RESOURCE SHARING IN IOWA

Information Systems
Consultants Inc.
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TABLE OF CONTENTS

APPENDICES

I. INTRODUCTION

Information Systems Consultants Incorporated was retained by the Iowa State Library to undertake a study of resource sharing in Iowa to assist a Blue Ribbon Task Force in its efforts to improve access to bibliographic resources statewide.

The consultants were asked to conduct a series of focus group interviews at eights sites around the state and to develop and distribute a survey form to 1,300 libraries in Iowa. The purpose was to gather data about current activity and opinions about resource sharing in the State. The consultants also were asked to determine the internal automation needs of the State Library. The project director met twice with the Blue Ribbon Task Force.

The consultants developed the following recommendations based on their analysis of the data:

1. The Iowa resource sharing program should use multiple tracks of access and communication, with OCLC, the Locator and ICAN, and In-WATS to Regional Libraries as the major tracks.

2. The number of copies of the Locator should be increased to at least 122.

3. The scope of the Iowa Locator should be broadened to include all formats.

4. The State Library should seek to subsidize the purchase of CD-ROM drives and the ICAN telecommunications upgrade.

5. The State Library should promote the Open System Interconnection (OSI) Reference Model as the means of linking local library systems in the future.

6. The State Library should consider porting ICAN to a host system in Iowa.

7. The State Library should obtain a cost quotation for use of the Iowa Educational Telecommunications Network.

8. The State Library should implement an automated library system suitable for its internal automation, the internal automation of other state agency libraries, and as host for ICAN.

9. The State Library should continue to promote networking among the State's libraries by advocating adherence to all applicable standards.

10. The State Library should expand its consulting program in the area of automation.

11. The State Library should not underwrite the development of additional library applications software.

12. The State Library should assign the issue of reimbursement to a task force.

13. The State Library should coordinate a telefacsimile project.

14. The State Library should consider installing an answering machine at the reference back-up center at the University of Iowa.

15. The State Library should coordinate surface delivery.

The recommendations are discussed in detail in Section VI. The background on which the recommendations are based is spelled out in the following sections: II. Technological Background; III. Focus Group Summary; IV. Survey Summary; and V. State Library Needs.

II.   TECHNOLOGICAL BACKGROUND

This section briefly summarizes the four principal technologies used by the libraries of Iowa to facilitate resource sharing: the Iowa Locator, ICAN, the OCLC ILL subsystem, and the RLIN ILL subsystem.

The Iowa Locator

In 1986, the State Library of Iowa began production of a statewide union catalog on a CD-ROM (compact disk-read-only-memory). The initial product, called the Iowa Locator, used a PC and CD-ROM player to provide access to holdings of some one million titles in 30 public, academic and special libraries. The first Locator contained information about the University of Iowa book collection which had not previously been available to any other library in Iowa. The first Locator was placed in the same 30 libraries which had provided information about the books they owned.

In March 1988, Iowa Locator II was released. Locator II contained information about 4.5 million items in over 400 libraries of every type. Locator II could be searched by any word in a title, as well as by author, title, or call number. Furthermore, information from Locator II could be transferred directly into a commercial contractor's microcomputer-based interlibrary loan system.

All the participants in the first Locator project received the equipment required to use the Locator without charge. Funding was not available to supply the 400 libraries who contributed information to Locator II. Therefore, the additional libraries which accepted Locator II subscriptions furnished their own PCs and CD-ROM drives. Currently, there are 59 libraries which have the Locator installed, including 39 academic and 20 public libraries.

In order to use the Locator a library needs an IBM compatible PC with 640K of memory, two floppy disk drives, a graphics card, and a monitor capable of displaying graphics. The cost of the equipment is approximately $1,200 for a device suitable for a variety of applications. A minimum budget would be $800 (including cabling, disks, etc). The Locator also requires two CD-ROM drives, which cost $625 per drive, or $1,250. If a library wants to be able to print-out Locator searches, a $250 dot-matrix printer is required. The total cost for a Locator installation, therefore, is $2,400 to $2,700.

A library, or one of the seven regional library systems, which has the Locator can search the database to determine which libraries in a region or elsewhere in the State have a particular item. The library or a regional library system can then place a request for the item on the Iowa Computer Assisted Network, or ICAN, which is the statewide interlibrary loan messaging system. ICAN has been installed in 22 institutions.

