes
   b. [1] No
   c. [2] Not sure/No basis to respond

   Did not answer [0].

6. Prior to having access to the ITIS Gateway, did you ever merge files from different systems? Note that this question does not refer to merging files from different databases on the *same* system, i.e., two different files on DIALOG. *(Check one.)*

   a. [0] Yes
   b. [0] Not sure (Go to question 10.)
   c. [8] No (Go to question 10.)

   Did not answer [0].

7. What software or system(s) did you use? *(Specify.)* [0 possible responses].

8. Overall, how satisfactory was the merger activity of the other system(s)? *(Check one.)* [0 possible responses].

   a. [ ] Very satisfactory
   b. [ ] Somewhat satisfactory
   c. [ ] Somewhat unsatisfactory
   d. [ ] Very unsatisfactory
   e. [ ] Don't know

9. Based on your experience with the merging capabilities of the ITIS Gateway and other systems, how did the **merging operations** compare in terms of ease of use? *(Check one.)* [0 possible responses].

   a. [ ] ITIS capabilities are much better
   b. [ ] ITIS capabilities are somewhat better
   c. [ ] ITIS capabilities are about the same
   d. [ ] Other system(s) capabilities are somewhat better
   e. [ ] Other system(s) capabilities are much better
   f. [ ] ITIS is better than some other systems, but not as good as others
   g. [ ] Don't know/No opinion

10. Based on your experience with the merging capabilities of the ITIS Gateway and other systems, how did the merging operations compare in terms of time/effort saved? *(Check one.)* [8 possible responses].

   a. [0] ITIS capabilities are much better
   b. [0] ITIS capabilities are somewhat better
   c. [0] ITIS capabilities are about the same
   d. [0] Other system(s) capabilities are somewhat better
   e. [0] Other system(s) capabilities are much better
   f. [0] ITIS is better than some other systems, but not as good as others
   g. [7] Don't know/No opinion

   Did not answer [1].

CREATING BIBLIOGRAPHIES:

11. Prior to having access to the ITIS Gateway, did your library distribute bibliographies or notification lists created from merged files? *(Check one.)*

   a. [0] Yes, often
   b. [0] Yes, sometimes
   c. [1] Not sure
   d. [7] No

   Did not answer [0].

12. Have you used the ITIS Gateway to produce bibliographies or notification lists using files merged from ITIS and DIALOG? *(Check one.)*

   a. [0] Yes
   b. [0] Not sure/No basis to respond (Go to question 15.)
   c. [8] No (Go to question 15.)

   Did not answer [0].

13. How does the ITIS Gateway report capability compare with your previous experience in **creating bibliographies** from merged files in terms of ease of use? *(Check one.)* [0 possible responses].

    a. [ ] ITIS capabilities are much better
    b. [ ] ITIS capabilities are somewhat better
    c. [ ] ITIS capabilities are about the same
    d. [ ] Other system(s) capabilities are somewhat better
    e. [ ] Other system(s) capabilities are much better
    f. [ ] ITIS is better than some other systems, but not as good as others
    g. [ ] Don't know/No opinion

14. How does the ITIS Gateway report capability compare with your previous experience in creating bibliographies from merged files in terms of time/effort saved? *(Check one.)* [0 possible responses].

    a. [ ] ITIS capabilities are much better
    b. [ ] ITIS capabilities are somewhat better
    c. [ ] ITIS capabilities are about the same
    d. [ ] Other system(s) capabilities are somewhat better
    e. [ ] Other system(s) capabilities are much better
    f. [ ] ITIS is better than some other systems, but not as good as others
    g. [ ] Don't know/No opinion

REPORT FORMATS:

Several report formats are available for viewing or printing personal databases created using the ITIS Gateway. Each report is sorted differently and may contain different information than the other formats. The following questions concern your use of these report formats.

[8 libraries were eligible to respond to this section].

15. Which of the report formats available through the Gateway have you used? *(Check all that apply.)*

    a. [2] Report Indexed By Author (separate record for each author if more than one is listed)
    b. [0] Report Indexed by Author Affiliation
    c. [2] Report Indexed by Subject Descriptor
    d. [0] Complete Format Report (sorted by primary author only)
    e. [5] None

    Did not answer [0].

16. Do any of the report formats lack fields you need? (*Check all that apply.)*

    a. [1] Yes
    b. [4] Don't know
    c. [3] No (Go to question 18.)

    Did not answer [0].

17. Please list the field(s) you need for each format: [1 possible response].

Report Format:	Needed Fields:
a. Indexed/Sorted By Author	
b. Indexed/Sorted by Author Affiliation	
c. Indexed/Sorted by Subject Descriptor	
d. Complete Format Report	

Did not answer [1].

18. Are enough report formats and report indexing options offered on the Gateway? *(Check one.)*

a. [2] Yes (Go to question 20.)
b. [1] No
c. [5] Not sure

Did not answer [1].

19. Describe any other report formats and indexing options you need: [1 possible response].

20. When using the Gateway to access DIALOG, all records captured from files 103 and 104 for use in a personal database on ITIS must be displayed in DIALOG Format 25 or they won't be translated. Does Format 25 contain all the fields you need? *(Check one.)*

a. [2] Yes
b. [6] Not sure
c. [0] No (List other fields needed.)_____ [0 responses]

Did not answer [0].

21. List other comments or suggestions concerning report formats or indexing options:
Did not answer [8]

22. Did the following personal database services work as described? *(Check one box in each row.)*

SERVICES	Yes	Not Sure	No	Didn't Use	NR	Did Not Answer
a. Select	3	1	0	3	1	[0]
b. Edit	1	2	1	3	1	[0]
c. Report	4	1	0	2	1	[0]
d. Download	1	2	2	2	1	[0]
e. Delete	1	2	0	4	1	[0]
f. Combine	4	1	1	1	1	[0]

23. List other comments or suggestions concerning personal database services:

Did not answer [6].

24. In general, how easy or difficult to use did you find the ITIS Gateway? *(Check one.)*

a. [0] Very easy
b. [2] Somewhat easy
c. [2] Somewhat difficult
d. [1] Very difficult
e. [3] Don't know/No basis to respond

Did not answer [0].

25. How would you rate the Gateway user screens on each of the following items? *(Check one box in each row.)*

USER SCREENS	Excellent	Good	Fair	Poor	Not sure	Did not answer
a. Screen layout and design	0	4	1	0	2	[1]
b. Menu design	1	3	1	0	2	[1]
c. Understandability	0	2	3	0	2	[1]

26. If the ITIS Communication Gateway in its present form was made available as part of the regular ITIS service, would you or your colleagues use it? *(Check one.)*

a. [1] Yes, definitely
b. [0] Yes, if changes were made (Explain.) _____
c. [1] Maybe (Explain.) [1 response]
d. [2] No, probably not. (Explain.) [2 responses]
e. [0] No, definitely not. (Explain.) _____
f. [4] Not sure

Did not answer [0].

27. Would having access through the ITIS Gateway to other systems or databases (in addition to DIALOG files 103 and 104) make you more likely to use it? *(Check one.)*

a. [2] Yes (Specify other systems.) [2 responses]
b. [4] Not sure
c. [2] No

Did not answer [0].

28. Please provide other comments or suggestions concerning the ITIS Communication Gateway:
5 responses. Did not answer [3].

APPENDIX F

Technical Evaluation Survey: Open-Ended Questions, Explanations of Responses, Library Comments

Question A.11 **What types of patrons have you been able to serve with information from the database?**

Library Comments:

- No patron requests per se. Just performed practice searches.

Question B.1 **Based on your experience, please rate the downloading capabilities of shared cataloging.**

- It took me three tries to successfully complete downloading a file. The first two times, I spent more than an hour downloading before I was dropped, probably due to line noise or other telecommunication problems. Thus, the time required to download one file was over three and a half hours and this is far too much time required.
- In my only attempt to logon so far I was stymied at the next-to-last step of passwords. Every typing mistake necessitated starting over. I gave up because there was only a slim chance of the database being helpful for this question anyway. It wasn't worth the frustration.
- One example for b,c: get *.*—no clue that a space is needed between "get" and "*.*". Second download took over 2 hours—ties up PC too long. No instruction or help on uploading from PC.
- About one time in four I'd get dropped mid-way through. Sometimes "lost" file.
- I was somewhat surprised with the size of the file we needed to download, I think it was about 20 records, file was about 400K, took about 2 hrs. at 2400 baud. I could have been downloading the wrong file. You might want to consider compressing the file with PKZIP or something. After I download it, I compressed it to about 150K, this would have expedited downloading.
- Downloading these records has not been difficult; uploading is now equally easy for us to perform. I view the uploading of these records as being extremely valuable, and our patrons agree. They are using DOE materials as never before—even for general subject requests.
- Had problems with Kermit at 2400 baud. Amount of time needed for download is too long.
- We have not successfully downloaded anything at this time. A&M is having difficulty writing a translator for downloading magnetic tapes from ITIS. Once this is accomplished, we will be able to tell you more.
- Mechanics of downloading to disk were fine, however, we were not able to upload into our online catalog the data. We were not able to get binary download from ITIS system.
- Note: As a discretionary site, lacking an automated catalog, we received permission to not participate in this portion of the study.

Responses were received from 10 libraries.

Question B.2 **Based on your experience, please rate your satisfaction with the cataloging records.**

- I did not participate in this process to any large degree.
- Unable to read records from disk to local online catalog.

- Subject heading not in LC format; not LC choice. Never were able to use records. No staff time—see warning note of first survey at end. Our online cataloging system, LS/2000 requires rigidly controlled input.
- Format very non-standard. Took too much programming time.
- Sorry, we thought we would be able to engulf data into catalog. DP on catalog side needed a tape.
- Our Automation Department is unable to use the records.
- MARC-like record was not "loadable." We do not have the technology to support staff to "write/modify" the loader for these records. (Attempts to read the files caused the loader program to abort.) Note that we use GEAC software which is proprietary and runs on GEAC hardware.
- Have not done any downloading—records are not in format our system can handle and—subjects do not conform to established library headings.
- See attached letter (in Appendix J). We have successfully downloaded EDB records to our local hard drive; however, we were unable to upload this material into our GEAC online catalog because we were unable to provide a program to use the translation tables. We also found ourselves involved in a changeover from GEAC to NOTIS. There was no space left in our GEAC online catalog to accommodate our day-to-day routine needs let alone space to accommodate the GPO/DOE Pilot Project. Finally, we chose not to corrupt our existing MARC format with any extraneous information that may logically belong to other fields in our system.
- We've had trouble with our VTLS loading programs reading tape. Indicator fields and 1st character of subfield (a) are dropped. This does not happen with BNA/ SOCINET<OCLC records.

Responses were received from 11 libraries.

Question B.3 **Based on your experience, please rate your overall satisfaction with shared cataloging.**

- Receiving the records on tape is much preferred over downloading.
- The Shared Cataloging component of the pilot project was not satisfactory for us mainly because the records were not MARC records, and as a NOTIS library, the task of doing the translator program was simply too work intensive. This is a small liberal arts university; unlike most of the other members of the 17-member pilot group. The support staff for MIS is very small and works with the entire university. There is not time nor money to undertake a project such as the DOE pilot project shared cataloging component. However, I made personal phone calls to six of my project colleagues trying to get information getting the system up, and none to that time were successful (all NOTIS sites).
- Until we can see these records load into and interact with our online catalog, we cannot respond positively to D. above. Assuming we can finally load the tapes, we would prefer to receive monthly tapes. Direct downloading to disk is much too time-consuming and expensive!
- I would think that the presence of these records in our catalog would boost usage significantly. It seems, though, that much more work must be done for that to happen. As a separate, dial-up utility, expected usage would be very low.
- If we can increase systems staff, and if we can purchase a new online system that will allow us to load the database as a separate file, we would answer "YES" to D. As to E.—tape is better than downloading.
- If tape, depends on price.
- Compression of downloading records would have been nice.

- The project did not take into account the storage requirement at the library sites. The cost could become quite great for a very small percentage of the collection. I would prefer a CD-ROM product.
- Tapes would be preferable; if we can get load programs to work properly.

Responses were received from 9 libraries.

Question C.3 **Have you used the ITIS Gateway to merge search results files from ITIS and DIALOG?**

- Did not merge files.
- Yes, but could not get gateway to save file from ESTD on ITIS. Used ProComm to save to disk instead!

Responses were received from 2 libraries.

Question C.12 **Have you used the ITIS Gateway to produce bibliographies or notification lists using files merged from ITIS and DIALOG?**

- No, but did distribute, in paper, weekly lists of DOE fiche distributed.

Response was received from 1 library.

Question C.23 **List other comments or suggestions concerning personal database services.**

- Would like to be able to merge records from a CD-ROM and ITIS.
- When I tried to merge the two databases, it was not successful. Things seemed to follow manual directions until then. At "edit," showed 30 records and should have been 43—said "end of database."

Responses were received from 2 libraries.

Question C.26 **If the ITIS Communication Gateway in its present form was made available as part of the regular ITIS service, would you or your colleagues use it?**

- Would like better documentation.
- Use here does not warrant it.
- The up-to-dateness is not of sufficient importance to overcome inconvenience of two searches and new search language. Will probably use Dialog or STN for energy searches.

Responses were received from 3 libraries.

Question C.27 **Would having access through the ITIS Gateway to other systems or databases (in addition to DIALOG files 103 and 104) make you more likely to use it?**

- Any DIALOG or STN file.
- OCLC.

Responses were received from 2 libraries.

Question C.28 **Please provide other comments or suggestions concerning the ITIS Communication Gateway.**

- With the advent of CD-ROM, our use of Dialog has greatly decreased. Our major means of access to DOE reports is through the Dialog NTIS CD-ROM. Having access to the most current reports through ITIS is wonderful. Should DOE go

through with plans to produce a CD-ROM version of the Energy Database, it would be useful to have a way to merge records from the CD-ROM and ITIS.

- Manual did not say that files had to be named separately, at least where we read. We are used to using software where the downloaded records are added to the end of the file. Now we are assuming that the files should have been individually named and then combined using the "combine" option. When we began to "edit" it displayed the first 30 records and said we had ended the database, and there should have been another 13 records. Is there a limit to the SAMPLE file size? One of the problems with the software in general is that there seems to be no option for EXITING or BACKING OUT easily. The screens get very confusing and the process seems to go in circles. Back to the Gateway—the main problem was that the count indicated all the records were there, yet when we tried to find the DIALOG records, they were gone. They appeared with the SEL and disappeared when we tried to download. As with the "non-MARC" records in the shared cataloging component, there seems to be no consistency with any computer program. When a library uses many systems and processes with computers this get unbelievably complicated. If the Gateway experience had been anything but a test run, OSTI would have been accessed for assistance, but at this point it seemed unnecessary. NOTE: At one point, a WARNING message appeared, with message that "ITIS software error has been detected." Had there been more time available, we would have called ITIS as indicated, and this might have been the reason our merging did not work. Upon continuing, however, the message disappeared, but not all options worked as indicated in manual.
- Have not had enough time or training to learn how to use it [ITIS Gateway] with proficiency.
- I want to note that Susan Hocker, who had been our contact person on this project, left LSU recently for another position. I have taken her place. While she did demonstrate how to log on to me, I had great difficulty turning her sketchy notes into success on my first and so far only attempt to log on to the system. I am filling out this evaluation because it was left behind for me with other materials and because I have had some awareness of the project all along.
- I feel that I must offer you a word of explanation since our participation in the pilot project was not at the level that I had hoped. Soon after attending the ITIS training, I learned that my teammate would be resigning from the University. Because we were in a temporary hiring freeze at the time, that position has been unfilled. Since "the show must go on," I've been responsible for a number of areas I was formerly able to delegate, and consequently unable to proceed with the pilot project at any level but the most minimal. I wanted you to know this because the training provided was excellent, and I know that the amount of effort expended on this project was enormous. This project is important to libraries throughout the nation. Wishing you continued success.

Responses were received from 5 libraries.

APPENDIX G

Final Project Evaluation Questionnaire with Results

The U.S. Government Printing Office (GPO) and the U.S. Department of Energy Office of Scientific and Technical Information (OSTI) recently concluded their joint Pilot Project. The data collected on this questionnaire will complete the information gathering needed to evaluate the results of this portion of the Pilot Project.

Please return the questionnaire in the enclosed postage-paid envelope by January 31, 1992. If you prefer, you may return the questionnaire by facsimile to (615) 576-2865. Please contact Sutton Kay at (615) 576-1269 if you need additional information or have any questions.

Your participation in the Pilot Project has been greatly appreciated. The information you provided will assist both GPO and DOE in evaluating their dissemination programs.

A. LIBRARY INFORMATION

Depository Library Number: [17 libraries responded to this survey]

Library Name: _____

Name, position, address, and telephone number of person completing this questionnaire or other contact person:

Name: _____

Position: _____

Telephone: _____

Address: _____

_____

_____

(City) (State) (Zip code)

B. ACCESSING DOE INFORMATION

1. Based on your experience with the Pilot Project, how do you think the frequency with which your library patrons access your collection of DOE microfiche will be affected? (Check one.)

   a. [3] Will access the DOE microfiche collection much more frequently.
   b. [7] Will access the DOE microfiche collection somewhat more frequently.
   c. [0] Will access the DOE microfiche collection somewhat less frequently.
   d. [0] Will access the DOE microfiche collection much less frequently.
   e. [6] There will be no change in the frequency of access.
   f. [1] Don't know.
   Did not answer [0].

2. As a result of the Pilot Project, did you experience any increase or decrease in the number of requests you received for scientific and technical information (STI)? (Check one.)

   a. [1] Great increase
   b. [5] Some increase
   c. [10] Neither an increase nor a decrease
   d. [0] Some decrease
   e. [0] Great decrease
   f. [1] Don't know
   Did not answer [0].

3. Were the patrons you were able to serve with information from the DOE database typical of your usual patrons? (Check one.)

   a. [15] Yes
   b. [2] No
   c. [0] Not sure
   Did not answer [0].

4. Why or why not? (Explain.)

   [9] Responses
   Did not answer [8].

5. About what percentage of your *usual* overall clientele do you feel would have an ongoing need for DOE information? (Check one.)

   a. [0] 0%
   b. [15] 1 to 25%
   c. [1] 26 to 50%
   d. [0] 51 to 75%
   e. [0] 76 to 100%
   f. [1] Not sure
   Did not answer [0].

6. To what extent, if any, has regular access to ITIS and the Energy Science and Technology Database been valuable to your library? (Check one.)

   a. [0] Very great extent
   b. [2] Great extent
   c. [2] Moderate extent
   d. [8] Some extent
   e. [5] Little or no extent
   f. [0] Don't know/No basis to respond
   Did not answer [0].

7. To what extent, if any, would receiving DOE shared cataloging files be valuable to your library? (Check one.)

   a. [7] Very great extent
   b. [2] Great extent
   c. [4] Moderate extent
   d. [1] Some extent
   e. [2] Little or no extent
   f. [1] Don't know/No basis to respond
   Did not answer [0].

C. ENERGY SCIENCE AND TECHNOLOGY DATABASE

8. Approximately how many times did you use the Energy Science and Technology Database during the project? (Check one.)

   a. [0] One time
   b. [5] 2 to 5 times
   c. [5] 6 to 10 times
   d. [5] 11 or more times
   e. [2] Never (Please do not answer any more questions in this section. Go to Part D.)
   Did not answer [0].

9. Overall, how useful was the Database for your purposes? (Check one.)

   a. [3] Extremely useful
   b. [4] Very useful
   c. [3] Moderately useful
   d. [2] Somewhat useful
   e. [3] Hardly or not at all useful
   f. [0] No basis to judge
   Did not answer [0].

10. When you searched the Database, about how often were you able to retrieve the information you needed for yourself or patrons? (Check one.)

   a. [6] Always or almost always
   b. [5] Often
   c. [2] Sometimes
   d. [2] Rarely
   e. [0] Never or almost never
   f. [0] Not sure/no basis to judge
   Did not answer [0].

D. SHARED CATALOGING

11. Which method of receiving shared cataloging records does or would your library prefer? (Check one.)

   a. [3] Download from online source
   b. [12] Receive magnetic tape
   c. [2] Other method (Specify [2 responses])
   d. [0] No preference
   e. [0] Don't know
   Did not answer [0].

12. Based on your overall experience, please rate your satisfaction with shared DOE cataloging. (Check one box in each row.)

SATISFACTION WITH PRODUCT	Strongly Agree	Somewhat Agree	Not Sure/ Don't Know	Somewhat Disagree	Strongly Disagree	Did Not Answer
a. The overall quality of this product is satisfactory.	1	3	3	5	3	[2]
b. The quality of the cataloging records is acceptable as it presently exists.	2	1	3	3	6	[2]
c. This product meets our microfiche cataloging needs.	4	2	5	1	3	[2]
d. Our organization would be interested in subscribing to this product if it were made	4	0	6	3	2	[2]
e. The method of obtaining the record is acceptable.	2	1	5	3	3	[3]

Explanations/Comments:

[10] Libraries provided explanations/comments

E. ITIS COMMUNICATION GATEWAY

13. During the Pilot Project, about how many times did you use the ITIS Gateway? (Check one.)

a. [2] One time
b. [4] 2 to 5 times
c. [0] 6 to 10 times
d. [2] 11 or more times
e. [9] Never (Please do not answer any more questions in this section. Go to Part F.)
Did not answer [0].

14. Which of the following Gateway capabilities did you use? (Check all that apply.)

a. [2] Merging search results files from ITIS and DIALOG
b. [5] Creating bibliographies or notification lists for distribution
c. [1] Viewing or printing personal databases created in the Gateway
d. [0] None of the above (Explain [0 responses])
e. [0] Don't know
Did not answer [0].

15. Based on your overall experience with the Gateway, please rate your satisfaction with the following items. (Check one box in each row.)

	Excellent	Good	Fair	Poor	Not Sure	Didn't Use	Did Not Answer
a. File merging	0	0	1	1	2	4	[0]
b. User screens	0	5	2	0	1	0	[0]
c. Report formats	0	2	2	0	1	3	[0]
d. Creating bibliographies	0	5	0	1	2	0	[0]
e. Access to DIALOG	0	3	1	0	1	3	[0]
f. Other (Specify [0 responses])	0	0	0	0	0	0	[0]

16. Overall, how easy or difficult to use did you find the ITIS Gateway? (Check one.)

a. [1] Very easy
b. [3] Somewhat easy
c. [3] Somewhat difficult
d. [0] Very difficult
e. [1] Don't know/No basis to respond
Did not answer [0].

17. Which retrieval software are you more comfortable using, ITIS or DIALOG? Why?

[0] ITIS
[7] DIALOG
[1] Both equal
Did not answer [0].

18. Are the citations available on DIALOG current enough for your needs? If not, please explain.

[5] Yes
[1] No
[1] Not always
[1] NA
Did not answer [0].

19. Have you used the OneSearch capability on DIALOG to search other files at the same time you search the Energy Science and Technology Database? (Check one.)

    a. [0] Yes, frequently
    b. [3] Yes, occasionally
    c. [5] No
    d. [0] Not sure
    Did not answer [0].

20. How important is it to you to be able to search multiple files using a single search strategy? (Check one.)

    a. [0] Very great importance
    b. [4] Great importance
    c. [2] Moderate importance
    d. [1] Some importance
    e. [1] Little or no importance
    f. [0] Don't know/No basis to respond
    Did not answer [0].

F. PROJECT COSTS

21. For each of the following project cost components please indicate the total cost to your library for the entire project and whether this cost is actual or estimated. If your library did not incur a listed cost, check "Not Applicable."

	Cost	Actual or Estimated (A or E)	Not Applicable	Did Not Answer
a. Training	$ 2	A = 0 E = 2	10	[5]
b. Travel	$ 16	A = 9 E = 6	0	[1]
c. Computer or data processing	$ 6	A = 3 E = 2	4	[7]
d. Telecommunications	$ 7	A = 2 E = 4	4	[6]
e. Material, equipment, & supplies	$ 4	A = 1 E = 3	4	[9]
f. Staff costs (break out by person)	$			
1. Name:_____	$ 10	A = 2 E = 7	1	[6]
2. Name:_____	$ 6	A = 1 E = 5	1	[10]
3. Name:_____	$ 3	A = 0 E = 3	1	[13]
4. Name:_____	$ 0	A = 0 E = 0	1	[16]
g. Other (specify _____)	$ 2	A = 1 E = 0	1	[14]

22. Do you have any other comments concerning your participation in the Pilot Project? (Attach additional sheets as necessary.)

    Did not answer [3].

    Other comments:
    [10] Responses

Thank you for your assistance.

APPENDIX H

Final Project Evaluation Survey: Open-Ended Questions, Explanations of Responses, Library Comments

Question B.1 **Based on your experience with the Pilot Project, how do you think the frequency with which your library patrons access your collection of DOE microfiche will be affected?**

Library comments:

- "...will be affected?" crossed out; "has & is being affected" written in.
- *If* we can continue to receive cataloging data.

Question B.3/B.4 **Were the patrons you were able to serve with information from the DOE database typical of your usual patrons? Why or why not?**

EXPLANATIONS OF "YES" RESPONSES:

- Our patrons run an extremely wide gamut, including students and faculty as well as people from the business community.
- Science is the subject area of our department.
- My usual clientele is academic faculty and students, and those were the patrons I was able to work with most during this pilot project. I tried to interest personnel at Wolf Creek Power station (phone calls, letters) as well as colleagues in other KS academic institutions, but this did not work well.
- Not advertised off campus, though we received off-campus requests as usual.
- But *very* few.
- Our typical users of energy information are faculty researchers, or graduate students. Those patrons who used ITIS were from the above groups, thus were used to the technical nature of the information.
- Patrons for DOE STI are faculty, graduate students and research staff of the Physics Department and electron accelerator facility.

EXPLANATIONS OF "NO" RESPONSES:

- I think we had slightly more users from the University. I think of the DOE users as more community than University.
- This is a *main* Library, serving the whole campus.

Responses were received from 9 libraries.

Question B.5 **About what percentage of your usual overall clientele do you feel would have an ongoing need for DOE information?**

Library comments:

- It varies.
- Note that not all our patrons are interested in STI (explaining response of "1 to 25%").

Question B.6 **To what extent, if any, has regular access to ITIS and the Energy Science and Technology Database been valuable to your library?**

Library comment:

- To Physics branch library (explaining response of "Great extent").

Question B.7 **To what extent, if any, would receiving DOE shared cataloging files be valuable to your library?**

Library comments:

- [Library responded "Very great extent" and placed three stars beside their answer.]
- If we had the resources to load (or access for free), value would be *high* .
- If files could be successfully tape loaded onto local automated system (explaining response of "Moderate extent").

Question D.11.c **Which method of receiving shared cataloging records does or would your library prefer? ("Other method" responses)**

- CD-ROM with search software
- Mount as database with OCLC's first search

Responses were received from 2 libraries.

Library comment:

- If Internet, not by phone (explaining response of "Download from online source").

Question D.12 **Based on your overall experience, please rate your satisfaction with shared DOE cataloging. (Explanations/Comments)**

- Lack of a load program to get the records into the library online systems was an impossible obstacle since this university did not have the personnel or funding to have such a program written. We have NOTIS, as did some 6 others of the participating members. The other real difficult barrier was lack of the MARC format which most libraries live and die with. Too bad there was not more communication with library community before OSTI went to the time and trouble of the training program.
- See attached report. (See letter from Christina Perkins Meyer of the University of Minnesota in Appendix J.)
- Records need to be easily converted into a usable format or already MARC. We have no one to write conversion programs and could not use the tapes we got. If they were usable they would be an enormous help since we get so many of these reports and currently rely on NTIS.
- a–c: If the file were *separate* from our online public catalog, the records would be quite satisfactory.
  d: We currently have no funds for subscribing
  e: We have no time nor sufficient equipment for downloading and cannot load tapes on our online catalog at present.
- We were not able to load the records during the pilot projects. It was a combination of bad timing and some miscommunication between our public services & technical services departments.
- We were unable to load any of the records due to the non-standard MARC-record. We would probably prefer a CD-ROM due to the size of the database.
- N/A—we did not participate with this module. We loaded 1 magnetic tape.
- Our system manager prefers to load shared cataloging records from tape but was unable to load the project tape successfully. Our tape load program could not handle tapes because of dropped indicators & subfield characters.
- Eastern and Washington State University programmers spent over 100 hours loading a test file into our joint online catalog. The test file consisted of two weeks

of DOE records. Three problems were major obstacles: (1) The offset value was off by 1 byte, (2) the leader description had to be adjusted to be recognized, (3) our system limit of 2K for maximum record length meant the end of many DOE records was lost. EWU intends to make extensive use of OCLC's First Search over our campus network. We believe that the most cost-effective way to make ESTD available to the general and research public would be to make it available through such a service as First Search. OCLC has indicated it would be willing to work on such a project with Eastern if the DOE tapes would be made available. In general, many of the points made by the University of Minnesota were applicable to the EWU/WSU system.

- We received permission to participate in the study as a discretionary site. Since we did not get automated by the end of the project, we were not able to participate in the shared cataloging. Because we sometimes get line noise when downloading, we would have preferred magnetic tape had we participated in the shared cataloging.

Responses were received from 10 libraries.

Question E.13.e **During the Pilot Project, about how many times did you use the ITIS Gateway?**

Library comment:

- Used DIALOG (NTIS) on CD-ROM instead—cheaper—(DIALOG's CD-ROM version of NTIS.)

Question E.14 **Which of the following Gateway capabilities did you use?**

Library comment:

- Difficult to use (referring to "creating bibliographies or notification lists for distribution").

Question E.17 **Which retrieval software are you more comfortable using, ITIS or DIALOG? Why?**

- Both are equal
- As a veteran searcher through DIALOG, it is much easier for me to access information databases through this system. With several years of use and training which I have had, the search techniques are much preferred.
- DIALOG—because I use it for over 80 searches each month. Easier to use limiters.
- DIALOG is easier to use because they use similar vocabularies to librarians. ITIS was difficult in that Boolean logic did not consistently work nor did standard search strategies. The best results from ITIS were the broadbased searches.
- DIALOG—familiarity combined with power.
- DIALOG, because I am more familiar with DIALOG. Use DIALOG frequently.
- DIALOG used more frequently.
- DIALOG—more experience using.

Responses were received from 8 libraries.

Question E.18 **Are the citations available on DIALOG current enough for your needs? If not, please explain.**

- No. Microfiche is received and available long before records appear in DIALOG. Faculty are often aware of current research and want access as quickly as possible.

- Yes, the citations through DIALOG are usually current enough. The negatives concern the usual high prices of science/technology databases. However, with careful strategy, this can be satisfactory to our patrons. The currency and price of ITIS would be much better, but for an institution without much research in technology (no doctoral programs), DIALOG seems to be sufficient and easier for staff management.
- Yes
- Generally—yes.
- Not always, but only because many users want information the same day the info was released.
- N/A
- Yes
- Yes

Responses were received from 8 libraries.

Question F.21 **Indicate the total cost to your library for the entire project and whether this cost is actual or estimated.**

Library comments:

- Telecommunications [cost] included above (Computer/data processing).
- Figure [for computer/data processing] includes new computer equipment necessary for project.
- Costs [for training] included in F.21.f.2 [staff costs].
- F.21.f.1 [Training] includes week in training at Oak Ridge.
- F.1 Buckles (Washington State University programmer) 100 hours = 2.5 weeks @ $64,000/year. F.2 Rea (Documents Librarian) 80 hours = 2 weeks @ $60,625/year. E.2 Photocopy costs to distribute weekly list to selected departments and faculty. See attached letter. (See Eastern Washington University correspondence in Appendix J.) (See note under Question F.22.)

Question F.22 **Do you have any other comments concerning your participation in the Pilot Project?**

- Most of our patrons expect to find energy related material using our public access catalog. We have GPO cataloging and most assume that DOE material is included. Having the DOE cataloging in PAC would vastly increase the use of the Energy material and make it available to a large cross section of our patrons. For this reason, the Shared Cataloging is the most important part of the Pilot Project. While it took far longer than I would have preferred, we were able to load the records. Since working out the problems is what pilot projects are all about, I feel the Shared Cataloging project to be a success. I strongly urge that distribution of the DOE Cataloging records to depository libraries be offered in the very near future.
- Positives—Very helpful information about contents of DOE microfiche; Familiarization with OSTI, extremely interesting and beneficial; associations with OSTI personnel; very gratifying experience; Associations with other documents librarians from several states; Opportunity to participate in pilot and go through training program—a very well-planned project with many benefits for a more research-oriented institution; A well-planned training program with good personnel and resources. Negatives—Expensive for the library and institution for benefit received academically; Not really a beneficial program for a small liberal arts university; Lack of MARC format for records impossible to use; Lack of a load program to use with NOTIS system for cataloging records. The library director and I are both glad ESU participated, even though the benefits were rather on the intangible side...THANKS for your dedication and hard work.

- *Please* make modifications suggested by Chris Meyer at the University of Minnesota Libraries (see Appendix J) so that we can all load cataloging tapes more easily! Also, OSAM version of ITIS was great for our purposes. It would be *great* as the front-end search software that all libraries see if you decide to make ITIS available to depository libraries.
- I believe the only costs incurred were for Susan Hooker's training trip and one or two brief database searches. Use of DOE materials as a separate resource is low enough to make this a low use project, but if records for DOE reports could be merged into our general catalog, a significant jump in usage would be seen.
- Investigation of ITIS was valuable and instructive, as was introduction to DOE indexing and document distribution. Lack of funding and systems staff was our major difficulty. Having *full-text* documents available on line or in CD-ROM form would be a convenient and cost-saving method for us.
- Attached letter. (See Appendix J for letter.)
- The lists of reports received grouped by subject categories were very helpful to my patrons. We would continue to use them, if they were provided to us.
- Need standard MARC cataloging words for our online catalog. These should preferably arrive simultaneously with fiche shipments. Ongoing need for an online retrieval system has not been determined. So far Dialog/NTIS has served our needs.
- Please keep at least the shared cataloging portion available.
- CD ROM is probably more appropriate for our needs. Adding records to the catalog could become prohibitively expensive in terms of mass storage. The project staff underestimated the costs needed to convert non-standard MARC records for loading into an OPAC.
- Although the Pilot Project was originally scheduled to begin February 1, 1991, Texas A&M did not begin searching ITIS until mid-April, 1991, due to telecommunications problems. Our director set aside a separate fund of $6,000.00 to draw upon for expenses incurred during this project. I do not know how much, if any, of this sum remains. I know that $1,012.98 of this sum was spent for my travel/training to OSTI Jan. 28–Feb. 1, 1991. Also, part of the account was spent for hiring a computer programmer. We recently loaded 1 magnetic tape in our online catalog and have received many comments from the librarian. At this time, this tape is available to library personnel only. The demonstrations I gave for various researchers on campus were very successful, but use of the DOE Fiche collection did not alter significantly except immediately after the demo. The energy collection has steady use.
- Participation was limited by other project commitments at time of budget retrenchment and staff shortages. Inability to load tapes prevented serious study of adequacy of shared catalog product. Interest in DOE fiche and online searching of energy database grew, especially.
- I am enclosing a memo from 8-22-91, where I summarizied our participation for key staff here. I would like to add that the tour of OSTI on Friday where I got to meet the staff and see how information is processed was of major benefit to me. I hope that other information professionals in the future will be able to benefit as I did from the well-organized tour. Also, I am exceptionally impressed by the job OSTI does, and hope the high quality indexing will continue to be produced and supported by the federal government. (Two page memo from West Virginia University in Appendix J.)

Responses were received from 14 libraries.

Note: One of 14 responses is listed under Question F.21 concerning Project costs.

APPENDIX I

Project Tracking Statistics and Additional Cost Information

CLEVELAND PUBLIC LIBRARY (CPL)

User A

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 4.32
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 2.08
Apr online charges	$ 9.12
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$13.44
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 2.08

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

User C

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 4.13
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$13.60
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00

Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 4.13
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$13.60
Cum. value gateway	$ 0.00

Total February Charges	$ 0.00
Total Feb online hours toward 40 -none	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$ 8.45
Total Mar online hours toward 40 - 31.7 mins	
Total Mar value shared cat online	$13.60
Total Mar value gateway	$ 2.08
Total April Charges	$ 9.12
Total Apr no. of online paying hours - 34.2 mins	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$17.57
Cum. Total no. of online paying hours - 1 hr, 5.9 mins	
Cum. Total value shared cat online	$13.60
Cum. Total value gateway	$ 2.08

COLLEGE OF WILLIAM AND MARY (CWM)

User A

Feb online charges	$20.48
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$15.20
Feb value gateway	$ 2.88
Mar online charges	$ 1.76
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 6.40
Mar value gateway	$ 0.00
Apr online charges	$ 8.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 5.44
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 2.40
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 4.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$32.64
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$31.04
Cum. value gateway	$ 2.88

User B

Feb online charges	$74.88
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 3.04
Mar online charges	$21.92
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.48
Apr online charges	$11.04
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00

May online charges	$ 7.04
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.16
Jun online charges	$ 0.96
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 4.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$115.84
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 4.00
Cum. value gateway	$ 3.68

User C

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 2.24
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 2.88
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 2.24
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 2.88
Cum. value gateway	$ 0.00
Total February Charges	$ 95.36
Total Feb online hours toward 40 - 5 hrs, 57.6 mins	
Total Feb value shared cat online	$ 15.20
Total Feb value gateway	$ 5.92
Total March Charges	$ 23.68
Total Mar online hours toward 40 - 1 hr, 28.8 mins.	
Total Mar value shared cat online	$ 6.40
Total Mar value gateway	$ 0.48
Total April Charges	$ 19.04
Total Apr no. of online paying hours - 1 hr, 11.4 mins.	
Total Apr value shared cat online	$ 5.44
Total Apr value gateway	$ 0.00
Total May Charges	$ 7.04
Total May no. of online paying hours - 26.4 mins.	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.16
Total June Charges	$ 5.60
Total Jun no. of online paying hours - 21 mins	
Total Jun value shared cat online	$ 10.88
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$150.72
Cum. Total no of online paying hours - 9 hrs, 25.2 mins	
Cum. Total value shared cat online	$ 37.92
Cum. Total value gateway	$ 6.56

DENVER PUBLIC LIBRARY (DPL)

User A

Feb online charges	$ 3.84
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$18.40
Feb value gateway	$ 0.00

Mar online charges	$ 0.80
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 4.64
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$18.40
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 2.12
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.64
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 2.76
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$ 5.96
Total Feb online hours toward 40 - 22.35 mins	
Total Feb value shared cat online	$18.40
Total Feb value gateway	$ 0.00
Total March Charges	$ 1.44
Total Mar online hours toward 40 - 5.4 mins	
Total Mar value shared cat online	$ 0.00
Total Mar value gateway	$ 0.00
Total April Charges	$ 0.00
Total Apr no. of online paying hours - none	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total July Charges	$ 7.40
Cum. Total no. of online paying hours - 27.4 mins	
Cum. Total value shared cat online	$18.40
Cum. Total value gateway	$ 0.00

EASTERN WASHINGTON UNIVERSITY (EWU)

User A

Feb online charges	$ 0.00
Feb print charges	$ 0.00

Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$ 0.00
Total Feb online hours toward 40 - none	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$ 0.00
Total Mar online hours toward 40 - none	
Total Mar value shared cat online	$ 0.00
Total Mar value gateway	$ 0.00
Total April Charges	$ 0.00
Total Apr no. of online paying hours - none	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$ 0.00
Cum. Total no. of online paying hours - none	
Cum. Total value shared cat online	$ 0.00
Cum. Total value gateway	$ 0.00

EMPORIA STATE UNIVERSITY (ESU)

User A

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$46.24
Mar print charges	$ 5.00
Mar download charges	$ 5.50
Mar value shared cat	$ 0.32
Mar value gateway	$ 0.00
Apr online charges	$ 1.60
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 1.44
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.64
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 8.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$21.61
Cum. online charges	$57.92
Cum. print charges	$ 5.00
Cum. download charges	$ 5.50
Cum. value shared cat	$ 0.32
Cum. value gateway	$21.61

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 1.76
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$41.60
Mar value gateway	$ 0.00
Apr online charges	$ 0.48
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$13.76
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 2.24
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$55.36
Cum. value gateway	$ 0.00

Total February Charges	$ 0.00
Total Feb online hours toward 40 - none	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$58.50
Total Mar online hours toward 40 - 3 hrs	
Total Mar value shared cat online	$41.92
Total Mar value gateway	$ 0.00
Total April Charges	$ 2.08
Total Apr no. of online paying hours - 7.8 mins	
Total Apr value shared cat online	$13.76
Total Apr value gateway	$ 0.00
Total May Charges	$ 1.44
Total May no. of online paying hours - 5.4 mins	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.64
Total Jun no. of online paying hours - 2.4 mins	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 8.00
Total Jul no. of online paying hours - 30 mins	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$21.61
Cum. Total Charges	$70.66
Cum. Total no. of online paying hours - 3 hrs, 45.6 mins	
Cum. Total value shared cat online	$55.68
Cum. Total value gateway	$21.61

GOVERNMENT PRINTING OFFICE (GPO)

User A

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 1.60
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 1.60
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$ 0.00
Total Feb online hours toward 40 - none	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$ 0.00
Total Mar online hours toward 40 - none	
Total Mar value shared cat online	$ 0.00
Total Mar value gateway	$ 0.00
Total April Charges	$ 1.60
Total Apr no. of online paying hours - 6 mins	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$ 1.60
Cum. Total no. of online paying hours - 6 mins	
Cum. Total value shared cat online	$ 0.00
Cum. Total value gateway	$ 0.00

LOUISIANA STATE UNIVERSITY (LSU)

User A

Feb online charges	$ 2.56
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 4.64
Mar print charges	$ 0.00
Mar download charges	$ 0.80
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$12.80
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 2.40
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00

Cum. online charges	$22.40
Cum. print charges	$ 0.00
Cum. download charges	$ 0.80
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$ 2.56
Total Feb online hours toward 40 - 9.6 mins	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$ 5.44
Total Mar online hours toward 40 - 17.4 mins	
Total Mar value shared cat online	$ 0.00
Total Mar value gateway	$ 0.00
Total April Charges	$12.80
Total Apr no. of online paying hours - 48 mins	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 2.40
Total Jun no. of online paying hours - 9 mins	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$23.20
Cum. Total no. of online paying hours - 1 hr, 24 mins	
Cum. value shared cat online	$ 0.00
Cum. value gateway	$ 0.00

OKLAHOMA DEPARTMENT OF LIBRARIES (ODL)

User A

Feb online charges	$28.96
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.64
Feb value gateway	$ 0.00
Mar online charges	$ 5.12
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$338.24
Mar value gateway	$ 0.00
Apr online charges	$ 3.04
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$113.92
Apr value gateway	$ 0.00
May online charges	$11.04
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$29.76
May value gateway	$ 0.00
Jun online charges	$32.00
Jun print charges	$732.00
Jun download charges	$ 0.00
Jun value shared cat	$398.72
Jun value gateway	$ 0.00