The State Library has estimated that with the introduction of Locator II and ICAN, a local public library has a 50 percent chance of receiving materials not in its collection within a week, and an 80 percent chance of receiving them within a month.

Locator III was released in October, 1988. The new addition added some 2.7 million records, more than 400,000 of which were new to the database. With Locator III the database grew to nearly 5 million unique titles. The plan is to issue Locator III on a quarterly basis. The amount budgeted in the current fiscal year for four editions of the Iowa Locator is $74,500. The current contract is effective through June 30, 1989.

Libraries may enter holdings information into the Locator at no charge. The records must be in the MARC communications

format, or a library can supply an LCCN (Library of Congress Card Number) and the ICAN code. If the more than 1,300 libraries in the State entered all of their holdings, the number of titles might exceed nine million and the number of holdings might be as high as 20 million.

A Library can arrange for the extraction of records in the Locator database at a cost of $.10 per record. It must supply the LCCNs of the records to be extracted.

ICAN

The Iowa Computer Assisted Network (ICAN) is an electronic mail network developed in conjunction with the Locator. ICAN is not the State's first effort at creating a network for resource sharing. The State Library operated a multi-type, State-wide interlibrary loan network as early as 1969. Until 1985, the network was based on teletype technology and blind searching of public library resource centers, academic libraries, and Iowa State University, the University of Iowa, and the University of Northern Iowa. The rise of microcomputer technology made the teletype machines obsolete, and by 1985 the entire system was in danger of a complete mechanical breakdown. The Iowa planning document Iowa Libraries: A Time To Grow 1985-1990 called for a computer-based ILL network, the Iowa Computer Assisted Network. The document also recommended that blind searching be eliminated and that a State-wide database comprised of MARC records from all types of libraries be created.

The State Library, acting on the recommendations of the planning document, established a microcomputer-based network designated ICAN consisting of most of the sites which had participated in the teletype network. The new network originally used Apple Mac PCs and the ITT Dialcom electronic bulletin board. When telecommunications costs rose to $8,000 per month (due in large part to the substantial overhead on the messages

transferred) and the lack of a central hub proved to be a serious disadvantage, ITT Dialcom and the network loop were replaced with a sorting methodology and central node offered by the Blue Bear Group of Colorado. The new ICAN involved limited online time for the 20 participants, with the sorting of files accomplished by a network of microcomputers located in Colorado. It costs $800 to upgrade a library's Locator configuration to support ICAN, plus $624 per year for telecommunications and message processing.

By 1987, blind searching for interloan requests had been nearly eliminated. By using the Iowa Locator, the new CD-ROM based State-wide database, most book requests could be sent to known locations. By interfacing ICAN with the Locator, the number of steps to locate and request an item had been dramatically diminished.

Current participants in ICAN are the State Library, Cedar Rapids Public, Coe College, Cornell College, Council Bluffs Public, Davenport Public, Des Moines Public, Drake University, Graceland College, Grinnell College, Iowa State University, Kirkwood Community College, Loras College, Luther College, Morningside College, North Central Region, Northwest Region, Simpson College, University of Iowa, University of Iowa Library School, University of Northern Iowa, Wartburg College, and Waterloo Public Library. The composition of the group is six public library regions, 13 academic and university libraries, and the State Library.

Statistics have been collected for the last three quarters of operation. On an annualized basis, there have been 34,000 ILL requests sent on ICAN. At an overall hit rate of 80 percent, there were 27,000 filled requests for 1988. Of those, 12,000 loans were photocopies and 15,000 were books. Public libraries borrowed 13,770 items, or 51 percent of the total loans.

University libraries, academic libraries and the State Library borrowed 49 percent of all items, or 13,230 items.

All the participating types of libraries contributed to book and photocopy loans. However, different types of libraries had very different patterns of usage, as indicated by the following tables.

I: PHOTOCOPIES

Library Type	Items Loaned	Items Borrowed
Public	2%	10%
Academic	27%	67%
University	58%	19%
State Library	13%	4%

II: BOOKS

Library Type	Items Loaned	Items Borrowed
Public	38%	78%
Academic	29%	16%
University	32%	6%
State Library	1%	1%

The Blue Bear Group contracts with the State Library of Iowa for processing and telecommunications charges for ICAN. The cost of processing 34,000 requests is $2,500 per month, or $30,000 per year. The cost of telecommunications for 22 sites is $1,350 per month, or $16,200 per year. The total amount budgeted for ICAN for the current fiscal year is $52,500. The current contract is in effect through October 15, 1989.