Jul online charges	$ 1.12
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$53.60
Jul value gateway	$ 0.00
Cum. online charges	$83.04
Cum. print charges	$732.00
Cum. download charges	$ 0.00
Cum. value shared cat	$1254.56
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$ 28.96
Total Feb online hours toward 40 - 1 hr, 48.6 mins	
Total Feb value shared cat online	$ 0.64
Total Feb value gateway	$ 0.00
Total March Charges	$ 5.12
Total Mar online hours toward 40 - 19.2 mins	
Total Mar value shared cat online	$338.24
Total Mar value gateway	$ 0.00
Total April Charges	$ 3.04
Total Apr no. of online paying hours - 11.4 mins	
Total Apr value shared cat online	$113.92
Total Apr value gateway	$ 0.00
Total May Charges	$ 11.04
Total May no. of online paying hours - 41.4 mins	
Total May value shared cat online	$ 29.76
Total May value gateway	$ 0.00
Total June Charges	$764.00
Total Jun no. of online paying hours - 2 hrs	
Total Jun value shared cat online	$398.72
Total Jun value gateway	$ 0.00
Total Jul Charges	$ 1.12
Total Jul no. of online paying hours - 4.2 mins	
Total Jul value shared cat online	$ 53.60
Total Jul value gateway	$ 0.00
Cum. Total Charges	$813.28
Cum. Total no. of online paying hours - 5 hrs, 4.8 mins	
Cum. Total value shared cat online	$934.88
Cum. Total value gateway	$ 0.00

RICE UNIVERSITY (RU)

User A

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$19.20
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.64
Mar value gateway	$ 0.00
Apr online charges	$ 0.80
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$12.64
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00

Jun online charges	$18.08
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$50.72
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.64
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$ 0.00
Total Feb online hours toward 40 - none	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$19.20
Total Mar online hours toward 40 - 1 hr, 12 mins	
Total Mar value shared cat online	$ 0.64
Total Mar value gateway	$ 0.00
Total April Charges	$ 0.80
Total Apr no. of online paying hours - 3 mins	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$12.64
Total May no. of online paying hours - 47.4 mins	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$18.08
Total Jun no. of online paying hours - 1 hr, 7.8 mins	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$50.72
Cum. Total no. of online paying hours - 3 hrs, 10.2 mins	
Cum. Total value shared cat online	$ 0.64
Cum. Total value gateway	$ 0.00

TEXAS A&M (TAM)

User A

Feb online charges	$51.36
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$13.44
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$95.04
Apr print charges	$108.25
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.16

May online charges	$60.32
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$66.72
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$67.52
Jul print charges	$ 0.00
Jul download charges	$346.50
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$354.40
Cum. print charges	$108.25
Cum. download charges	$346.50
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.16

Total February Charges	$51.36
Total Feb online hours toward 40 - 3 hrs, 12.6 min	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$13.44
Total Mar online hours toward 40 - 50.4 mins	
Total Mar value shared cat online	$ 0.00
Total Mar value gateway	$ 0.00
Total April Charges	$203.29
Total Apr no. of online paying hours - 5 hrs, 56.4 mins	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.16
Total May Charges	$60.32
Total May no. of online paying hours - 3 hrs, 46.2 mins	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$66.72
Total Jun no. of online paying hours - 4 hrs, 10.2 mins	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$414.02
Total Jul no. of online paying hours - 4 hrs, 13.2 mins	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00

Cum. Total Charges	$809.15
Cum. Total no. of online paying hours - 22 hrs, 9 mins	
Cum. Total value shared cat online	$ 0.00
Cum. Total value gateway	$ 0.16

UNIVERSITY OF COLORADO (UC)

User A

Feb online charges	$12.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$98.88
Feb value gateway	$ 0.00
Mar online charges	$24.48
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.80
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.32
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$36.80
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$99.68
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00

Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$12.00
Total Feb online hours toward 40 - 45 mins	
Total Feb value shared cat online	$98.99
Total Feb value gateway	$ 0.00
Total March Charges	$24.48
Total Mar online hours toward 40 - 1 hr, 31.8 mins	
Total Mar value shared cat online	$ 0.80
Total Mar value gateway	$ 0.00
Total April Charges	$ 0.00
Total Apr no. of online paying hours - none	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.32
Total Jun no. of online paying hours - 1.2 mins	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$36.80
Cum. Total no. of online paying hours - 2 hrs, 18 mins	
Cum. Total value shared cat online	$99.79
Cum. Total value gateway	$ 0.00

UNIVERSITY OF KENTUCKY (UK)

User A

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$84.64
Mar print charges	$ 0.00
Mar download charges	$279.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 2.88
Apr online charges	$22.72
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 1.44
May online charges	$ 9.76
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.32
Jun online charges	$ 2.72
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.16
Jul online charges	$10.56
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.16
Cum. online charges	$130.40
Cum. print charges	$ 0.00
Cum. download charges	$279.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 4.96

User B

Feb online charges	$75.04
Feb print charges	$ 0.00

Feb download charges	$ 0.00
Feb value shared cat	$ 8.00
Feb value gateway	$ 0.00
Mar online charges	$49.28
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$192.64
Mar value gateway	$ 0.00
Apr online charges	$18.08
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 1.28
Apr value gateway	$ 0.00
May online charges	$13.60
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$411.04
May value gateway	$ 0.00
Jun online charges	$ 5.92
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$88.16
Jun value gateway	$ 0.00
Jul online charges	$18.72
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$159.04
Jul value gateway	$ 0.00
Cum. online charges	$182.56
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$860.06
Cum. value gateway	$ 0.00

User C

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

User D

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$75.68
Mar print charges	$ 0.00
Mar download charges	$ 6.75
Mar value shared cat	$ 0.00
Mar value gateway	$ 3.04
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00

Cum. online charges	$75.68
Cum. print charges	$ 0.00
Cum. download charges	$ 6.75
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 3.04

Total February Charges	$75.04
Total Feb online hours toward 40 - 4 hrs, 41.4 mins	
Total Feb value shared cat online	$ 8.00
Total Feb value gateway	$ 0.00
Total March Charges	$495.35
Total Mar online hours toward 40 - 13 hrs, 6 mins	
Total Mar value shared cat online	$192.64
Total Mar value gateway	$ 5.92
Total April Charges	$40.80
Total Apr no. of online paying hours - 2 hrs, 33 mins	
Total Apr value shared cat online	$ 1.28
Total Apr value gateway	$ 1.44
Total May Charges	$23.36
Total May no. of online paying hours - 1 hr, 27.6 mins	
Total May value shared cat online	$411.04
Total May value gateway	$ 0.32
Total June Charges	$ 8.64
Total Jun no. of online paying hours - 32.4 mins	
Total Jun value shared cat online	$88.16
Total Jun value gateway	$ 0.16
Total July Charges	$29.28
Total Jul no. of online paying hours - 1 hr, 49.8 mins	
Total Jul value shared cat online	$159.04
Total Jul value gateway	$ 0.16
Cum. Total Charges	$672.47
Cum. Total no. of online paying hours - 24 hrs,10.2 mins	
Cum. Total value shared cat online	$860.16
Cum. Total value gateway	$ 8.00

UNIVERSITY OF MASSACHUSETTS (UMA)

User A

Feb online charges	$ 4.32
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 4.32
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 9.92
Apr print charges	$ 5.00
Apr download charges	$ 2.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$18.56
Cum. print charges	$ 5.00
Cum. download charges	$ 2.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 4.16
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$13.60
Mar value gateway	$ 0.00
Apr online charges	$ 1.92
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00

Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 6.08
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$13.60
Cum. value gateway	$ 0.00

Total February Charges	$ 4.32
Total Feb online hours toward 40 - 16.2 mins	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$ 8.48
Total Mar online hours toward 40 - 31.8 mins	
Total Mar value shared cat online	$13.60
Total Mar value gateway	$ 0.00
Total April Charges	$18.84
Total Apr no. of online paying hours - 44.4 mins	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$31.64
Cum. Total no. of online paying hours - 1 hr, 32.4 mins	
Cum. Total value shared cat online	$13.60
Cum. Total value gateway	$ 0.00

UNIVERSITY OF MINNESOTA (UMIN)

User A

Feb online charges	$11.68
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.16
Feb value gateway	$ 0.00
Mar online charges	$ 1.60
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.48
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 5.92
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.32
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.32
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$20.32
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.16
Cum. value gateway	$ 0.00

User B

Feb online charges	$13.12
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$25.92
Feb value gateway	$ 0.00
Mar online charges	$ 4.64
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$134.08
Mar value gateway	$ 0.00
Apr online charges	$ 2.24
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$202.08
Apr value gateway	$ 0.00
May online charges	$ 0.80
May print charges	$ 0.00

May download charges	$ 0.00
May value shared cat	$16.00
May value gateway	$ 0.00
Jun online charges	$ 0.48
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$12.80
Jun value gateway	$ 0.00
Jul online charges	$ 0.96
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$22.24
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$390.88
Cum. value gateway	$ 0.00

Total February Charges	$24.80
Total Feb online hours toward 40 - 1 hr, 33 mins	
Total Feb value shared cat online	$26.08
Total Feb value gateway	$ 0.00
Total March Charges	$ 6.24
Total Mar online hours toward 40 - 23.4 mins	
Total Mar value shared cat online	$134.08
Total Mar value gateway	$ 0.00
Total April Charges	$ 2.72
Total Apr no. of online paying hours - 10.2 mins	
Total Apr value shared cat online	$202.08
Total Apr value gateway	$ 0.00
Total May Charges	$ 6.72
Total May no. of online paying hours - 25.2 mins	
Total May value shared cat online	$16.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.80
Total Jun no. of online paying hours - 3 mins	
Total Jun value shared cat online	$12.80
Total Jun value gateway	$ 0.00
Total July Charges	$ 1.28
Total Jul no. of online paying hours - 4.8 mins	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$42.56
Cum. Total no of online paying hours - 2 hrs, 39.6 mins	
Cum. Total value shared cat online	$391.04
Cum. Total value gateway	$ 0.00

UNIVERSITY OF NEW MEXICO (UNM)

User A

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$33.28
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.48
Mar value gateway	$ 0.00
Apr online charges	$ 6.40
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 4.32
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 6.72
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$50.72
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.48
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$37.60
Mar print charges	$ 0.00
Mar download charges	$16.25
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.16
Apr print charges	$ 0.00

Apr download charges	$ 0.00
Apr value shared cat	$17.12
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$37.76
Cum. print charges	$ 0.00
Cum. download charges	$16.25
Cum. value shared cat	$17.12
Cum. value gateway	$ 0.00

Total February Charges	$ 0.00
Total Feb online hours toward 40 - none	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00
Total March Charges	$87.13
Total Mar online hours toward 40 - 4 hrs, 25.8 mins	
Total Mar value shared cat online	$ 0.48
Total Mar value gateway	$ 0.00
Total April Charges	$ 6.56
Total Apr no. of online paying hours - 24.6 mins	
Total Apr value shared cat online	$17.12
Total Apr value gateway	$ 0.00
Total May Charges	$ 4.32
Total May no. of online paying hours - 16.2 mins	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 6.72
Total Jul no. of online paying hours - 25.2 mins	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00

Cum. Total Charges	$104.73
Cum. Total no. of online paying hours - 5 hrs, 31.8 mins	
Cum. Total value shared cat online	$17.60
Cum. Total value gateway	$ 0.00

UNIVERSITY OF TENNESSEE (UT)

User A

Feb online charges	$ 3.68
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.48
Mar online charges	$106.08
Mar print charges	$160.25
Mar download charges	$315.50
Mar value shared cats	$ 0.00
Mar value gateway	$ 9.60
Apr online charges	$11.52
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.16
May online charges	$32.32
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.64
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$19.36
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.48
Cum. online charges	$172.96
Cum. print charges	$160.25
Cum. download charges	$315.50
Cum. value shared cat	$ 0.00
Cum. value gateway	$11.36

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.64
Mar print charges	$ 0.00

Mar download charges	$ 0.00
Mar value shared cat	$25.60
Mar value gateway	$ 0.16
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.64
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$25.60
Cum. value gateway	$ 0.16

User C

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$12.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.16
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$12.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.16

Total February Charges	$ 3.68
Total Feb online hours toward 40 - 13.8 mins	
Total Feb value shared cat online	$ 0.00
Total Feb value gateway	$ 0.48
Total March Charges	$582.47
Total Mar online hours toward 40 - 6 hrs, 40.2 mins	
Total Mar value shared cat online	$25.60
Total Mar value gateway	$ 9.76
Total April Charges	$11.52
Total Apr no. of online paying hours - 43.2 mins	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.16
Total May Charges	$44.32
Total May no. of online paying hours - 2 hrs, 46.2 mins	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.80
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$19.36
Total Jul no. of online paying hours - 1 hr, 12.6 mins	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.48
Cum. Total Charges	$661.35
Cum. Total no. of online paying hours - 11 hrs, 36 mins	
Cum. Total value shared cat online	$25.60
Cum. Total value gateway	$11.68

UTAH STATE UNIVERSITY (USU)

User A

Feb online charges	$ 6.08
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.80
Feb value gateway	$ 0.00
Mar online charges	$ 1.92
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 8.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.80
Cum. value gateway	$ 0.00

User B

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 1.12
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$21.92
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 1.12
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$21.92
Cum. value gateway	$ 0.00

User C

Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$ 0.00
Jul print charges	$ 0.00

Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$ 0.00
Cum. print charges	$ 0.00
Cum. download charges	$ 0.00
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

Total February Charges	$ 6.08
Total Feb online hours toward 40 - 22.8 mins	
Total Feb value shared cat online	$ 0.80
Total Feb value gateway	$ 0.00
Total March Charges	$ 3.04
Total Mar online hours toward 40 - 11.4 mins	
Total Mar value shared cat online	$21.92
Total Mar value gateway	$ 0.00
Total April Charges	$ 0.00
Total Apr no. of online paying hours - none	
Total Apr value shared cat online	$ 0.00
Total Apr value gateway	$ 0.00
Total May Charges	$ 0.00
Total May no. of online paying hours - none	
Total May value shared cat online	$ 0.00
Total May value gateway	$ 0.00
Total June Charges	$ 0.00
Total Jun no. of online paying hours - none	
Total Jun value shared cat online	$ 0.00
Total Jun value gateway	$ 0.00
Total July Charges	$ 0.00
Total Jul no. of online paying hours - none	
Total Jul value shared cat online	$ 0.00
Total Jul value gateway	$ 0.00
Cum. Total Charges	$ 9.12
Cum. Total no. of online paying hours - 34.2 mins	
Cum. Total value shared cat online	$22.72
Cum. Total value gateway	$ 0.00

WEST VIRGINIA UNIVERSITY (WVU)

User A

Feb online charges	$22.88
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$19.04
Mar print charges	$ 5.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$88.32
May print charges	$ 0.00
May download charges	$44.50
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$16.64
Jun print charges	$ 0.00
Jun download charges	$ 0.00
Jun value shared cat	$ 0.00
Jun value gateway	$ 0.00
Jul online charges	$17.60
Jul print charges	$ 0.00
Jul download charges	$ 0.00
Jul value shared cat	$ 0.00
Jul value gateway	$ 0.00
Cum. online charges	$168.00
Cum. print charges	$ 5.00
Cum. download charges	$44.50
Cum. value shared cat	$ 0.00
Cum. value gateway	$ 0.00

User B

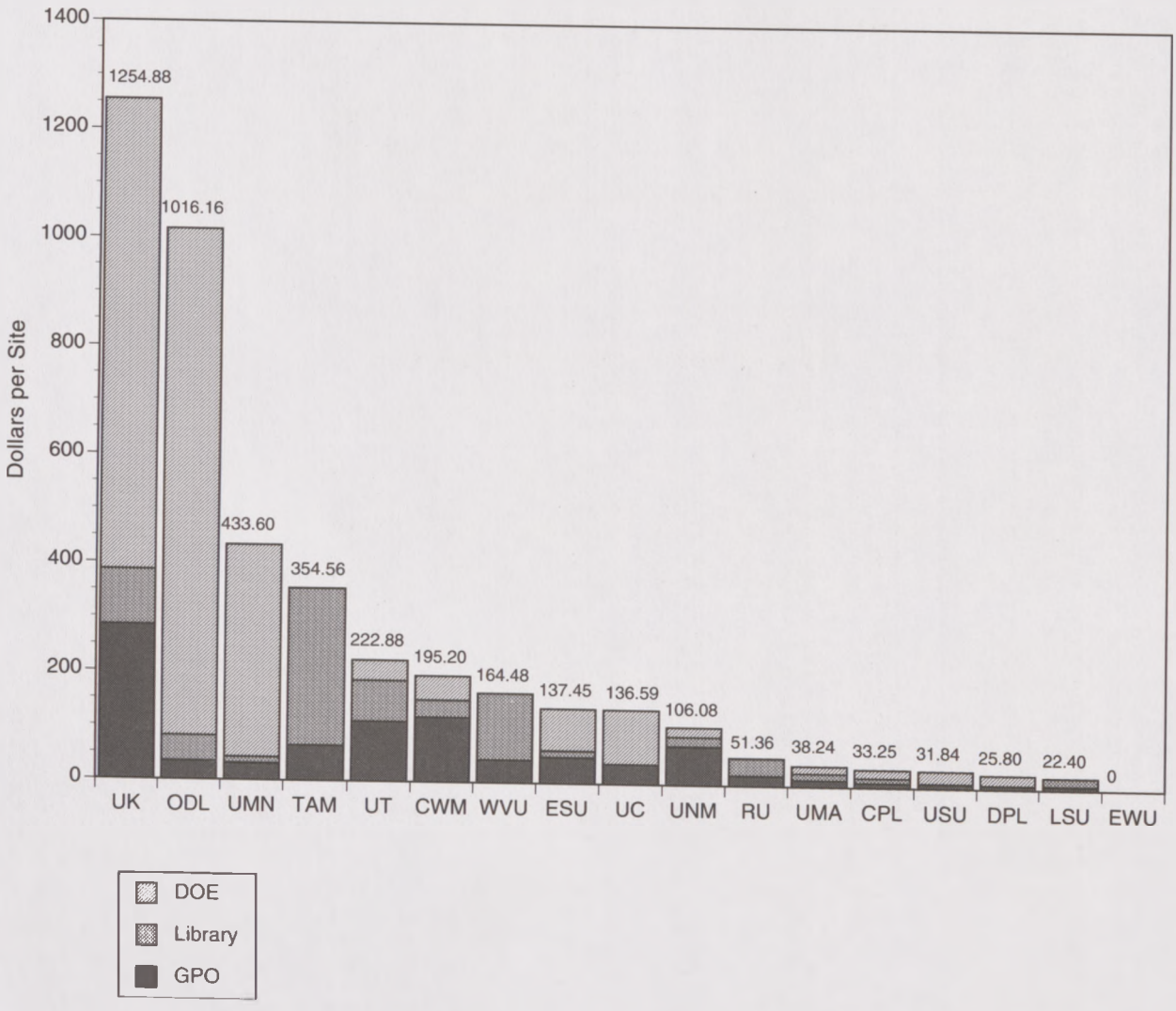
Feb online charges	$ 0.00
Feb print charges	$ 0.00
Feb download charges	$ 0.00
Feb value shared cat	$ 0.00
Feb value gateway	$ 0.00
Mar online charges	$ 0.00
Mar print charges	$ 0.00
Mar download charges	$ 0.00
Mar value shared cat	$ 0.00
Mar value gateway	$ 0.00
Apr online charges	$ 0.00
Apr print charges	$ 0.00
Apr download charges	$ 0.00
Apr value shared cat	$ 0.00
Apr value gateway	$ 0.00
May online charges	$ 0.00
May print charges	$ 0.00
May download charges	$ 0.00
May value shared cat	$ 0.00
May value gateway	$ 0.00
Jun online charges	$ 0.00
Jun print charges	$ 0.00

Jun download charges	$ 0.00	Total April Charges	$ 0.00
Jun value shared cat	$ 0.00	Total Apr no. of online paying hours - none	
Jun value gateway	$ 0.00	Total Apr value sharged cat	$ 0.00
		Total Apr value gateway	$ 0.00
Jul online charges	$ 0.00		
Jul print charges	$ 0.00	Total May Charges	$132.82
Jul download charges	$ 0.00	Total May no. of online paying hours - 5 hrs, 31.2 mins	
Jul value shared cat	$ 0.00	Total May value shared cat online	$ 0.00
Jul value gateway	$ 0.00	Total May value gateway	$ 0.00
Cum. online charges	$ 0.00		
Cum. print charges	$ 0.00	Total June Charges	$16.64
Cum. download charges	$ 0.00	Total Jun no. of online paying hours - 1 hr, 2.4 mins	
Cum. value shared cat	$ 0.00	Total Jun value shared cat online	$ 0.00
Cum. value gateway	$ 0.00	Total Jun value gateway	$ 0.00
Total February Charges	$22.88	Total July Charges	$17.60
Total Feb online hours toward 40 - 1 hr, 25.8 mins		Total Jul no. of online paying hours - 1 hr, 6 mins	
Total Feb value shared cat	$ 0.00	Total Jul value shared cat online	$ 0.00
Total Feb value gateway	$ 0.00	Total Jul value gateway	$ 0.00
Total March Charges	$24.04	Cum. Total Charges	$213.98
Total Mar online hours toward 40 - 1 hr, 11.4 mins		Cum. Total no. of online paying hours - 10 hrs, 16.8 mins	
Total Mar value shared cat	$ 0.00	Cum. Total value shared cat online	$ 0.00
Total Mar value gateway	$ 0.00	Cum. Total value gateway	$ 0.00

Breakdown of Costs Paid for by GPO, Libraries, and DOE

Figure I-1 shows in bar chart format the total dollar amount of ITIS online time logged by each test library during the entire six months of Component I. The three shadings for each library illustrate how much of that library's total time that month was paid for by GPO, how much was paid for by the library itself, and how much was subsidized by DOE. Tables I-1 through I-4 which follow, provide a breakdown by library of online time logged and costs incurred under the three funding conditions: GPO-subsidized, DOE-subsidized, and time paid for by libraries themselves. These tables are divided into two-month and four-month segments because the two-month division point was where GPO-subsidy of billed online time ended and libraries began to pay.

Figure I-1: Breakdown of Total Costs for Usage of Online Time (Costs Paid for by GPO, Libraries, and DOE)



Note that time is expressed primarily in hours and fractions of hours in the text and in the charts, but is provided as hours and minutes in the tables.

Table I-1: February/March GPO-Subsidized Online Time

Library	Time	Cost
CPL	31.69 min	$ 8.45
CWM	7 hr, 26.40 min	119.04
DPL	27.75 min	7.40
EWU	none	0.00
ESU	3 hr, 0.00 min	48.00
LSU	27.00 min	7.20
ODL	2 hr, 7.80 min	34.08
RU	1 hr, 12.00 min	19.20
TAM	4 hr, 3.00 min	64.80
UC	2 hr,16.80 min	36.48
UK	17 hr,47.40 min	284.64
UMA	48.00 min	12.80
UMIN	1 hr, 56.40 min	31.04
UNM	4 hr, 25.80 min	70.88
UT	6 hr, 54.00 min	110.40
USU	34.20 min	9.12
WVU	2 hr, 37.20 min	41.92
Total	56 hr, 35.44 min (or 56.59 hr)	$905.45

Table I-2: February/March DOE-Subsidized Online Time

Library	Time	Cost
CPL	58.80 min	$ 15.68
CWM	1 hr, 45.00 min	28.00
DPL	1 hr, 9.00 min	18.40
EWU	none	00.00
ESU	2 hr, 37.20 min	41.92
LSU	none	00.00
ODL	21 hr, 10.80 min	338.88
RU	2.40 min	0.64
TAM	none	00.00
UC	6 hr, 14.22 min	99.79
UK	12 hr, 54.60 min	206.56
UMA	51.00 min	13.60
UMIN	10 hr, 00.60 min	160.16
UNM	1.80 min	0.48
UT	2 hr, 14.40 min	35.84
USU	1 hr, 25.20 min	22.72
WVU	none	00.00
Total	61 hr, 25.02 min (or 61.42 hr)	$982.67

Table I-3: April/July Online Time Billed to Libraries

Library	Time	Cost
CPL	34.20 min	$ 9.12
CWM	1 hr, 58.80 min	31.68
DPL	none	00.00
EWU	none	00.00
ESU	45.60 min	12.16
LSU	57.00 min	15.20
ODL	2 hr, 57.00 min	47.20
RU	1 hr, 58.20 min	31.52
TAM	18 hr, 6.00 min	289.60
UC	1.20 min	.32
UK	6 hr, 22.80 min	102.08
UMA	44.40 min	11.84
UMIN	43.20 min	11.52
UNM	1 hr, 6.00 min	17.60
UT	4 hr, 42.00 min	75.20
USU	none	00.00
WVU	7 hr, 39.60 min	122.56
Total	48 hr, 36.00 min (or 48.60 hr)	$777.60

Table I-4: April/July DOE-Subsidized Online Time

Library	Time	Cost
CPL	none	$ 00.00
CWM	1 hr, 1.80 min	16.48
DP	none	00.00
EWU	none	00.00
ESU	2 hr, 12.64 min	35.37
LSU	none	00.00
ODL	37 hr, 15.00 min	596.00
RU	none	00.00
TAM	60.00 min	.16
UC	none	00.00
UK	41 hr, 21.00 min	661.60
UMA	none	00.00
UMIN	14 hr, 25.80 min	230.88
UNM	1 hr, 4.20 min	17.12
UT	5.40 min	1.44
USU	none	00.00
WVU	none	00.00
Total	97 hr, 26.44 min (or 97.44 hr)	$1,559.05

APPENDIX J

Correspondence from Participating Libraries

CLEVELAND PUBLIC LIBRARY
325 SUPERIOR AVENUE
CLEVELAND, OHIO 44114-1271
216 623-2800

July 26, 1991

Mr. F. Sutton Kay
GPO/DOE Pilot Project Coordinator
U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831

Dear Sutton:

I am enclosing a copy of a memo and printout I just received from our Automated Systems Manager, Robert Carterette, with his explanation of why we were unable to use DOE's bibliographic records during the pilot project.

In my opinion, gaining access to these reports through our catalog was the most useful part of this project. I still hope it can be achieved, at least for a portion of the collection.

If you have any questions concerning this memo please contact Mr. Carterette at (216)623-2810.

Thanks for your attention.

Sincerely,

Siegfried M. Weinhold
Head, Documents Collection

CLEVELAND PUBLIC LIBRARY

DATE: July 23, 1991

TO: Sig Weinhold

FROM: Robert Carterette

SUBJECT: DOE Technical Reports

==========

We are unable to process machine readable cataloging for the DOE technical reports. We have encountered four distinct problems in the pseudo-MARC record structure: The subfield count (Leader byte 11) is 1, while MARC uses a count of two; invalid characters appear in leader bytes 23 and 24; and correcting the first problem results in a different logical record length (Leader bytes 00-04) than that appearing in the DOE record.

Besides the not-so-simple conversion of COSATI tags to MARC fields or subfields, the leader and directory would have to be rewritten, and the logical record length recalculated.

Note also the contents of subject fields. The treatment of subdivisions is inconsistent with the practice of other agencies preparing machine-readable cataloging (e.g., LC, NLM, GPO) and not provided for within the structure of the established authority indexing we use for bibliographic data.

cc: Joan Clark

Eastern Washington University
at Cheney and Spokane

February 14, 1992

F. Sutton Kay
Project Manager
GPO/DOE Pilot Project
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, Tennessee 37381-9939.

Dear Sutton Kay:

First, I must apologize for the "black hole" I have fallen into with regard to this project. After returning to campus from the training sessions in Oak Ridge, I experienced several problems with the communications software and never did get the stuff to work. By the end of our winter quarter I had missed some important opportunities to work with a small group of science faculty and my own responsibilities within the Library were shifted to include collection development and management information. I was just never able to return to the project, and the short handedness of our library faculty meant no one else could be assigned to pick up on the GPO/DOE project. My failure to communicate all of this to you is my responsibility and for that I sincerely apologize.

I have filled out the final project evaluation report you have requested and the Finnerty questionnaire of last fall. I hope this information will be helpful belated as it is.

I have enclosed some other materials which I hope you will find interesting. First, there is the printout of the test database that our programmer was finally able to establish on our library system. You will also find some printouts of screens of our ELIS system. These will give you some idea of what the DOE records look like on our OPAC terminals. The "grinder" program referred to in the memos is a program used by WLN to input our OCLC records into the EWU/WSU library database. This "grinder" routine turned out to be the single most costly obstacle to inputing the DOE records into our "catalog." It proved to be simply too costly for both of our institutions.

For these reasons and for those noted in the Minnesota letter of November 1991, I would urge you to consider working with a party such as OCLC to load the DOE database

THE LIBRARY
MS-84, Documents Department • Cheney, Washington 99004 • (509) 359-7894

on such systems as "First Search." This type of access to the DOE database would probably avoid the heavy conversion costs required to load the DOE records on conventional MARC systems and would probably require much less revision, if any, of the COSATI record.

Again, I apologize for my extended silence. I still believe that this project was very much worth doing and that DOE is to be commended for taking this kind of initiative.

Sincerely,

Jay Weston Rea

Jay Weston Rea
Administrative Assistant for
Collection Development and
Documents Librarian

Copy: V. Louise Saylor
Dean of Libraries

EMPORIA STATE UNIVERSITY
1200 COMMERCIAL EMPORIA, KANSAS 66801-5087 316/343-1200
WILLIAM ALLEN WHITE LIBRARY

August 21, 1991

Sutton Kay
Project Manager, OSTI JCP/GPO Pilot Project
U.S. Dept. of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831

Dear Mr. Kay:

As a participant in the recent OSTI JCP/GPO Pilot Project, there are several additional comments I would like to make regarding the project. There were some very good things about the project even though it may not have turned out as you had hoped. Size of participating institutions was probably a major factor, and this will doubtless be reflected in the returned final questionnaires.

First, you are to be complimented on the staff personnel who were involved with the pilot project. It was gratifying to meet such knowledgeable, personable and gracious people, and I will always remember that Southern hospitality.

Second, I thought the week was very well planned, and your choice of accommodations was excellent. You are probably not used to a group of librarians spending a week on your premises, and it was fun to have some entertainment as well as to learn more about DOE resources and services. My only regret was that no short trip to the Great Smokies was included, because they seem so beautiful, and it was my first trip to the Knoxville area.

The manuals were very detailed, and displayed an enormous amount of work and organization. I know the difficulty in writing such documents. There were spots where the instructions were hard to follow once I returned to Kansas, but that is to be expected in any such endeavor.

The wonderful gift of the International Energy Subject Thesaurus was totally unexpected, and it has been added to our documents collection. It will be useful as we do on-demand DIALOG searches in DOE Energy. Also, Emporia State University is home to the School of Library and Information Management, and those students are always interested in all types of research tools.

Another bonus was the weekly mailing of the Reports Received List. I found this bibliography of great benefit since it can be easily routed to physical science professors on the campus, and photocopied

for other interested individuals off-campus. I will miss this resource. Because this is a small liberal arts university, the in-depth research for which the DOE reports are probably most useful simply are not needed often or with any real speed. Therefore, the weekly list was quite adequate for informing our science faculty about the availability of selected reports.

Another "plus" was the deepened appreciation and understanding I received about the organization and contents of these reports. I am sure they will be used more in my library simply because my own awareness has increased.

Finally, I must go back to the warm and friendly people who worked on this pilot project. Regardless of the outcome, it was a great experience, and I want to thank you and all who were involved for your hospitality and generosity in providing such an opportunity for the selected group of depository librarians.

Sincerely,

Nannette P. Martin

Nannette P. Martin
Head, Government Documents Dept.

cc: Jane Bartlett, GPO/LPS

THE
OKLAHOMA
DEPARTMENT
OF
LIBRARIES

200 NORTHEAST 18th STREET
OKLAHOMA CITY, OK
73105
PHONE 405 521-2502
TWX 910-831-3178
WATS 1-800-522-8116

Allen Wright
Memorial Library Building

F. Sutton Kay
Project Manager
GPO/DOE Pilot Project

August 13

I am enclosing a supplement to my questionnaires to flesh out the qualitative data they will provide you. First, let me apologize for their lateness; it was not intentional.

Before we loaded our shared cataloging records on our online system--which is also available to any library in our state--DOE reports were available bibliographically only through using the ERA or our NTIS CD-ROM. This limited their use to those searching specifically for energy data, and because of the formidable nature of ERA, tended to be technical information users only. Downloading the cataloging data has caused our DOE fiche to be used for general, non-technical information uses and has also enchanced our usage for technical info users as well. We have averaged five questions per week for them since we have downloaded the records. This is a big increase.

We have also promoted DOE reports in five of our six bibliographic newsletters that we publish and distribute within the state. About 40% of those promoted have been requested.

The ability to do online searches on DOE/ITIS is a service we have publicized to every library in our state through our state library newsletter, the ODL Source. We have received six requests from other libraries to conduct searches for them. This fall, working with a librarian from that institution, I had intended to promote the use of online searching to the faculty, staff, and students of the University of Oklahoma Energy Center. If DOE/ITIS is still available to us then, I will do this in September. They could potentially become a big user of this service, since the Univ. of OK library also receives DOE microfiche, and has since the AEC days.

THE
OKLAHOMA
DEPARTMENT
OF
LIBRARIES

200 NORTHEAST 18th STREET
OKLAHOMA CITY, OK
73105
PHONE 405 521-2502
TWX 910-831-3178
WATS 1-800-522-8116

Allen Wright
Memorial Library Building

Sorry about the gatewaying, but we tended to use our NTIS CD-ROM for this purpose, as well as the reasons of lack of time that happened to me.

I am enclosing some exhibits of how we have promoted the pilot project here. If I had had more time during this period, I could and would have done more.

In my opinion, despite a slow start not only by my library but apparently by almost everyone else, I believe the project was a success. It enabled the depository libry community to access and utlilize DOE microfiche in a more efficient manner that it ever has before. It has also been an educational process for most of us. We have learned a lot about electronics that we did not know before. To sum up: the DOE pilot project has been an exemplary project.

Thank you,

Steve Beleu

Steve Beleu
Head, U.S. Government Information Division

P.S. Give Elaine Duncan a raise. She was very patient with me during all of my foibles concerning downloading.

sterling c. evans library

texas a&m university
college station, texas 77843-5000
409-845-8111

P. Sutton Kay
Project Manager, DOE/OSTI
Department of Energy
Office of Scientific and Technical Information
Post Office Box 62
Oak Ridge, TN 37831

Dear Mr. Kay:

This is to inform you that we have received the first tape of COSATI records. As you know, it was Evans Library's decision to participate in this project by receiving the records on tape rather than by downloading. We do not intend to use these records for cataloging, therefore downloading would be an inefficient mechanism for getting records into our database. It is our intent to use the records as an information resource for our staff and patrons similar to other reference databases we have loaded, utilizing NOTIS' Multiple Database Software (MDAS).

In reviewing the information that we have been sent, we have noticed that the format of the records we expect to receive is not consistent with the USMARC Format for Bibliographic Data. Some of the inconsistencies may not matter since we will not be cataloging from this data, but others will have a significant impact on our ability to load the records using existing software. Therefore, we have determined that we will have to have conversion software written for us that we bring these records into conformance with the basic MARC format.

The changes being anticipated are:

LDR	Byte 11 Subfield code count	change to "2"; currently the value is "1" which is incorrect since two characters are used to represent a subfield code
001	Record key	absence of a record key may prevent correct processing of the records; what variable field contains the key of these records?
037	Perm. Doc. No.	text has to be copied to an 099 field to be displayed as the source field in MDAS

546	Language note	convert to 500 because 546 is authorized only for the Archives/Manuscripts and Serials formats
650	Subject heading	convert indicator 1 from 0 to blank convert indicator 2 from 7 to 0 convert the "/" used to delimit secondary element to "$x" for a topical subdivision delete the text string "$2EDB"

I have a few questions the answers to which will help us in understanding the scope of this project considerably:

1. How many records are on the tape we just received? That information is not on either the external tape label or on the printout included with the tape.

2. How many tapes will be received during the project?

3. How many records would we receive on a monthly update tape? How many of those records would be adds; how many updates to previously received records?

4. Why is there no 001 field in the record? If updates are received, how would matches be determined for replacing the existing records with the update?

5. Do COSATI records ever contain summary, contents, or abstract data?

6. Why was a significant USMARC defined LEADER value coded incorrectly: LDR Byte 11 should always be set to "2" to indicate that two characters are used to represent a subfield delimiter? According to printouts of the record, two characters are used, but the leader specifies that only one is really used. This is the most significant discrepancy between your data and USMARC standards and may very well result in an inability for anyone to process the data as is.

We look forward to your prompt reply, in order for our programmer to be able to begin his work. Once we have loaded a tape, we will let you know since your staff may wish to dial into our database to evaluate our approach. If your staff have specific questions, please contact Michele Dalehite or Kathy Jackson at 409-845-8111.

Sincerely,

Irene B. Hoadley
Director

UNIVERSITY OF MINNESOTA

Twin Cities Campus *University Libraries* *Minneapolis, MN 55455*

November 18, 1991

Dear Participants in the GPO/DOE Pilot Project:

Like many other participants in the GPO/DOE Pilot Project, we had considerable difficulty loading the DOE records in our online catalog. Since we were ultimately successful, I thought it might be useful to share our experience with you. We have loaded all the records we have received and have begun to get reaction from our staff and users. From our point of view, tape loading the DOE records into our catalog may prove to be the most valuable aspect of the project. We hope that the DOE will continue to supply records; however, we believe that some errors must be corrected first.

The first set of problems we uncovered are instances of failure to follow MARC format. While the content of these records may well differ from typical cataloging records, it is our understanding that the structure of the records should follow standard MARC format. I have written to the project manager, Sutton Kay, explaining the errors, and stating that we believe the DOE should correct them before the records are widely distributed. The three types of errors are as follows:

1) Records are not correctly blocked.

   The maximum block size for MARC format records is defined as 2048 characters. The length of the block for these records is simply the length of the record, which often exceeds 2048 characters. This means that they cannot be processed by a typical MARC conversion program.

   When the generic NOTIS conversion program attempts to process a record which is longer than 2048 characters, it takes the first 2048 characters from that block, and the remaining characters from succeeding block(s) (actually succeeding record(s)). In almost all cases, the resulting concatenation is unprocessable, and all the affected blocks are dropped. This means that not only the long record, but succeeding record(s) are lost.

We modified the generic NOTIS conversion program to process a single block at a time, regardless of its length. Another alternative would be to reblock the records correctly before converting them.

2) Field addresses are incorrect because of errors in the leader and directory.

First, the base address of data given in the leader should be equal to the sum of the lengths of the leader and the directory, as specified in US MARC Format for Bibliographic Data, leader, p. 6. The base address in these records is consistently one greater than that sum. Another way of stating this is to say that the first byte in a record is counted as "1," rather than "0."

Second, the starting character position for the first data field given in the directory is "00001." It should be "00000," as shown in both the example in US MARC Format ... and on page 42 of the document "A Translation Table to Convert DOE/OSTI - COSATI Bibliographic Records to MARC-LIKE-FORMAT Records."

The combination of these two errors means that to calculate the actual address of a field, one must subtract two from the address calculated using the leader/directory information.

Obviously, a conversion program cannot process a field correctly if it begins processing at the wrong point. We have modified the generic NOTIS program so that addresses are correctly calculated.

3) 008 fields are missing an end of field mark.

Since this field is defined as fixed length, a typical MARC conversion program will consider these fields to be invalid and reject them. The consequences of the absence of an 008 field will vary from system to system, but will generally be serious.

Since NOTIS does not carry end of field marks internally, the generic NOTIS conversion program deletes the last character in every field. The 008 field is then one

character too short, and is rejected. Records without 008 fields can be loaded in NOTIS, but they cannot be indexed, since values from the field are included in index entries.

We have modified the generic NOTIS conversion program to eliminate deletion of the final character in the 008 field only.

While deviations from MARC format will affect all participants, other issues we have had to deal with may or may not be problematic at other sites. These include:

1) multiple files on tapes, variable number of files per tape, unknown number of records per file

Though this is not a requirement of MARC format, most of us are used to receiving a single volume and single file of records on a tape, and our processing routines are generally set up accordingly. We initially discovered the presence of multiple files by accident. Then we ran the first tape off the reel when we set up our program to simply keep searching for additional files.

It would be helpful if the DOE could concatenate all records in a single file. As an interim measure, we asked the DOE to provide an external label showing the number of files and the number of records per file on each tape so that we could be certain we had processed all records. The tapes we received toward the end of the project did have these labels.

2) Long records

A very small number of records exceed the length limit of 8192 characters which we have currently set in our NOTIS system. While we need to raise this limit for a variety of reasons, we will not be able to do so soon. Long records are simply rejected by the NOTIS generic conversion program, so we lose them entirely. They may cause other problems in other systems.

3) No 001 fields

The NOTIS conversion program expects an 001 field in each record, so instructions for processing 001 must be commented out. Other conversion programs may also require 001 fields.

4) Call numbers

Since libraries file these reports differently, call number processing will vary. We are using data in the 086 subfield a plus the first subfield z as our call number. We have modified the generic NOTIS conversion program so that the first subfield delimiter and code z in the field as supplied

by DOE are converted to a single blank before call number creation begins. The conversion program then picks up both the SuDoc stem and the report number from the extended 086 subfield a, and converts it to NOTIS A22 subfield b. (Without this change, only the SuDoc stem in subfield a gets converted.)

We are willing to share the version of LBC90, the older NOTIS conversion program, which we used to load these records with any other NOTIS site. I would also be happy to attempt to answer any further questions you may have. You can reach me by:

Phone: (612) 625-0107
Fax: (612) 625-3428
Bitnet: c-meye@uminn1 (That last character is a "one.")
Internet: c-meye@vm1.spcs.umn.edu (That's another "one.")
Mail: 170A Wilson Library
309 19th Ave. South
Minneapolis MN 55455

Sincerely,

Christina Perkins Meyer

Christina Perkins Meyer
Head, Database Management Division
Central Technical Services

cc: Julie Wallace
Gary Fouty
Charlene Mason
Mary Frances Collins

UNIVERSITY OF MINNESOTA
TWIN CITIES

University Libraries
Minneapolis, Minnesota 55455

July 30, 1991

Sutton Kay
DOE/OSTI
P.O. Box 62
Oak Ridge, Tennessee 37831

Dear Mr. Kay:

Julia Wallace and Gary Fouty have asked me to tell you about the University of Minnesota's experiences in attempting to load the DOE records supplied as part of the GPO/DOE Pilot Project. We have managed to load a small set of records in our NOTIS test file, and hope to load all of the records we have received to date in our public catalog soon. Once we have solved the remaining problems, we will share our experience with other participants. The information will of course be most relevant to other NOTIS users, but some of it may be useful to others as well. Meanwhile, I would like to point out some problems which I believe DOE should deal with.

The problems which concern us most are deviations from MARC format. It is our understanding that while the content of the records may differ from typical cataloging records in various ways, DOE intends to follow MARC format in the structure of the records. We therefore believe that these errors should be corrected before the records are widely distributed. We have identified the following problems:

1) Records are incorrectly blocked.

The maximum block size for MARC format records is defined as 2048 characters. The length of block for these records is simply the length of record, which often exceeds 2048. Longer records cannot be correctly processed by a standard MARC conversion program.

DOE, rather than users, should reblock the records. Records may be structured in one of two ways. Blocks may be of variable length with a maximum of 2048 characters, so that there is never more than one record in a single block and records span blocks only if they are longer than 2048 characters. Or block length may be fixed at 2048, with multiple records or parts of records in one block, and many

or most records spanning blocks. GPO or LC staff should be able to provide further details.

2) Field addresses are incorrect because of errors in the leader and directory.

First, the base address of data given in the leader should be equal to the sum of the lengths of the leader and the directory (See US MARC Format for Bibliographic Data, leader, p. 6.) The base address in these records is consistently one greater than that sum. Another way of stating this is to say that the first byte in the records is counted as "1," rather than "0."

Second, the starting character position for the first data field given in the directory is "00001." It should be "0000," as shown in both the example in the US MARC Format for Bibliographic Data, Directory, p. 2. and the same example on page 42 of the document "A Translation Table to Convert DOE/OSTI - COSATI Bibliographic Records To MARC-LIKE-FORMAT Records."

The combination of these two errors means that to calculate the actual address of a field, one must subtract two from the address calculated using the leader/directory information. Users of the records should not need to perform this added step; rather, DOE should supply correct leader and directory entries.

3) 008 fields are missing end of field marks, which have been supplied for all other fields.

Since this field is defined as fixed length, a typical MARC conversion program will consider these fields to be invalid and reject them. In NOTIS, records missing 008 fields cannot be indexed; in other systems, the absence of 008 fields may have other serious results.

DOE should supply an end of field mark for 008 fields, as for all other fields except the final field in each record, where the end of record mark also serves to indicate the end of field.

Though it is not a requirement of MARC format, most of us are used to receiving a single volume and a single file on a tape. Our processing routines are set up accordingly. DOE is supplying a variable number of files per tape. Apparently, each file is a week's worth of records. It would be helpful if DOE could concatenate all records for a month into a single file for each tape. If this is not feasible, each tape should definitely have an external label which gives the number of files on the tape and the number of records (logical and physical) per file. We can be certain that we have processed all files and all records, and the tape will not run off the reel while the program searches for yet

more files.

The remainder of the problems we have encountered are NOTIS-specific or Minnesota-specific. Being a beta site always has its frustrations, but we are still looking forward to getting our patron's reactions to these records.

If I can answer any questions or provide further information, please let me know.

Sincerely,

Christina Perkins Meyer

Christina Perkins Meyer
Head, Database Management Division
Central Technical Services

170A Wilson Library
309 - 19th Ave. South
Minneapolis, Minnesota 55455
(612) 625-0107

cc: Charlene Mason
Julia Wallace
Gary Fouty

[University of Minnesota]

August 27, 1991

Sutton Kay
Project Manager
GPO/DOE Pilot Project Coordinator

Dear Mr. Kay:

I apologize for the lateness of this questionnaire. The fact is, it came in an envelope just like the "Reports Received List", many of which I did not open until today. I had been wondering when we would evaluate the project. Now I know. We would have done it in June if I opened my mail. Although it is probably too late to be of any use, I will send it along anyhow.

As you know from separate communication from our technical people we had considerable difficulty loading the cataloging data into our system, but we have now succeeded and I hope we can continue to receive that data. To my mind that is the most valuable part of the project. We have found that when we loaded the GPO tapes into our OPAC the use of government documents, and in my library the NASA fiche in particular, rose dramatically. I think the same will be true with energy. Unlike many sites, we chose to merge the data into our OPAC rather than making it a separate file. I think this is the key to success. As we have found with the NASA material, users will then find good documents in the course of searching, without having to say, oh, I wonder if NASA or DOE or GPO or whoever, might have produced some useful documents.

As for the database searching and the gateway, they did not suit our needs very well. Many of the reasons are spelled out in the questionnaire -- the need to become proficient in a new search language, the LACK of need for great timeliness, the ability to search the whole file (well most of it) conveniently on Dialog or STN. In the latter case we get a nice discount for our University clients that is a major consideration. Another major problem is the security arrangement that permitted us only one password. I understand the need for this (more or less), but it just simply make the system useless for people in an environment like ours. I am one of six people working the reference desk on a rotating basis in a general physical science/engineering library. For the rest of the staff to think about a special database, find me, or refer users to me is just not practical. It just does not fit our circumstances.

I have two further suggestions, if you are not tired of getting advice from Minnesota (much of it belated, at that). I think this project could have benefitted from more prior consultation with libraries like those to be in the pilot. Just in the Knoxville area, with UT and other institutions, you have knowledgeable people who could have briefed you on the needs of libraries different than the DOE facilities you are most familiar with. This would have made the planning and implementation go more

smoothly. Second, there could have been more communication during the course of the project. As we all fumbled independently with problems of tape formats there was only some ad hoc telephoning among some of the participants. Similarly, with the well-developed e-mail system available, some progress reports from you to the rest of us would have been nice. Perhaps even an announcement that a questionnaire was on its way (was I the only that missed it or failed to respond?).

Overall I think this has been a useful and interesting project. I certainly enjoyed my visit to Oak Ridge in January, and I know both our Library and I have benefitted from the experience. I think DOE stands to gain as well. Hopefully some aspects of the project, particularly the provision of cataloging data, can continue.

Sincerely,

Gary Fouty

Gary Fouty

[University of Minnesota]

January 31, 1992

Sutton Kay
Project Manager
GPO/DOE Pilot Project Coordinator

Dear Mr. Kay:

The gist of this letter is the same as my letter of August 27. My opinions have not changed, so I will restate them for the record. I will add my surprise to be making a final evaluation of the project seven months after it ended.

And let me repeat some written comments to a couple of the questions. In question 1, we will continue to see increased use of the DOE collection IF we can continue to receive cataloging data. Otherwise, we will strip off the few months of data we now have in our OPAC and usage will revert to former levels. In 11, we would prefer downloading via high-speed network like Internet. Second choice would be magnetic tapes, if properly labeled and formated. The downloading via telephone/modem was slow, error-prone and very time-consuming, but I suppose we would consider it as a last resort. In 12, I rated the cataloging data itself. As we have indicated, the formatting of the data in non-standard MARC on unlabeled tapes was not satisfactory, although we coped. In 21 I have listed the positions involved but cannot even estimate a cost. The time spent was simply too fragmented and interspersed with other activities. Whatever the time actually was, it was more than it should have been.

As you know from separate communication from our technical people, we had considerable difficulty loading the cataloging data into our system, but we have now succeeded and I hope we can continue to receive that data. To my mind that is the most valuable part of the project. We have found that when we loaded the GPO tapes into our OPAC the use of government documents, and in my library the NASA fiche in particular, rose dramatically. Our experience with the DOE data, although on a much smaller scale, has been very similar. Unlike some sites, we chose to merge the data into our OPAC rather than making it a separate file. As we have found with the other government material, users will then find good documents in the course of searching, without having to say, oh, I wonder if NASA or DOE or GPO or whoever, might have produced some useful documents.

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science/engineering library. For the rest of the staff to think about a special database, find me, or refer users to me is just not practical. It just does not fit our circumstances.

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Overall I think this has been a useful and interesting project. I certainly enjoyed my visit to Oak Ridge in last year, and I know both our Library and I have benefitted from the experience. I think DOE stands to gain as well. Hopefully some aspects of the project, particularly the provision of cataloging data, can continue.

Sincerely,

Gary Fouty

Gary Fouty

West Virginia University

Evansdale Library
P.O. Box 6105
Morgantown, West Virginia
26506-6105

To: Hal Shill, Dean Jackson, JoAnn Calzonetti, Natalie Rutledge

From: Kathy Key

Date: 8-22-91

Re: GPO/DOE Pilot Project

Enclosed are copies of the two questionnaires I filled out for the GPO/DOE Pilot Project. The first questionnaire is very different from the second one in the nature of the questions.

We only participated in two of the three sectors listed on the second form. We applied for participation as a discretionary library and so did not participate in the Shared Cataloging Study. We did not participate in the ITIS Communication Gateway Project, either, because we did not have anyone who wanted to pay for a Dialog search of the Energy Database. All of our users were glad to get the discounted current window of 12-14 months.

It occurred to me at the end of the project, that we could have produced bibliographies for distribution to interested parties without their having asked for them. Another library participating in the project, Oklahoma State Library, produces bibliographies in order to market the library and its documents. It might be appropriate for us to produce bibliographies, if they are not already available, on mine land reclamation, acid mine drainage, and clean coal technology. It would require funding. If any of you would like such bibliographies to promote the library let's talk about it.

While we typically do only a few Energy Database Searches a year, we are still surprised that we did not have more people wanting discounted Energy Database searches. We made publicity efforts by sending letters to appropriate people on and off campus. The librarians made efforts to solicit searches on the database. We told users researching in energy-related areas of agriculture, engineering, law, or environment that there was a great deal of relevant information on the database, but usually they did not wish to pursue the issue. I wondered if the DOE has an image problem, since so much of their funded research is nuclear and/ or defense related, yet that is by no means the majority of this multi-disciplinary database. The COMER move was another factor that made us think the database would be more utilized.

During the study, the relative lack of use made of our extensive collection of DOE microfiche, Energy Research Abstracts, and the Energy Database seemed almost inappropriate, since energy is so important to this state. My impression is that the vast majority of our energy questions are environmental and occupational, and users perceive other bibliographic resources as more important.

When we get our NTIS trial this September, we will be able to give the DOE fiche another chance to be used. However, since the NTIS database derives its indexing second-hand from the DOE, and re-manipulates it, it tends to be out-of-date, and being on a quarterly CD-ROM, it's even more behind.

I am a big fan of the DOE Energy Database, since the indexing, abstracting, and bibliographic control seems more current, consistent, and complete than that of many of the other government produced databases. Additionally the relatively unique feature of "up-posting" from narrow to broader descriptors seems to be one of the answers to more intelligent search systems. All project participants were able to see the facilities, get an overview of procedures, and meet the people responsible for the indexing and processing. I'm interested in improving our access to technical report literature at WVU, and believe that participating in this project has been beneficial to my education in this area. While I feel that our participation was worthwhile to us in the long run; I believe that the DOE Office of Science and Technology did not receive enough data in return from our participation.

Appendixes K–N

(Component II)

APPENDIX K

Depository Library Use of Alternative Media for Full-Text Dissemination Questionnaire with Responses

OVERVIEW

The U.S. Government Printing Office (GPO) and the U.S. Department of Energy Office of Scientific and Technical Information (OSTI) are conducting a joint study of all Federal depository libraries on the potential use of media other than microfiche for the dissemination of scientific and technical full-text information. This questionnaire has been designed in two parts: general library information and library technical capabilities. Please have the person with the most knowledge about each subject (if not the same) complete the appropriate section.

The questionnaire should take no more than 30 minutes to complete. If you have any questions, please contact Amy Finnerty at (615) 576-6800. Please return the completed questionnaire in the enclosed postage-paid envelope by July 17, 1991. If the envelope is missing, please return to:

Amy Finnerty
DOE/OSTI
P.O. Box 62
Oak Ridge, TN 37831

FAX: (615) 576-2865

Your full cooperation is important and will enable GPO and OSTI to evaluate their dissemination programs for full-text information.

PART I. LIBRARY INFORMATION

Depository Library number: _____

Depository Library name: _____

Name, position, and telephone number of person completing this part of questionnaire or other contact person:

Name: _____

Position: _____

Telephone: _____

1. Today's date: ___ /___ /___

2. Which of the items below best describes your library? *(Check one.)*

   a. [547] Academic library
   b. [233] Public library
   c. [42] Court library
   d. [30] Federal agency library
   e. [91] Law school library
   f. [32] State agency library
   g. [20] Other (Specify [19 responses])

   Did not answer [69].

3. Which of the following specialized branch libraries do you have? *(Check all that apply.)*

   a. [109] Science
   b. [42] Education
   c. [53] Engineering
   d. [130] Law
   e. [59] Medicine
   f. [213] Other (Specify [198 responses])
   g. [665] Not applicable/No branch libraries
   Did not answer [38].

4. How much of the library's budget is available for each of the following types of acquisitions? *State in terms of both dollar amount and percent of total library budget.*

	Don't know	Dollar amount	Budget percent	Actual	Estimated	Not sure	Did not answer
a. Material acquisitions (e.g., books, microfiche)	307	$834,863	33.47%	213	140	263	[141]
b. Equipment acquisitions (e.g., computers, microfiche readers)	424	$91,999	4.31%	135	106	174	[225]

5. If your library is affiliated with a large institution or organization, does that organization/institution currently have a U.S. Department of Energy (DOE) research and development contract in place? *(Check one.)*

   a. [76] Yes
   b. [544] No
   c. [346] Don't know/Not sure
   Did not answer [98].

6. Does your library currently receive DOE technical reports in microfiche form? *(Check one.)*

   a. [100] Yes, we receive all available DOE microfiche
   b. [321] Yes, we receive selected DOE microfiche
   c. [38] No, but we are interested in receiving these microfiche (Go to question 8.)
   d. [569] No, we have no interest/need for these microfiche (Go to question 9.)
   e. [19] Don't know (Go to question 9.)
   Did not answer [17].

7. Where are DOE microfiche physically located? [If located in a branch library, please specify the specialty of the branch (i.e., engineering)]. *(Check one.)*

   a. [7] Not applicable
   b. [349] Main library
   c. [34] Branch library (Specify [33 responses])
   d. [6] Dispersed among several locations (Specify [4 responses])
   e. [17] Other (Specify [17 responses])
   f. [0] Not sure
   Did not answer [8].

8. If you could receive full-text DOE technical reports in some medium or media other than microfiche, to what extent would you prefer each of the following media? *(Check all that apply, but only one box per line.)*

	Very greatly prefer	Greatly prefer	Moderately prefer	Somewhat prefer	Do not prefer	Don't know	Did not answer
Download from remote, time-sharing database/ service	31	36	75	62	144	37	[74]
Download from internal host (mainframe or minicomputer)	14	24	41	39	217	39	[85]
Optical Disc Platters	8	10	28	28	217	74	[94]
Compact Discs	111	112	92	57	47	15	[25]
Floppy Disks	15	33	68	76	177	15	[75]
Magnetic Tape	4	13	15	32	273	32	[90]
Paper	54	46	62	59	163	10	[65]
Other (Specify) [6 responses]	2	5	0	1	6	14	[431]

9. Does your library maintain more than the required current five years of depository microfiche? *(Check one.)*

   a. [702] Yes (Specify number of years maintained [635 responses])
   b. [291] No
   c. [41] Not sure

   Did not answer [30].

(THE FOLLOWING QUESTIONS APPLY TO *ALL* TYPES OF MICROFICHE OWNED.)

10. How are your filing systems for microfiche and books/paper publications organized? *(Check all that apply, marking at least one box in each column.)*

	Microfiche	Paper copy
a. By subject or subject category	124	217
b. By Dewey Decimal, SuDocs, or other classification system	962	997
c. By type of publication	179	140
d. By vendor [Microfiche 116 responses]	53	13
e. Other filing method (Specify [Paper 71 responses])	122	75
f. Don't receive	2	0
g. Don't file	0	1
h. Don't know/Not sure	0	0
Did not answer	[23]	[28]

11. Within the past six months, about how frequently did patrons request scientific and technical information (STI)? *(Check one.)*

a. [168] Patrons made at least a daily request for STI.
b. [112] Patrons requested STI less than daily, but more often than once a week.
c. [64] Patrons made a request for STI at least once a week.
d. [104] Patrons requested STI less than once a week, but more often than once a month.
e. [69] Patrons requested STI at least once a month.
f. [143] Patrons requested STI less than once a month.
g. [231] Patrons did not request STI within the past 6 months. (Go to question 14.)
h. [137] Don't know/Not sure (Go to question 14.)
Did not answer [36].

12. When you received requests for STI, about what percentage of the time did patrons request specific time periods? (e.g., "Do you have any information published within the last year on rocket fuels used in the space shuttle program?") *[Enter Percentages (0 to 100%) to total 100%.]*

a. [43.89] % of the time requesters specify time periods. H = 100 L = 0
b. [56.11] % of the time requesters do not specify time periods. H = 100 L = 0
100 % (304 responses)
c. [320] Not sure/No basis to respond.
Did not answer [36].

50% median
50% values
100%

13. For those requests you received that did specify a time period, about how often was each period usually specified? *(Check one box in each row.)*

	Very often	Often	Some-times	Rarely	Almost never	Not sure	Did not answer
a. Information less than one year	86	86	70	16	5	5	[14]
b. Information published in past 1-5 years	107	121	40	3	2	4	[5]
c. Information published in past 6-10 years	6	24	119	65	47	8	[13]
d. Information published over 10 years ago	1	3	64	89	95	9	[21]

14. Have you or your patrons experienced any significant difficulties in effectively accessing full-text information on microfiche? *(Check one.)*

a. [463] Yes
b. [564] No (Go to question 16.)
Did not answer [37].

15. What is the nature of this access difficulty? *(Check all that apply.)*

a. [228] Patrons aren't aware of the availability of microfiche
b. [55] Microfiche aren't filed or made available in a timely manner
c. [410] Patrons dislike microfiche format
d. [79] Insufficient number of microfiche readers or printers to meet demand
e. [128] Poor quality of fiche reader or printer equipment
f. [191] Patrons have difficulty locating the information on microfiche
g. [69] Fiche are missing or misfiled
h. [13] Library staff aren't trained in accessing microfiche
i. [94] Other (Specify [80 responses])
Did not answer [3].

16. Do you have any other comments or suggestions related to the dissemination of full-text information? (Please use additional sheets if necessary.)

[179 responses]

Thank you for your assistance.

PART II. TECHNICAL CAPABILITIES

IF YOU DON'T UNDERSTAND A TERM USED IN THIS SURVEY, PLEASE REFER TO THE ATTACHED GLOSSARY. This part of the questionnaire asks you to describe your current and planned technical capabilities for acquiring and accessing full-text information. Please contact Amy Finnerty at (615) 576-6800 if you have any questions.

Depository Library number: _____

Depository Library name: _____

Name, position, and telephone number of person completing this part of questionnaire or other contact person:

Name: _____

Position: _____

Telephone: _____

1. Today's date: ___ /___ /___
   MM DD YY

2. What type(s) of computer(s) does your library use currently and/or plan to use in the next three years? *(Check all that apply.)*

	Use currently	Will use in 3 years	Considering, but undecided	Don't use or plan to use	Did not answer
a. Microcomputer(s)/personal computers	1029	9	3	3	[20]
b. Minicomputers	238	47	0	212	[567]
c. Mainframe computers	396	42	36	193	[397]
d. Remote computers	413	44	38	137	[432]
e. Don't know/Not sure	7	15	6	18	[1,018]

3. How does your library currently use optical disc and compact disc (CD) technology (for all types of data/information)? (Note: This question does not refer to audio compact discs.) *(Check one box in each column.)*

	Optical discs	Compact discs
a. Archival storage only	7	6
b. Search and retrieval of information	45	742
c. Both archival storage and search and retrieval	14	111
d. Other (Specify) [Optical discs 5 responses] [Compact discs 5 responses]	6	13
e. Don't currently own or use	434	88
Did not answer	[558]	[104]

4. How does your library plan to use optical disc and CD technology in the next three years? *(Check one box in each column.)*

	Optical discs	Compact discs
a. Archival storage only	8	3
b. Search and retrieval of information	64	646
c. Both archival storage and search and retrieval	54	227
d. Other (Specify) [Optical discs 19 responses] [Compact discs 7 responses]	22	11
e. Don't plan to own or use	319	24
Did not answer	[597]	[153]

5. Please describe the CD equipment your library currently owns or accesses. *(Check all that apply.)*

a. [426] Single CD workstation, not on a Local Area Network (LAN)
b. [52] Single CD workstation, on a LAN
c. [590] Multiple CD workstations, stand alone
d. [115] Multiple CD players, connected by a network or daisy chain
e. [144] CD jukebox or disc tower, not on a LAN
f. [69] CD jukebox or disc tower, on a LAN
g. [22] Other (Specify [20 responses])
h. [82] None

Did not answer [22].

6. Are any of the workstations in your library used to access a local or remote network? *(Check one.)*

a. [645] Yes
b. [360] No (Go to question 8.)
c. [13] Not sure (Go to question 8.)

Did not answer [46].

7. Describe the way(s) that your library uses workstations to access networks. *(Check all that apply.)*

a. [213] Workstations are connected to a LAN (e.g., library only)
b. [206] Workstations are connected to a Wide Area Network (WAN) (e.g., campus-wide)
c. [558] Workstations have modems to access remote computers (e.g., dial in to DIALOG)
d. [122] Workstations are connected to a minicomputer
e. [237] Workstations are connected to a mainframe computer
f. [5] Don't know/Not sure

Did not answer [12].

8. Does your library currently have, or plan to have within the next three years, access to any of the following network services? *(Check all that apply.)*

   a. [578] TYMNET
   b. [464] INTERNET
   c. [15] Defense Data Network (DDN)
   d. [6] ESnet
   e. [93] NSFNET
   f. [467] BITNET
   g. [234] COMPUSERVE
   h. [197] Other (Specify ___[181 responses]___)
   i. [77] No access/does not apply
   j. [126] Don't know

   Did not answer [42].

9. Please indicate all the methods your library currently uses to acquire full-text information and those your library plans to use in the next three years. *(Check all that apply.)*

	Use currently	Plan to use	Did not answer
a. Download from remote, time-sharing database/service	610	109	[345]
b. Download from internal host (mainframe, minicomputer, microcomputer)	238	133	[693]
c. Optical discs	59	79	[926]
d. Compact discs (i.e., CD-ROM)	711	182	[171]
e. Floppy disks	480	34	[550]
f. Microfiche or microform	917	13	[134]
g. Magnetic tape	100	70	[894]
h. Paper	896	12	[156]
i. Other (Specify) [Use currently 6 responses] [Plan to use 1 response]	13	3	[1,048]

10. For each of the following, please indicate how important this factor would be to your library in selecting a storage/access medium for full-text information. *(Check at least one box on each row.)*

	Very great importance	Great importance	Moderate importance	Some importance	Little or no importance	Not applicable	Did not answer
a. Compatibility with other media used	423	343	150	66	29	17	[36]
b. Compatibility with current hardware owned	563	350	87	20	3	16	[25]
c. Purchase cost	626	319	69	17	1	7	[25]
d. Maintenance/operation cost	505	369	122	26	1	7	[34]
e. Update or subscription costs (if applicable)	548	366	97	16	0	11	[26]
f. Minimal physical storage requirements	232	312	303	140	26	8	[43]
g. Supports simultaneous access by multiple users	240	289	245	163	68	13	[46]
h. Ease of retrieval of information	627	320	71	10	0	5	[31]
i. Other (Specify [26 responses])	22	10	0	0	0	0	[1,032]

11. For each of the following, please indicate how important this factor would be to your library in selecting a user interface for searching, retrieving, and manipulating full-text information. *(Check at least one box on each row.)*

	Very great importance	Great importance	Moderate importance	Some importance	Little or no importance	Not applicable	Did not answer
a. Compatibility with current software/operating systems	517	349	100	31	12	16	[39]
b. Supports simultaneous access by multiple users	294	299	234	117	61	14	[45]
c. Familiarity with user interface	232	330	292	112	33	12	[53]
d. Menu-driven user interface	318	361	224	85	17	12	[47]
e. Easy search and retrieval of information	663	302	44	14	2	6	[33]
f. Fast retrieval of information	336	427	202	50	3	6	[40]
g. Capability to download or extract information for sorting and formatting	283	339	254	102	34	9	[43]
h. Complete representation of information	282	412	201	73	10	16	[70]
i. Information is formatted to conform to expected standards	355	379	181	74	14	12	[49]
j. Capability to print out information in different formats	212	305	311	138	34	10	[54]
k. Accommodates both novice and expert users	546	325	97	38	8	7	[43]
l. Other (Specify [14 responses])	15	6	1	0	0	10	[1,032]

12. All considerations of cost and presently planned acquisitions aside, please indicate on which of the following environments and media your library *prefers* to access full-text information. *(Check one box on each row.)*

	Very greatly prefer	Greatly prefer	Moderately prefer	Somewhat prefer	Do not prefer	Don't know	Did not answer
Electronic Environment							
a. Personal computer (PC)—(stand alone)	297	291	195	69	78	30	[104]
b. PC Local Area Network (LAN)	261	248	148	82	95	117	[113]
c. Mainframe/Minicomputer	98	127	168	96	259	144	[172]
d. Remote networks/Computers	107	183	219	127	143	121	[164]
e. Nonelectronic environment	132	116	153	92	182	78	[311]
Media							
f. Optical disc platters	39	53	71	75	305	310	[211]
g. Compact discs	369	357	163	59	17	31	[68]
h. Floppy disks	64	137	219	191	251	49	[153]
i. Magnetic tape	40	56	99	96	434	136	[203]
j. Microfiche/Microform	81	151 .	282	224	184	20	[122]
k. Paper	255	259	206	111	104	18	[111]
l. Other (Specify [17 responses])	14	5	2	0	15	3	[1,025]

13. Do you have any other comments or suggestions related to the dissemination of full-text information? (Please use additional sheets if necessary.)

[129 responses]

Thank you for your assistance.

APPENDIX L

Alternative Media for Full-Text Dissemination Survey
Open-Ended Comments

Which best describes your library?
Question I.2.g—Other

	Freq.	Percent
State Library	6	31.58
Independent Research Library	2	10.53
Medical Library	2	10.53
Special Library	2	10.53
County Library	1	5.26
Historical Library	1	5.26
Legislative Library	1	5.26
Local Government Library	1	5.26
Museum Library	1	5.26
Non-profit Fee-based Library	1	5.26
Public Law Library	1	5.26
Total	19	100.00

Based on responses from 19 libraries.

What specialized branch libraries do you have?
Question I.3.f—Other

	Freq.	Percent
Music	45	13.08
Art/Architecture/Design	43	12.50
Non-specialized branches/general collections (graduate & undergraduate)	33	9.59
Business/Management/Finance/Administration/Marketing	32	9.30
Life Sciences/Medicine/Health Sciences	27	7.85
Math/Physics/Computer Science	22	6.40
Chemistry	17	4.94
Social Sciences/Cultural Studies	13	3.78
Specialized departments/divisions in main library	13	3.78
Agriculture/Veterinary Medicine	12	3.49
Geography/Maps	8	2.33
Geology/Geological Science	8	2.33
History/Genealogy	8	2.33
Environmental/Earth Sciences/Natural Resources	7	2.03
Media Centers/AV/Study Centers/Information Services	7	2.03
General Science/Technology/Engineering/Research	6	1.74
Humanities	6	1.74
Marine Science/Oceanography/Solar	6	1.74
Law/Law Enforcement/Criminal Justice/Court libraries	5	1.45
State/local collections	5	1.45
Astronomy/Aeronautics	4	1.16
Energy/Energy Sources	4	1.16
Government Documents/Information	4	1.16
Library & Information Science	3	0.87
Physical Sciences	3	0.87
Communications/Journalism	2	0.58
Classified	1	0.29
Total	344	100.00

Responses were received from 198 libraries. Many libraries listed multiple branches.

Where are DOE microfiche physically located?
Question I.7.c

	Freq.	Percent
Branch Library*		
Science/Engineering branch library	29	87.88
Carson Regional	1	3.03
Government publications	1	3.03
Lakewood	1	3.03
Research Institute (Engineering, Aeronautics, etc.)	1	3.03
Total	33	100.00
Dispersed Among Several Locations†		
At local university	1	25.00
Law and Undergraduate Libraries	1	25.00
Main Library and Government Center Library	1	25.00
Engineering, Earth Sciences, Government Documents	1	25.00
Total	4	100.00
Other‡		
Government Documents Collection	7	41.18
Depository stacks/storage room	2	11.76
Microform room	2	11.76
Arkansas State Library	1	5.88
Gardenia Library (branch of County of Los Angeles Public Library)	1	5.88
Law Library Media Room	1	5.88
Library of Science and Medicine	1	5.88
Main library	1	5.88
Reference Department	1	5.88
Total	17	100.00

*Based on responses from 33 libraries.
†Based on responses from 4 libraries.
‡Based on responses from 17 libraries.

If you could receive full-text DOE technical reports in some medium or media other than microfiche, to what extent would you prefer each of the following media?
Question I.8—Other

	Freq.	Percent
"Very Greatly Prefer" Responses*		
Load on government-owned mainframe computer with access available at no cost	1	100.00
"Greatly Prefer" Responses†		
Microfiche	3	75.00
Combinations/options	1	25.00
Total	4	100.00
"Somewhat Prefer" Responses‡		
Comfiche	1	100.00

*Based on response from 1 library.
†Based on responses from 4 libraries.
‡Based on response from 1 library.

Does your library maintain more than the required current five years of depository microfiche?
Question I.9.a—Specify number of years maintained

	Freq.	Percent
All years received for all or selected items	223	35.12
Number of years depends on subject/title	111	17.48
10 to 15 years	87	13.70
Number of years varies	79	12.44
5 to 10 years	41	6.46
15 to 20 years	32	5.04
Number of years depends on need/usage	20	3.15
All years received until superceded/weeded	16	2.52
Number of years depends on agency/department	10	1.57
More than 20 years	9	1.42
All years received as space permits	4	0.63
Not sure	3	0.47
Total	635	100.00

How are your filing systems for microfiche organized?
Question I.10.e—Other filing method

	Freq.	Percent
Alphabetical by title	53	41.73
Report number	16	12.60
Accession number	14	11.02
DOE, NTIS or other agency number	11	8.66
GPO/SuDoc number	5	3.94
Internal library number/system	5	3.94
Dewey/LC	3	2.36
Geographic	3	2.36
Title and date	3	2.36
Series number	2	1.57
Vendor-provided numbers	2	1.57
A few are cut	1	0.79
Available space	1	0.79
Contract number	1	0.79
Date of receipt	1	0.79
Format type of publication	1	0.79
Main entry (non-government documents)	1	0.79
Order number	1	0.79
Size, type (i.e., silver diazo, etc.)	1	0.79
Some large sets are unclassified	1	0.79
Some special collections	1	0.79
Total	127	100.00

Based on responses from 116 libraries. Some libraries listed more than one filing system.

How are your filing systems for books/paper organized?
Question I.10.e—Other filing method

	Freq.	Percent
Alphabetical by title	39	49.37
LC	10	12.66
Report number	8	10.13
DOE, NTIS, or other agency number	7	8.86
GPO/SuDoc call no.	4	5.06
Title and date	3	3.80
Accession number	2	2.53
Vertical file	2	2.53
Form	1	1.27
Geographic	1	1.27
Order number	1	1.27
Supplier numbering	1	1.27
Total	79	100.00

Based on responses from 71 libraries. Some libraries listed more than one filing system.

What is the nature of the access difficulty you or your patrons have experienced in effectively accessing full-text information on microfiche?
Question I.15.i—Other

	Freq.	Percent
Poor quality of microfiche/fiche not legible	27	32.53
Available indexing is inadequate, confusing, or of poor quality	11	13.25
Making copies of fiche is too expensive	6	7.23
Poor quality of fiche reproduction	6	7.23
Fiche are not received in a timely manner	5	6.02
Small print used on fiche is difficult to read and reproduce	5	6.02
Lack of indexes for government fiche	3	3.61
Library doesn't own needed fiche	3	3.61
Fiche are located separately from paper documents	2	2.41
Library doesn't own needed equipment or equipment is of poor quality	2	2.41
Microfiche format is inconvenient/time consuming	2	2.41
Patrons are unable to check out microfiche	2	2.41
Patrons don't know how to operate fiche equipment	2	2.41
Fiche are difficult to browse	1	1.20
Fiche are easily misfiled by students and lost	1	1.20
Fiche indexing is not available in a timely manner	1	1.20
Librarians often overlook microfiche as potential information source	1	1.20
Not all fiche are shown in OPAC	1	1.20
Patrons don't like copying frame by frame	1	1.20
Patrons prefer paper format	1	1.20
Total	83	100.00

Based on responses from 80 libraries. Some libraries listed more than one access difficulty.

How does your library currently use optical disc and compact disc technology?
Question II.3.d—Other

	Freq.	Percent
Optical Disc Responses*		
Computer-assisted instruction	3	60.00
Interactive video instruction	1	20.00
Don't know	1	20.00
Total	5	100.00
Compact Disc Responses*		
Indexes	2	40.00
Loan	1	20.00
Public catalog	1	20.00
Readers Guide	1	20.00
Total	5	100.00

*Both sections are based on responses from 5 libraries.

How does your library plan to use optical disc technology?
Question II.4.d—Other

	Freq.	Percent
Don't know/not sure	13	68.42
Instruction	2	10.53
Interactive video instruction	2	10.53
Audiovisual	1	5.26
Depends on budget	1	5.26
Total	19	100.00

Based on responses from 19 libraries.

How does your library plan to use compact disc technology?
Question II.4.d—Other

	Freq.	Percent
Don't know/not sure	4	57.14
Census	1	14.29
Library catalog	1	14.29
Readers Guide	1	14.29
Total	7	100.00

Based on responses from 7 libraries.

Describe the CD equipment your library current owns or accesses.
Question II.5.g—Other

	Freq.	Percent
Infotrac Periodicals Index on one or more CD workstations	4	20.00
In process of setting up a CD LAN	3	15.00
Mulitple dedicated CD workstations	3	15.00
CD equipment varies by site	1	5.00
CD jukebox on a LAN is planned	1	5.00
Have not received CD workstation yet	1	5.00
Multiple CD workstations on dial-up access	1	5.00
Patent Seidr system	1	5.00
PC w/CD-ROM	1	5.00
Plan to propose disc changes	1	5.00
Two disc towers on a LAN	1	5.00
Wide Area Network (WAN)	1	5.00
Worm jukebox	1	5.00
Total	20	100.00

Based on responses from 20 libraries.

Does your library currently have, or plan to have within the next three years, access to any of these network services?
Question II.8.h—Other

	Freq.	Percent
Sprintnet (formerly Telenet)	59	23.79
OCLC/EPIC	28	11.29
Dialnet	22	8.87
DIALOG	18	7.26
Lexis/Nexis	7	2.82
NREN	6	2.42
Westlaw	5	2.02
ALANET	4	1.61
FIRN	4	1.61
GPO/Hermes	3	1.21
Meadnet	3	1.21
RLIN	3	1.21
VUTEXT	3	1.21
Westnet	3	1.21
WilsonLine	3	1.21
ABANET	2	0.81
BRS	2	0.81
CARL	2	0.81
Datatimes	2	0.81
Dialogue/BAS	2	0.81
Easynet	2	0.81
Ethernet	2	0.81
Internet	2	0.81
Merit	2	0.81
Michnet	2	0.81
Sunynet	2	0.81
Telnet	2	0.81
Western Library Network	2	0.81
WISCNET	2	0.81
Alabama Supercomputer Network	1	0.40
Colorado Supernet	1	0.40
Commercial vendors	1	0.40
CSUNET	1	0.40
DALNET	1	0.40
Diaylonet	1	0.40
Direct dial to network	1	0.40
DOWJONES	1	0.40
Downet	1	0.40
Econet	1	0.40
E-Mail	1	0.40
Freenet	1	0.40
HANNAH	1	0.40
Huskernet	1	0.40
Hytelnet	1	0.40
IHETS	1	0.40
Infomaster	1	0.40
IO	1	0.40
Karenet	1	0.40
LeaNet	1	0.40
Lincnet-n	1	0.40
Local E-mail networks	1	0.40
Login	1	0.40
MEDLARS	1	0.40
MLN	1	0.40
Morenet	1	0.40
Msus/Pals	1	0.40
New Jersey State Data Center	1	0.40
NYSERNET	1	0.40
Odin	1	0.40
Ohiolink	1	0.40
Palinet	1	0.40
Peace Sat	1	0.40
Prodigy	1	0.40
PROFS (University of Illinois)	1	0.40
SEFLINK	1	0.40
Souinet	1	0.40
Spln	1	0.40
State library network	1	0.40
Statenet	1	0.40
SULINET	1	0.40
SURANET	1	0.40
Texas Network TheNet	1	0.40
Timeplex	1	0.40
University of Alaska Computer Network	1	0.40
UUCPNET	1	0.40
VTLS statewide	1	0.40
Well	1	0.40
Zipnet	1	0.40
Total	248	100.00

Note: 181 libraries provided valid "other" responses. Many libraries listed multiple networks/systems used.

Indicate all the methods your library currently uses to acquire full-text information. Question II.9.i—Other

	Freq.	Percent
Interlibrary loan	3	50.00
Download from electronic bulletin boards	1	16.67
Fax machine	1	16.67
Videotape	1	16.67
Total	6	100.00

Based on responses from 6 libraries.

Indicate all the methods your library plans to use to acquire full-text information. Question II.9.i—Other

	Freq.	Percent
Computer loader, hard drives (new technology from SilverPlatter)	1	100.00

Based on response from 1 library.

Indicate how important this factor would be to your library in selecting a storage/access medium for full-text information. Question II.10.i—Other

	Freq.	Percent
"Very Great Importance" Responses*		
Technical documentation/support	4	18.18
Usefulness of information to patrons	3	13.64
Command command language/software	2	9.09
Software for retrieval of information	2	9.09
User friendly software/ease of use	2	9.09
Ability to share data online with other libraries	1	4.55
Adequate equipment	1	4.55
Archival quality	1	4.55
Availability	1	4.55
CD-ROM format	1	4.55
Legibility	1	4.55
Software quality	1	4.55
Time demands on librarian to set up or assist users	1	4.55
Transportability/ability to download information	1	4.55
Total	22	100.00
"Great Importance" Responses†		
Ability to access via Internet or wide area network	2	20.00
Ease of use	2	20.00
Ability to obtain copies of information	1	10.00
Availability	1	10.00
Cost to make copies of information	1	10.00
Hardware cost	1	10.00
Reliability/durability of hardware	1	10.00
Response time of hardware/medium	1	10.00
Total	10	100.00

*Based on responses from 18 libraries.

†Based on responses from 8 libraries.

Indicate how important this factor would be to your library in selecting a user interface for searching, retrieving, and manipulating full-text information.
Question II.11.l—Other

	Freq.	Percent
"Very Great Importance" Responses*		
Price/cost	4	36.36
Consistency of user interfaces across all products	2	18.18
Access via the Internet (highest priority)	1	9.09
Amount of time librarian must spend helping patrons	1	9.09
Content of relevance to public clientele	1	9.09
Contract/subscription provisions	1	9.09
Similarity to widely used commercial products	1	9.09
Total	11	100.00
"Great Importance" Responses†		
Common command language	1	33.33
Price	1	33.33
User's manual	1	33.33
Total	3	100.00

*Based on responses from 11 libraries.
†Based on responses from 3 libraries.

All other considerations of cost and presently planned acquisitions aside, indicate which of the following environments and media your library *prefers* to use to access full-text information.
Question II.12.l—Other

	Freq.	Percent
"Very Greatly Prefer" Responses*		
Online systems/databases	6	50.00
Remote databases	2	16.67
Full-text databases	1	8.33
High-speed data networks	1	8.33
Knowbots	1	8.33
Remote access via Internet	1	8.33
Total	12	100.00
"Greatly Prefer" Responses†		
Hard disk storage	1	25.00
Online dial-up access	1	25.00
Computer loaded hard drives	1	25.00
Bernoulli	1	25.00
Total	4	100.00
"Moderately Prefer" Responses‡		
LAN mass storage 1 GB	1	100.00

*Based on responses from 12 libraries.
†Based on responses from 4 libraries.
‡Based on response from 1 library.

APPENDIX M

Alternative Media for Full-Text Dissemination Survey General Library Comments

Questions I.16 and II.13—Other Comments Related to Full-Text Dissemination

Comments on Archival Issues Related to Full Text

	Freq.	Percent
Concerns about the archival quality of data stored on CD-ROM and optical discs	4	80.00
Microfiche is an effective archival storage medium due to quantity of materials	1	20.00
Total	5	100.00

Comments on Bibliography/Indexing Issues Related to Full Text

	Freq.	Percent
Indexes necessary to make the full text accessible	19	63.33
Would prefer indexes be in paper	1	3.33
CD-ROM is the most practical format since indexing the text can be on one disc	1	3.33
Prefer an online index to technical report material on the Internet	1	3.33
CD index to reports would pull several years together	1	3.33
CD-ROM indexes are better than CD-ROM full text	1	3.33
The general indexing is not always up to date	1	3.33
Need an indexing system as fast and easy to use as the online catalog for the CD-ROM indexes	1	3.33
Want access at low cost, but preferably free, to a bibliographical database in electronic format	1	3.33
Is the bibliographical interface also available?	1	3.33
Indexes/abstracts are ideal for electronic access	1	3.33
Patrons are very happy with computerized indexing, but the majority prefer to turn to paper copies of the information	1	3.33
Total	30	100.00

Comments on Cost/Budget Issues Related to Full Text

	Freq.	Percent
Concerned with costs	10	27.03
Online access can be expensive for the library or end user	8	21.62
Acute and chronic budgetary problems that prevent optional access to microfiche materials are real	8	21.62
Government information created and compiled at taxpayer expense should be available at no cost	2	5.41
We do not have the funds to pay for electronic remote access	1	2.70
We can no longer afford to buy and store all full-text information in paper or microform copy	1	2.70
Would like to see government data put on Internet (or NREN) with minimal or no access cost to the user	1	2.70
The cost of publications in electronic full text is unreasonable compared to other formats	1	2.70
The ideal situation would be to have free dial-up access and be able to print out full-text document	1	2.70
Provide the libraries with equipment	1	2.70
Only large research and well-endowed private institutions seem able to afford the equipment to access information utilizing the newest technology	1	2.70
Some don't want to pay for it; others truly cannot afford it	1	2.70
Serious budget constraints prohibit us from purchasing many expensive computerized products	1	2.70
Total	37	100.00

Comments on Equipment Issues Related to Full Text

	Freq.	Percent
Don't have money for equipment	9	36.00
Would have to purchase a lot of new CD-ROM equipment	3	12.00
Each type of equipment adds to expense	2	8.00
Suggest you provide the libraries with equipment	2	8.00
Already have microfiche equipment	1	4.00
Consider making full-text information available in a variety of electronic formats	1	4.00
Cost of access probably most important factor for in-house equipment	1	4.00
Equipment was donated	1	4.00
Fiche equipment is less expensive than CD equipment	1	4.00
Have option available to purchase equipment at reasonable rate	1	4.00
If we had the equipment, we could prefer CD-ROM	1	4.00
Poor quality of existing fiche reading and printing equipment	1	4.00
Space for equipment limited	1	4.00
Total	25	100.00

Comments on Search/Retrieval and Browse Capabilities Related to Full Text

	Freq.	Percent
Ease of retrieval is extremely important	8	29.63
Have documents available on the Internet that can be retrieved via ftp	1	3.70
Easiest method of retrieval, aside from paper format, would be fiche	1	3.70
Current major difficulty with CD-ROM products is the variety of search protocols in existence	1	3.70
Searching material online would improve browsability	1	3.70
Use a common command language for searching information in electronic format	1	3.70
A full text should be searchable using a simple program	1	3.70
Include retrieval software similar to commercial products widely used in libraries (e.g., Dialog, SilverPlatter)	1	3.70
CD-ROM technology provides accessibility which is enhanced by the quality of the search software	1	3.70
Difficult to browse microfiche because of out-of-date catalogs from GPO	1	3.70
It would be more difficult to "browse" machine readable formats without a keyword search software	1	3.70
Full-text searching is certainly a plus	1	3.70
Although our users may be educated, they do not necessarily know how to retrieve information	1	3.70
Electronic storage would require indexing, whereas other forms of indexing are already available	1	3.70
Would like improved Boolean search technique for full text	1	3.70
Remote searching would be viable if the end-user could download the information without staff assistance	1	3.70
Our concern with full-text distribution on CD-ROM is that it might not be searchable	1	3.70
Some of the material we have received is very difficult to use because keywords, basic search protocols	1	3.70
Our library would be willing to wait 3,4,6 or 12 months for information in exchange for ease of searching	1	3.70
Online access is far preferable to fiche/film access in search/retrieval area	1	3.70
Total	27	100.00

Comments on Software Issues Related to Full Text

	Freq.	Percent
GPO products need to have better searching software	2	8.00
Computer software and hardware needed to support government databases are too expensive	1	4.00
Include retrieval software similar to commercial products widely used in libraries	1	4.00
Full-text information on CD is not useable without appropriate software	1	4.00
Cannot afford to add more computer workstations or buy new software	1	4.00
Need retrieval software to get information from CD	1	4.00
Difficult to "browse" machine readable formats without a keyword search software	1	4.00
Most CDs do not always use the same software	1	4.00
Government information being published through GPO on CD-ROM is without adequate software instructions	1	4.00
CD-ROMs and operational software would be free to the library	1	4.00
Software should enable access to specific page numbers or tables	1	4.00
Multiple formats and software approaches might be advisable	1	4.00
Barrier is workable software and limited number of computers available	1	4.00
DOE should dispense dissemination information via microfiche in favor of disseminating it via CD-ROMs	1	4.00
CD-ROM software to run disc takes up a great deal of HARD DISKSPACE and requires special installation	1	4.00
In developing program software for CD-ROM provide the program ON EACH DISC and a simplified user manual in paper or in a README file on the disc	1	4.00
Information in an electronic format is welcome, but software must be provided as part of the package	1	4.00
Software should be logical and not cumbersome	1	4.00
We cannot afford to add more computer workstations or buy new software	1	4.00
Consistency regarding commands/software, etc	1	4.00
User friendly and easy to load software—software for all products	1	4.00
CD-ROM software must be useable by inexperienced as well as experienced users	1	4.00
Success of CDs is very dependent on access software	1	4.00
With 0 funds to purchase software—include software	1	4.00
Total	25	100.00

Comments on Training Issues Related to Full Text

	Freq.	Percent
Staff needs training	3	42.86
Staff time for training the public is limited	2	28.57
Access to remote computers, such as the one used for the EDB, is limited to trained staff members	1	14.29
Users need training	1	14.29
Total	7	100.00

Comments Related to Storage/Space Requirements for Full-Text Information

	Freq.	Percent
Microfiche takes less space than paper/is a space saving medium	9	23.68
Library has limited storage space for full-text in paper or microform	7	18.42
Will use more full-text on electronic and optical media due to storage limitations	5	13.16
Optical media save storage space	3	7.89
Paper takes too much storage space	3	7.89
Cost of additional storage space/equipment is important consideration	2	5.26
DOE microfiche collection takes up considerable space	2	5.26
Notify libraries when information is in full-text to prevent storage problems	2	5.26
Storage space for paper and microfiche is limited	2	5.26
Compacted storage forms with downloading capabilities are preferred	1	2.63
File format for online full-text would determine use of this medium	1	2.63
Internet access would be more effective than having each library store full-text	1	2.63
Total	38	100.00

Comments Related to Use of Compact Discs for Full-Text Dissemination

	Freq.	Percent
CD-ROM products must be user friendly/easy to install and use	14	12.84
Government CD-ROM products have poor user interfaces/poor user support/poor search software	12	11.01
Government CD-ROM products should use standard search protocols/common user interface	9	8.26
Library cannot afford the CD-ROM equipment necessary for full-text retrieval	6	5.50
Prefer CD-ROM to other media for dissemination of full text information	6	5.50
Archival quality/longevity of CD-ROM is unknown	4	3.67
CD-ROM equipment and/or CD-ROMs should be provided to libraries free of charge	4	3.67
CD-ROM products must include indexing/bibliographic control	4	3.67
Library does not have CD-ROM capability	4	3.67
Multiple CD-ROMs are difficult to manipulate/require extra staff time	4	3.67
CD-ROM is preferred by patrons	3	2.75
CD-ROM saves storage space	3	2.75
Full-text information on CD-ROM must be searchable	3	2.75
Prefer CD-ROM index to CD-ROM full text	3	2.75
Use software interface similar to commercial products	3	2.75
CD-ROM may be too small for large full-text databases	2	1.83
Library has a large investment in CD-ROM	2	1.83
Printing from CD-ROMs should be fast, easy, and inexpensive	2	1.83
CD-ROM distribution is cost-effective for the government but too costly for many depository libraries	1	0.92
CD-ROM is a good medium for heavily used full-text information	1	0.92
CD-ROM is a good medium for numeric and technical full-text data	1	0.92
CD-ROM is easily accessed and user friendly.	1	0.92
CD-ROMs should allow use of a dedicated, menu-driven CD-ROM reader with IBM-compatible PC	1	0.92
CD-ROMs should be compatible with Macintosh computers as well as IBM-compatible PCs	1	0.92
Compact discs are generally single user specific and not adequately networkable	1	0.92
Concerned about compatibility of CD-ROM products as technology changes	1	0.92
Experience with full text on CD-ROM has been unsatisfactory	1	0.92
Full-text DOE CD-ROMs should be disseminated to all depository libraries selecting DOE products	1	0.92
Illustrations and other graphic information on CD-ROM may require different printers	1	0.92
Information disseminated on CD-ROM should be issued at least monthly	1	0.92
Libraries are hesitant to loan compact discs	1	0.92
Library will select more full-text documents when they are in CD-ROM format	1	0.92
Library would wait longer for information in exchange for the ease of searching on CD-ROM	1	0.92
Provide adequate documentation for CD-ROM products	1	0.92
Put cataloging information for full text on CD-ROM	1	0.92
Software and documentation should be contained on each compact disc	1	0.92
Some GPO CD-ROM products do not include the same information as their printed counterparts	1	0.92
Use Boolean-based search software	1	0.92
Use of CD-ROM requires extra staff time	1	0.92
Total	109	100.00

Comments Related to Use of Mainframe/Minicomputers for Full-Text Access

	Freq.	Percent
Access to full-text on mainframe would be ideal, but is economically unrealistic	1	20.00
Keyword searching on full-text would be viable only on a mainframe computer	1	20.00
Magnetic tape for minicomputers/mainframes would be more difficult to accommodate than other media	1	20.00
Strongly urge full-text access via Internet on mainframe or minicomputer	1	20.00
Would cost at least $1.25 million to support full-text access to DOE reports via remote mainframe	1	20.00
Total	5	100.00

Comments Related to Use of Media Standards/Standardization

	Freq.	Percent
Adhere to applicable standards (such as ANSI or High Sierra)	6	37.50
Use standardized search software/commands	6	37.50
Standardize electronic formats from different government agencies	3	18.75
Use standardized format for data files	1	6.25
Total	16	100.00

Comments Related to Use of Microfiche for Full-Text Dissemination

	Freq.	Percent
No problem with the dissemination on microfiche of full-text information	8	20.51
Microfiche used because of space/storage problems	5	12.82
Wouldn't miss microfiche	1	2.56
No real objections to the microfiche currently distributed	1	2.56
Because of budget, restricted to providing information on paper or in microformat	1	2.56
Microfiche is always easier to use than microfilm	1	2.56
Microfiche is an effective archival storage medium due to quantity of materials distributed	1	2.56
Fiche low staff involvement and limited equipment costs	1	2.56
Can no longer afford to buy and store all full-text information in paper and microform copy	1	2.56
Fiche is a very workable means for disseminating full-text information	1	2.56
Fiche is most workable when demand for any one item in the set is relatively low, the documents are of relatively short length, and are relatively homogeneous in subject	1	2.56
Fiche not convenient	1	2.56
Poor quality microfiche fades and cannot be replaced on demand	1	2.56
Media must be replaceable if damaged due to use or age, particularly microform or electronic formats	1	2.56
Fiche hard on the eyes	1	2.56
Microfiche does not facilitate browsing	1	2.56
Microfiche print is so small; however, it beats no information at all	1	2.56
Color-code the headers of microfiche	1	2.56
The DOE microfiche technical reports is an important collection	1	2.56
DOE microfiche is accessed rather infrequently	1	2.56
It takes up considerable space	1	2.56
Patrons resist using microfiche	1	2.56
Microfiche may be behind six months to a year	1	2.56
Filing microfiche is time consuming	1	2.56
Choose paper, not fiche	1	2.56
Problems associated with paper indexes being issued late and microfiche having to be refiled	1	2.56
Fiche sometimes misplaced	1	2.56
Poor quality of fiche reading and printing equipment	1	2.56
Total	39	100.00

Comments Related to Use of Online/Network/Remote Systems for Full-Text Dissemination

	Freq.	Percent
Cost of access of great concern	7	31.82
Access to remote computers is limited to trained staff members due to the complexity of log-in procedures	1	4.55
Are there enough ports for outside users?	1	4.55
Do not expect to access remote full-text files regularly	1	4.55
CDs are more dependable than online systems	1	4.55
Plans for a statewide network of libraries will cause constant changes in what we do	1	4.55
The network needs support graphics display/print capability	1	4.55
For little accessed materials (STI, for example), remote access would be viable also	1	4.55
Searching material online would improve browsability	1	4.55
Our patrons rarely need full-text information and we could often get it online through DIALOG	1	4.55
As a nonscientific technical library we might be far more interested in remote storage	1	4.55
Go with full-text distribution via the Internet	1	4.55
Government information available online has been difficult to access because of poor software	1	4.55
I would have serious reservations with an online system that supplied full text	1	4.55
It does make sense to have the data available at a remote, time-sharing site if the data are easily obtainable	1	4.55
Online access with download/print capabilities is far preferable to fiche/film access	1	4.55
Total	22	100.00

Comments Related to Use of Optical Discs for Full-Text Dissemination

	Freq.	Percent
Archival capabilities of optical discs are unknown	2	20.00
Provide libraries with equipment if optical disc is used	2	20.00
Expensive to download information from optical discs	1	10.00
Lack of staff to train public to operate equipment and access information	1	10.00
Library lacks optical disc drives	1	10.00
Make sure optical discs are high quality and use current technology	1	10.00
Optical discs are better than CD-ROM for large full-text databases	1	10.00
Use optical discs once standards are set and used by all manufacturers	1	10.00
Total	10	100.00

Comments Related to Use of Paper/Hard Copy for Full-Text Dissemination

	Freq.	Percent
Users prefer paper	21	53.85
Paper takes too much space	7	17.95
Restricted to providing information on paper or in microformat because of budget constraints	3	7.69
Restricted to providing information on paper or in microformat	1	2.56
Can no longer afford to buy and store all full-text information in paper or microform copy	1	2.56
Paper is in some cases an absolute requirement, but other media can frequently substitute	1	2.56
Our public library functions are best served by paper and microform holdings	1	2.56
Only acid-free paper and silver film are accepted as having long life	1	2.56
Electronic access is better than paper	1	2.56
Some data are useful only to end user in paper or microfiche formats	1	2.56
Hard Copies (fiche and paper) are certainly viable	1	2.56
Total	39	100.00

Comments Related to "User-Friendliness" of Media and Technology for Full-Text Dissemination

	Freq.	Percent
Must be user friendly to load, to search, to retrieve	13	65.00
Government (GPO) CD-ROMS are not user friendly	3	15.00
An example of logical, user friendly software: SilverPlatter CD-ROMs and Wilson databases	1	5.00
Librarians are likely to add only those new CDs that are user friendly	1	5.00
Paper copy continues to be the most "user friendly" of all the formats	1	5.00
Standards such as ANSI or High Sierra should be incorporated into electronic medium	1	5.00
Total	20	100.00

APPENDIX N

Technology Assessment of Alternative Media for Full-Text Delivery

During 1991, 15,293 non-classified Department of Energy (DOE) research and development (R&D) reports were received by the Office of Scientific and Technical Information, primarily in printed form, and an additional 4,355 reports were provided through bilateral agreements in the form of microfiche, representing a total of 19,648 unique documents that were reproduced and distributed in microfiche format to all microfiche customers. Of these, 12,667 reports were distributed to GPO Depository Libraries. Distribution of these documents is based on areas of interest, as indicated by the customer. The full set of DOE documents is provided to relatively few sites.

Estimated Electronic Storage Requirement

Based on an average of 1.4 microfiche per document and 98 pages per microfiche, for 19,648 documents, there is an average of approximately 138 pages per document for an approximate total of 2,711,424 pages.

$$1.4 \text{ fiche} \times 98 \text{ frames per fiche} = 138 \text{ pages per report (average)}$$

$$138 \text{ pages} \times 19{,}648 \text{ reports} = 2{,}711{,}424 \text{ pages}$$

Assuming 60 lines of text to a page and 80 printed characters per line as a worst case, there are 4,800 possible characters per page representing a total storage requirement for 13,014,835,200 characters, more than 13 gigabytes (GB) for a full year of STI full-text data, in ASCII format.

$$60 \text{ lines} \times 80 \text{ columns} = 4{,}800 \text{ characters per page}$$

$$4{,}800 \text{ characters per page} \times 2{,}711{,}424 \text{ pages} = 13{,}014{,}835{,}200 \text{ characters}$$

However, calculations concerning pure text do not fully address the issue of required storage space for R&D reports. Many of the reports received in the course of a year include significant numbers of graphs, tables, and pictorial data without which the text of the report would be of little value. These types of data must be scanned and converted to analog data files known as image files.

Image data requires enormous storage capacity. Given that a letter-sized document of 8.5 by 11 inches represents 93 square inches, at a relatively low resolution of 200 dots per inch (dpi), this represents 3.72 million bits or 465,000 characters. Using the worst case of 4,800 characters of text per page, it can be shown that image data requires at least 97 times as much storage capacity as text data.

$$200 \text{ dots per inch} \times 200 \text{ dots per inch} = 40{,}000 \text{ dots per square Inch}$$

$$40{,}000 \text{ dots per square inch} \times 93 \text{ square inches per page} = 3{,}720{,}000 \text{ dots per page}$$

In computer terminology, a dot is equivalent to a bit, and a single character is composed of eight bits. We can therefore show that a full page image at 200 dpi represents the equivalent of 465,000 characters:

$$\frac{3{,}720{,}00 \text{ bits}}{8 \text{ bits per character}} = 465{,}000 \text{ characters per page}$$

Using the results of these calculations and the worst case estimate for the number of characters per page, it can be shown that the minimum storage equivalence ratio between image data of a relatively low

resolution and text data is approximately 97 to 1. Please note that as the resolution quality of the image increases or the number of text characters per page decreases, this equivalence ratio will increase dramatically.

$$\frac{\text{465,000 characters of image data}}{\text{4,800 characters of text data}} = \approx 97{:}1$$

This storage requirement can be reduced through the application of data compression techniques. Software currently exists that will compress image data by as much as 90% with minimal loss of resolution. Based on a 90% compression ratio, the 465,000 character per page storage requirement can be reduced to the equivalent of approximately 46,500 characters.

$$\text{465,000 characters} - (\text{465,000 characters} \times 90\%) = \text{46,500 characters}$$

Using a similar approach, one can show that at 300 dpi resolution the per page storage requirement will be approximately 104,625 characters. This represents an increase of 225% in storage capacity. Similarly, at an even higher resolution of 400 dpi, the storage capacity requirement increases to 186,000 characters, a 400% increase over the 200 dpi, storage requirement and a 178% increase over the 300-dpi requirement.

Even using data compression techniques, image data requires at least 10 times the storage required by text data. Based on past experience, 10–15% of the data contained in research and development reports consists of tables, graphs, and pictorial data, which must be stored as images.

If 15% is used as a worst case, it is possible to estimate that portion of the previously calculated 13 GB estimated storage requirement which must be adjusted to reflect the presence of image data as follows:

$$\text{13 GB of storage} \times 15\% = \approx \text{1.95 GB anticipated image data}$$

Using the fact that image data requires approximately 10 times as much storage as text data it is possible to estimate the storage requirement for technical report image data:

$$\text{1.95 GB} \times 10 = \text{19.5 GB of storage required for image data}$$

Subtracting the 1.95 GB representing image data from the previous combined estimate of 13 GB, the estimated storage requirement for text data is approximately 11 GB.

$$\text{13 GB} - \text{1.95 GB} = \approx \text{11 GB required for text data}$$

Combining the estimated storage requirement for text data and the estimated storage requirement for image data, the total estimated full text storage requirement for one year of scientific and technical information (STI) data is 30.5 GB.

$$\text{11 GB of text} + \text{19.5 GB of images} = \text{30.5 GB of full text}$$

Information flow, like any other process, has its highs and lows. Some years more data are received than other years. The statistical data used in these calculations represent an average based on the experience of many years of processing STI data and should therefore be reasonably accurate.

A recent and widely cited Association for Information and Image Management (AIIM) study has found that 95% of the information stored by U.S. businesses is still on paper. Only 1% is online in any form, with the remaining 4% on microfilm or on offline magnetic media.[1] Obviously, paper documents will always be with

us; however, one would expect that as electronic media technology matures, a much greater percentage of this document storage will migrate from paper to the newer media.

Magnetic Tape

Based on an estimated storage capacity of 200 megabytes (MB) per 3600-foot reel of 9-track tape at 6,250 bits-per-inch (bpi), 153 reels of magnetic tape would be required to store 30.5 GB of full-text information. This represents storage necessary for the data included in the documents themselves; it does not include any indexing information.

The initial cost of so many magnetic tapes and the shipping cost, which must be born by the customer, would probably be sufficient to eliminate 9-track magnetic tape as a likely distribution media. Other distribution problems associated with this media include sensitivity to magnetic fields, sensitivity to adverse temperature and humidity conditions that may occur during shipping, and the physical bulk of such a large number of tapes.

Floppy Disk

Due to the physical volume of STI data, the currently available floppy disk medium does not provide a viable distribution option. The 3.5-inch floppy disk has a capacity of 1.4 MB. Distribution of a single copy of full-text STI data would require 21,786 of these disks, which would be somewhat impractical.

However, some of the newer technologies include the utilization of laser-controlled read/write heads for floppy drives, also known as "floptical" disks. The accuracy of the laser makes it possible to significantly increase the storage potential of a floppy disk. Current technology in this area makes it possible to store as much as 21 MB of data on a 3.5-inch floppy disk.

Assuming the previously noted worst case storage requirements, it would be possible to store 31 STI reports on a single 21-MB floptical disk:

$$\frac{\text{21 MB available storage}}{\text{4,800 bytes per page}} = \text{4,375 pages}$$

As this technology progresses, floppy-based media utilizing optical technology may become an acceptable option for distributing limited subsets of full-text STI data; however, this medium will not be suitable for distribution of large-scale full-text data in the foreseeable future.

Microfilm

Microfilm, in the form of microfiche, is currently the medium of choice for distribution of the nearly 20,000 R&D reports received each year from both domestic and foreign sources. Each report requires approximately 1.4 sheets of microfiche. Based on the utilization of 98 frames per fiche, it can be estimated that each report contains about 138 pages.

Microfilm is an old, established technology for storing images. Its archival quality, compact storage format, and reproduction capabilities have been major selling points for the technology for years. However, the years and advancing technology are beginning to catch up with this venerable medium. As the years pass and more and more documents are preserved on microfilm, even considering the small footprint of a basic microfilm storage cabinet, the space requirement for historical stores of microfilm is becoming prodigious. This is particularly true for those Depository Libraries that attempt to maintain these files beyond five years.

In response to a recently conducted survey, space restrictions were cited as a major problem by virtually every responding library. At least one library indicated that they were no longer receiving Department of

Energy R&D reports simply due to a physical lack of space to store the microfiche. Other microfilm-related problems reported by the 1,065 libraries responding to the survey included the quality of microfilm received in terms of readability (possibly related to handling and storage practices), difficulty in locating information, poor reproduction quality provided by some of the microfilm scanning equipment, as well as the loss of microfiche through physical misfiling.

As imaging moves more into the data processing realm and out of the records management realm, microfilm will lose ground as an option. Even in some situations where microfilm is the technically superior solution and has a cost advantage, optical disk-based systems are sometimes selected because they are the more "modern" technology.[2]

According to the AIIM report "The State of the Industry 1991," microfilm as a storage medium is under intense competition from optical discs. The AIIM report predicts that micrographics will grow at an annual rate of 5% between 1990 and 1995, whereas electronic image management will grow at a rate of 47% for the same period. There can be no doubt that the current trend is toward optical technology.

The decisive blow for microfilm may come in the form of longevity. It has long been accepted that microfilm would remain viable as a storage medium for as long as 40 years following data capture. Current estimates place the life span of optical media at as long as 100 years. This, coupled with the unalterable state of the data contained on an optical disc, the fact that such a disc is impervious to damage from most environmental or handling sources, and the ease of access provided by software to the data stored on the optical media, serves to make microfilm less attractive as a medium for use in the dissemination of data.

Online Access

While it would seem that direct, online access to the various data sets that make up the Department of Energy's overall STI database would be the preferred mode of access, this is not necessarily the case. There are a number of limiting factors that tend to make online access less attractive to external users, the most significant of which are access and training costs.

Access costs are the result of multiple individual costs that can accumulate rather rapidly. Initially, there is a hardware cost associated with acquiring an interface device such as a terminal or a personal computer. There is also the cost of the installation of a modem, either an ongoing cost (lease) or a one-time cost (purchase). In addition to direct hardware costs, the user must absorb training costs to learn how to operate the terminal or personal computer as well as the modem.

Once the necessary equipment is in place, the user is faced with learning to access the host system. This may require intermediate access using one of the online services such as TYMNET or DIALOG as a gateway, or it may involve direct access to the host system. Additional training costs are incurred by the user at this point, learning to access the gateway or the host computer system. Other costs associated with communications and initial connection to the system are telephone access charges and gateway access charges.

Users are often frustrated by interface mechanisms that assume that all users are computer literate, particularly in terms of the local computer system and its operations. Specific user training in these areas could serve to reduce connect time and access charges. For remote users, such training could be provided in the form of videotape, online tutorials, printed site-specific documentation, or on-site training.

In the course of normal day-to-day business, and especially in times of economic slowdown and decreasing budgets, organizations such as government offices and Depository Libraries must take steps to reduce their overhead by performing their missions as economically as possible. These considerations and the overall costs associated with telecommunications and system access make online access less appealing to users not located at the host site.

In a recent survey of 1,065 Depository Libraries, the specific area of cost was identified by respondents as a major factor affecting online access. To encourage external online database access, it would be necessary to reduce the cost threshold for system access, possibly by providing one or more free access 800 series telephone numbers and reducing the cost of CPU access and disk storage. Cost-recovery procedures are somewhat impractical and counterproductive for systems that are receiving minimal usage.

Respondents to the survey also indicated that some of the search and retrieval mechanisms provided by certain of the gateways and online systems were somewhat less than user friendly and difficult to use, particularly with respect to Boolean logic-type searches. This has always been a complaint made by personnel external to any local site and is probably the result of an understandable lack of knowledge regarding the data set, the historical litany surrounding the accumulation of the data, or the basic use for which the data collection was originally intended. These factors need to be addressed and incorporated into user interfaces and training processes designed specifically for external users. If the system is made easy to use and the cost of access is not prohibitive, people will use it; otherwise they will not.

With the development of the National Research and Educational Network (NREN), agencies will have a wider range of options for the dissemination of government information. Indeed, in the future, it may be easier and less expensive to simply provide access to an agency database via NREN than to produce that database on CD-ROM.[3]

CD-ROM

CD-ROM technology has been shown to be quite effective as a distribution medium for full-text documents. The recent proliferation of commercially available software specifically designed to assist relatively unsophisticated users in the creation of CD-ROM discs has greatly simplified the process of converting digitally stored data to a format suitable for use as a CD-ROM application. Software is also available for inclusion on the CD-ROM disc that will utilize indexes created as the digital data are prepared for loading onto the CD-ROM media, so that keyword and Boolean search operations may be performed.

At this point, CD-ROM technology provides a storage capacity of approximately 660 MB, or 660 million characters, on a 4.7-inch disc. This is certainly a significant achievement in storage capacity, and the ability to search for and retrieve full-text data in a relatively rapid manner from such a large collection is quite impressive. One specific application available on the commercial market provides approximately 70,000 magazine articles in full text, including user-friendly software to allow the user to search the data set and the related indexes, all on a single disc.

It has been estimated that the indexing necessary to perform keyword and Boolean type searches in full-text data can require 35 to 50% as much storage as the data itself, depending on the level and type of indexing.[4] Assuming a worst case storage requirement of 50% of the size of the full-text data for the indexes and the retrieval software, available storage on the CD-ROM disc is reduced to 440 MB.

Based on previously provided calculations, the estimated electronic storage requirement for a one-year window of DOE R&D reports is 30.5 GB. If we assume the worst case storage requirement of 50% of the total full-text storage requirement for index storage, it can be shown that full-text distribution of DOE R&D reports as a single data set, including image data, could require as many as 70 CD-ROM discs, using current CD-ROM technology.

$$\frac{\text{30.5 GB of full text}}{\text{440 MB per CD-ROM disc}} = \approx 70 \text{ CD-ROM discs}$$

One option for providing STI data on CD-ROM might be to divide the data into finite sets based on subject area(s) that might be small enough to be stored effectively on a single CD-ROM. This would allow the user to narrow the search to a specific area while eliminating the need for a jukebox (described later). This method of generating CD-ROM applications has the disadvantage that separate inquiries would have to be made to retrieve common data related to subjects that may span multiple areas of interest existing on separate discs.

Optical Disc

Optical discs utilize a technology similar to that of the CD-ROM, the primary difference being the physical size of the disc. Optical discs are available in two sizes, 12 inch and 14 inch. The increased physical size of the disc provides additional storage capacity, as much as 1 GB of data per side at this time.

Despite its larger storage capacity, the optical disc technology has not yet enjoyed the acceptance that the CD-ROM technology has. Of the 1,065 libraries surveyed only 1.5% indicated that they were using optical discs, and most indicated a preference for the CD-ROM format.

Jukebox

A jukebox is a mechanical device that is capable of manipulating a store of multiple media, either in CD-ROM, optical disc, or tape format. Using a robotic operation similar to that employed by its namesake, the jukebox is capable of selecting a specific disc or tape from storage and loading that medium into a drive for access by a computer system. The jukebox technology can provide unattended access to enormous data sets.

The largest capacity jukebox currently available is the Cygnet Systems Series 1800 Expandable Jukebox system, which supports the new ATG Gigadisc GD 9001 optical drive. The incorporation of the 9-GB 12-inch ATG platter expands the capacity of the jukebox to 1.27 terabytes (1,270 GB).[5]

Imaging

In a way, document imaging systems are publishing systems running in reverse; publishing systems electronically format pages to be printed on paper, while document imaging systems capture paper pages via scanners and turn them into digital bitmap (raster) files. These page images are indexed in a document database for retrieval on a computer screen or terminal.[1]

Images represent more or less accurate representations of original documents. The level of accuracy is determined by the density at which the document is scanned. Scanners view documents as "light" and "dark" areas that are measured in terms of dots per inch (dpi). The higher the number of dots per inch, the higher the quality of the image will be when it is reproduced from the dot matrix or bitmap produced by the scanner. Higher quality is obtained at the cost of greatly increased storage requirements and reduced rates of throughput in terms of pages scanned per minute. Scanners usually operate at either 100, 200, 300, or 400 dpi (100 dpi is the lower resolution and 400 dpi is the higher resolution image).

As noted earlier, images require enormous storage capacity. A letter-sized document of 8.5 by 11 inches (similar to the international standard A4 format) represents 93 square inches. At a resolution of 200 dpi, this represents 3.72 million bits or 465,000 characters. Based on these calculations, a letter-sized document stored as an image contains data equivalent to about 800 letters or memos created on a word processor.[6]

It is currently possible to store text data in digital (readable) format and graphics data such as charts, drawings, and pictures as image data, linking the two types of data together using hyperlinks, so that the original document may be reproduced by recombining the different types of data. While this method requires less storage than full imaging, current technology may not have progressed to the point that imaging in this form is a practical option for the dissemination of STI data.

Optical Tape

A developing technology that is new to the industry, not in concept but in terms of an actually functioning device, is the Optical Tape Drive. This device is capable of storing 1 terabyte (1,000 GB) of data on a single tape. According to the March 1992 issue of *CD-ROM Professional* magazine, only one of these devices had been shipped at that time, and four more were on order.

Access speed for this device is quite good in comparison with other tape units. *CD-ROM Professional* magazine states that the drive is capable of searching the entire length of the tape in 60 seconds and retrieving any given record in 28 seconds. This is certainly slow in comparison with magnetic disk speeds (which are measured in milliseconds), but it is quite significant for a tape device.

As with any new technology this product needs a little time to mature. The serial nature of the storage of data on an optical tape will not lend itself to repetitive direct searching of the type associated with CD-ROM discs, using current software and hardware access methods. However, with the inexorable advance of time come new ideas and methodologies. Optical tape may yet prove a useful tool in the dissemination of STI data.

Live Optical Disc System

The term "Live Optical Disc System" refers to a hardware system consisting of a number of disc drives, each specifically designed to access a series of optical discs simultaneously, similar to the operation of multi-platter magnetic disks. A live optical disc system is different from a jukebox system in that the total data collection is always online and available for use.

A primary disadvantage of a jukebox system is the fact that not all of the discs are online. Some are stored within the hardware until needed (known as "near line" storage), at which time they are retrieved and loaded on the system mechanically. On a multi-user system, this mode of operation creates a situation in which users requesting data located on a disc that is not currently online are placed in a queue until the requested disc is made available by the jukebox hardware.

Using a live optical disc system, there will be no waiting for a disc to be loaded; the entire data set is always online. This provides an efficient user interface to a virtually unlimited data set, depending on the number of disc units available. The tremendous storage capacity of the optical disc will make online access to full-text and image format data possible.

The completion of the national fiber-optic telephone network will provide the capability to transfer previously unheard of quantities of data at extremely high rates. Using this technology together with the live optical disc system technology, it will be possible to implement a single source database for full-text DOE STI data that would be available for online search and retrieval operations. High transmission speeds would improve the cost-effectiveness of downloading full-text data from the single source database to the user's local system for further processing as necessary.

Given these anticipated technological advances and decreased costs for online access over the next few years, the libraries may find that it is more cost-effective overall to simply provide online access to the database(s) than to attempt to deal with as many as 70 CD-ROM discs a year and the associated hardware costs. The ability to download full-text data at gigabit transfer rates will become attractive to users, as will the related reduction in communication costs.

Conclusions

Based on the recently conducted survey of Depository Libraries, it is quite clear that the CD-ROM format is the dissemination method preferred by the libraries. The CD-ROM format requires less space, data cannot be misfiled or damaged as easily as microfiche or paper, and Boolean-type search capabilities and rapid query response make the medium popular with patrons.

Most of the reports currently being received are in the form of printed documents or microfiche. This means that it will become necessary to make arrangements with each of the organizations providing reports to transfer data in digital form or acquire the technology to scan more than 2.7 million pages per year either in-house or through a contractor. In the future, the availability of high-speed telecommunications via the fiber-optic network will make it practical to transmit such large segments of full-text data over the telephone line, making it possible to receive these reports from their originators in electronic form, thereby largely eliminating the need for scanning operations.

A further consideration is the fact that many of the reports include graphic or pictorial data that are absolutely necessary to the intellectual content of the document. In some of these cases the text would be of little use without the related graphic or pictorial data. This incorporates another level of complexity—the need to combine text and non-text data, a process known as imaging.

As previously noted, to incorporate image data even at a very low resolution requires significant space for the storage of the bitmap generated by a scanner. Increasing the required storage area increases the number of CD-ROM discs required to hold the data. Imaging also adds a level of complexity to the search and retrieval software; hyperlinks are required to associate the essentially analog bitmaps with the digital text data so that both may be retrieved and displayed together.

These are, of course, technologies that currently exist; however, they have rarely been applied to a task as large as 30.5 GB of data. Admittedly, this is a calculated "worst case" figure, but it is not necessarily an invalid figure. Considering the enormity of such a full-text project, it would probably be better to enter the CD-ROM production arena on a somewhat less grandiose scale and allow the developing technologies such as CD-ROM and fiber-optic communications to evolve to a state in which large quantities of data can be readily accessed and evaluated and rapidly transferred if need be.

A more realistic short-term goal might be to produce a CD-ROM containing a 12- month-plus window of STI abstracts, rather than full text. This set of data could easily be loaded onto a single CD-ROM, including additional data for inclusion in the indexes for searching. Such a CD-ROM product would resolve one of the major problems identified by the libraries relating to microfiche distribution: the difficulty of locating desired data within the microfiche file.

The abstract CD-ROM would essentially provide an index into the microfiche file, based on the abstract number, while providing personnel involved with the process valuable experience in creating a CD-ROM product and utilizing the technology. In the future, it will be possible for users to access the proposed online live optical disc system to retrieve their data in full text, rather than or in addition to utilizing a microfiche file.

Throughout this paper an issue that continually comes to the forefront is the requirement for enormous data storage capability on any given distribution media. It would be possible to reduce the need to distribute such enormous sets of data if a single source for access to full-text documents were provided through an online interface that could be used to rapidly retrieve full-text data in a cost-effective manner.

Such a system would allow users to review the data on a terminal or download the data from the source system to their local system for further processing. This capability does not yet exist; however, with the development and implementation of a live optical disc system and the advent of fiber-optic communications making high-speed data transmission more and more available as these networks are installed across the country, the eventual availability of the described capability becomes more and more a reality. Improved speed and reduced cost will tend to make online systems more appealing to users and will reduce but will not eliminate the need for the physical distribution process.

When users are able to access an online system that provides the capability to perform search and retrieval operations on full-text data, including the ability to actually download selected full-text data to their local systems for further analysis and processing, the requirement for distribution services will diminish. However, this capability is an issue for the future.

Finally, it should be noted that not all of the media authorities are in agreement regarding the life expectancy of optical media in their present form. Estimates of the archival life span of CD-ROM products range from 5 to 100 years, depending on the current source of the estimate. This is reminiscent of the arguments heard 30 to 40 years ago concerning the life expectancy of microfilm. Only time will provide the answer to this question.

Recommendation

Nearly all of the sources utilized during the development of this paper have basically agreed that optical technology (particularly CD-ROM), image processing, and open systems are the rising technologies of the office of the future. It would be well for an organization to begin to position itself to accommodate the anticipated needs and requirements of advancing technology in these areas.

In the short term, to gain initial entry and necessary experience in the general area of CD-ROM production, digital data that is immediately available on in-house computer systems in the form of R&D abstract information could be used as a pilot CD-ROM project to produce a searchable index for the full-text data currently being distributed on microfiche. Such a project would provide two immediate benefits:

- Involved personnel would be provided an opportunity to gain knowledge and experience related to the process of creating a CD-ROM product without the additional burden of having to scan existing documents and microfilm to generate digital data.

- Providing an index for the fiche in CD-ROM format would at least partially address one of the specific concerns expressed by the surveyed libraries concerning the difficulty in using the microfiche distribution media.

As more experience is gained in preparing and organizing data for CD-ROM implementation through the vehicle of the Pilot Project, ongoing efforts should be undertaken to identify and evaluate existing and future options for obtaining STI data in digital full-text format. The most cost-effective long-term option(s) should be determined, whether it be performing the function in-house or through a contractor or service bureau, and a plan of action to initiate such activities should be formulated.

Consideration should be given to the form of storage selected for scanned data. Since R&D reports do not change, the best medium for storage would probably be optical discs utilizing the WORM (write once, read many) technology. It should be determined how graphic and pictorial data are to be handled, either as full-page images or as a multimedia application involving both digital and analog data.

Online systems capabilities should continue to be upgraded. The incorporation of a live optical disc system utilizing high-capacity optical discs should be implemented to begin to make full-text data available through the online user interface systems. The technologies necessary to accomplish this are still developing. The fiber-optic systems necessary to make the transmission of full-text data over telephone lines feasible have not yet been installed throughout the country. Organizations should position themselves to take advantage of this capability as soon as it becomes available.

Optical technologies are still developing, with new breakthroughs being announced on nearly a daily basis. It is difficult to make informed judgments as to the state of the art of computer science very far into the future. This is particularly true in light of the advent of the 64-bit computer technology that is about to be unleashed upon the industry. It is possible that the processing capabilities of these RISC (reduced instruction set computer) systems will enhance the speed of processing to the extent that state-of-the-art systems of today may be considered unusable in a relatively short period of time.

Given the rapid advancements experienced over recent months, the best recommendation for future dissemination activities would be to begin to gain experience through the production of a CD-ROM containing recent R&D abstracts, building on that experience to eventually, over time, produce full-text or image format products for R&D reports.

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Appendixes O–P

(General)

APPENDIX O

Acronyms and Initialisms

AACR2	Anglo-American Cataloging Rules, 2nd Edition
ADP	Automated Data Processing
AIIM	Association for Information and Image Management
ASCII	American Standard Code for Information Interchange
BITNET	Because It's Time Network
CALS	Computer-aided Acquisition and Logistics Support
CARL	Colorado Alliance of Research Libraries Systems, Inc.
CD	Compact Discs
CD-ROM	Compact Disc Read-Only Memory
COSATI	Committee on Scientific and Technical Information
CPU	Central Processing Unit
DOE	United States Department of Energy
DPI	Dots Per Inch
EDB	Energy Science and Technology Database
ERA	Energy Research Abstracts
ESNET	Energy Sciences Network
GB	Gigabyte
GAO	United States General Accounting Office
GPO	United States Government Printing Office
INTERNET	International Project Management Systems
ITIS	Integrated Technical Information System
LAN	Local Area Network
MARC	Machine Readable Cataloging
MB	Megabyte
NASA	National and Aeronautics and Space Administration
NREN	National Research and Educational Network
OCLC	Online Computer Library Center
OCR	Optical Character Recognition
OSAM	OSTI Search Aid Menus
OSTI	Office of Scientific and Technical Information
R&D	Research and Development
SGML	Standard Generalized Markup Language
STI	Scientific and Technical Information
STN	STN International (the Scientific and Technical Information Network)
SuDocs	Superintendent of Documents
TYMNET	Timeshare, Inc. Network
WAN	Wide Area Network

APPENDIX P

Glossary

analog	referring to the representation of numerical quantities by the measurement of continuous physical variables: for example, the magnitude of an electrical signal might represent a number.[1]
archival storage	storage of information contained on some physical medium, maintained for record purposes but seldom used.[2]
Boolean logic	a statement of logical relationships by the use of expressions in which each element can have only one of two possible values. Also called symbolic logic. The logical operators (AND, OR, NOT) which are used to create search statements.
byte	a group of consecutive bits forming a unit of storage in the computer and used to represent one alphanumeric character: a byte usually consists of 8 bits but may contain more or fewer bits depending on the model of computer.
compact disc (CD)	a small (approximately 4½ inches in diameter) optical disc similar in appearance to audio compact discs, often used for commercial distribution of databases. Common types of compact discs are CD-ROM (**R**ead **O**nly **M**emory) and CD-WORM (**W**rite **O**nce, **R**ead **M**any). (See also "optical disc.")
daisy chain	several devices, such as CD jukeboxes, connected together so that a computer that accesses them treats them as a single device.
depository library	a library that has been designated per Chapter 19 of title 44 of the U.S. Code as a participant in the Federal Depository Library Program. Depository libraries, which are located in each State and congressional district, receive all government publications (with some exceptions) and make these available free to the general public.
disc tower	a device that stores and accesses several compact discs in individual drives stacked on top of each other so that data can be read from all drives simultaneously.
download	to transfer a file from one computer to another computer.
full text	refers to the complete text of a document, as opposed to a bibliographic citation. This term is usually used in the context of an electronic, rather than printed, version of a document.
gateway	1. an interface between (packet switching) networks; a node that is an element of two networks. 2. a viewdata facility that permits direct user access to the computer of an information provider.
gigabyte	one billion bytes.

internal host	(host computer) a computer to which a number of terminals and/or other computers are connected and which provides access to applications, printing services, storage, and computing services.[1]
jukebox	a device that stores and accesses several compact discs by loading them into a single drive and reading them one at a time. A jukebox may be used with compact or optical discs.
local area network (LAN)	a network implemented with direct cable links between terminals or workstations in a "local" environment (i.e., an office building or manufacturing plant).[2]
mainframe	applied chiefly to a larger computer as distinguished from a minicomputer or microcomputer; used where large volumes of data are processed, as in large corporations, universities, and government offices.[1]
medium/media	any of various electronic or nonelectronic substances or devices capable of retaining data for relatively long periods of time[1]; a physical means used to represent data for storage or transfer.[2]
microcomputer	a small, low-cost computer that has random-access memory (RAM) for storing programs during execution, and, commonly, a read-only memory (ROM) for permanent storage of required programs.[1] Commonly called a personal computer.
minicomputer	an intermediate-sized computer that operates at about twice the speed of a microcomputer and supports many high-level programming languages, such as COBOL.[1]
modem	1. a device that converts digital data output from another device, such as a computer or terminal, into analog data that can be transmitted over communication lines; it also converts analog data into digital data that can be accepted by another device, such as a computer or a terminal.[1] 2. a means of communicating between computers at two geographically distant sites via telephone lines.
network	a system consisting of a computer (or computers) and the connected terminals and related devices, such as modems, printers, and storage media.[1]
optical disc	an aluminum-plated plastic disc with a single spiral track onto which digitized data has been stamped. Data on the disc is read with a photoreceptor that perceives changes (caused by the stamped indentations) in the light projected onto the disc by a low-power laser. Usage in this survey refers to the larger (12–14" in diameter) discs that are often used for archival storage of data.
personal computer (PC)	a relatively low-cost, portable microcomputer, generally used with application software packages to perform word processing, spreadsheets, etc.[1] (See also "microcomputer.")

remote	refers to communication with a data processing facility by one or more workstations that are distant from that facility.[3]
stand alone	refers to a system or computer that is not connected to a network or host computer; often refers to a personal computer (PC) that is not on a local area network (LAN).
SuDocs number	number assigned to government publications by the Government Printing Office Superintendent of Documents.
terabyte	one trillion bytes.
time-sharing	pertaining to a system in which multiple users get, in turn, equal time or use of a computer or computer device,[3] usually by dialing in via modems.
wide area network (WAN)	a data network implemented with direct cable links between terminals or workstations in a geographically dispersed environment (i.e., a college campus).[2]
workstation	a terminal or personal computer (PC) that may or may not be connected to a host computer or to a local area network (LAN) and/or have peripheral devices attached.

1. *Webster's New World Dictionary of Computer Terms,* Simon & Schuster, Inc., New York, 1984.

2. Galland, Frank J. (Ed.), *Dictionary of Computing,* Datalogy Press Ltd. for John Wiley & Sons, Windsor, England, 1982.

3. *The Digital Dictionary,* 2nd edition, Digital Equipment Corporation, 1984, 1986.