Appendix A of this report summarizes the discussions held between the Blue Bear Group and the consultants.

OCLC

Sixty Iowa libraries, the majority of the State's academic libraries and a significant percentage of its public libraries belong to OCLC, the national bibliographic utility which serves over 7,000 libraries. The OCLC online database contains more than 18 million bibliographic records and more than 320 million locations--with 3,563,980 monographic locations and 38,000 serials holdings records reported for Iowa libraries. Each year libraries send more than 3.5 million transactions through the OCLC ILL subsystem. The hit rate is in excess of 87 percent, with public libraries achieving a hit rate of well over 90 percent. The major reason why the hit rate is not higher is that a number of libraries have failed to delete titles no longer held from the database.

The 53 Iowa OCLC ILL participants in OCLC (as compared with 60 cataloging participants) submitted 45,250 requests through OCLC in the past fiscal year. Of these 47.6 percent were filled in Iowa, and the rest in Illinois and a number of other states. Iowa OCLC participants filled 40,732 requests, 43.5 percent for institutions within the State and the rest outside the State.

RLIN

The only major Iowa library which does not participate in OCLC is the University of Iowa, which uses RLIN as its cataloging and interlibrary loan support system. Its holdings number more than 1,455,000 monographic titles and 14,287 current serials. It borrowed 7,983 items last year, and lent 48,381. It did 90 percent of its borrowing outside the State, and more than 75 percent of its lending.

Costs

Little cost data is available for resource sharing in Iowa because the activity is quite decentralized. The most reliable data are those reported by the State Library for the Locator and

ICAN, and by the Regional Libraries. The six Regionals handled a total of 94,376 requests in the 1988 fiscal year. Their reported costs include salaries and benefits, telephone and postage, supplies, OCLC participation, and net lender payments. The costs do not include the Iowa Locator and ICAN costs because these are paid by the State Library and the participating libraries. They also do not include the costs of the requesting libraries contacting their Regional Libraries or the cost of fulfilling the requests at the providing libraries. The average cost of handling a request at a Regional Library is comparable to such costs in other states--approximately $4.00. The costs for individual Regional Libraries vary significantly and are difficult to compare because there are major differences in accounting practices, levels of service and techniques employed. Therefore, the costs for each of the Regionals are not quoted in this report. When isolating the labor costs, the average cost per request handled by a Regional Library becomes just over $2.50--costs which are consistent with those of regional services in other states.

The consultants held a total of eight focus group meetings around the State. The meetings are summarized in the order in which they were held:

Davenport

The Davenport Focus Group Meeting was held on September 27, 1988. Fifteen institutions were represented, including seven public, four academic, one special, and two school libraries, and one regional center. A total of 21 people were present.

The level of interlibrary loan activity varied considerably, with four institutions reporting more than 1000 a year, three from 500 to 1000, three from 100 to 500, and three under 100 a year. Nine of the libraries have a PC with modem available to the ILL unit. Four of the libraries have CD-ROM drives, and all use the Iowa Locator on CD-ROM.

The opinions expressed about CD-ROM technology were generally positive. It is deemed faster to use than microform, and more effective for searches when the information known about an item is limited. However, there was criticism of the Locator by several users, especially the lack of Boolean initially, the difficulty of browsing, and what was believed to be a large number of missing records. Several librarians are convinced that large numbers of records which have been submitted have not been loaded. While the consensus was that the Locator has reduced blind searching and has improved the ease and speed of locating materials, the value of the program will be limited until the Locator is more comprehensive and more libraries participate in ICAN.

Several of the librarians said that there should be more help in installing technology, especially if a library with limited funds has to use the PC and the CD-ROM drive for several applications. Three librarians expressed concern that there are only two State Library staff assigned to networking. They just can't respond to all of the requests for help which the librarians would like to address to them.

There was strong sentiment on the part of the group as a whole that public access to the Iowa Locator not be undertaken until the database is more complete and cleaned-up. A majority appear to think that there should also be significant improvement in delivery of materials requested on interlibrary loan before making the Iowa Locator available to the public because their expectations will probably increase when they know the holding locations at the time they make their requests.

Satisfaction time--the time from the patron's request to the time the material is available in his or her library--is generally one week or less for half of the material, but much longer for the rest according to the larger libraries. A significant percentage takes three to four weeks. The smaller libraries generally experience seven to ten days on all of their requests. Materials available in the Quad Cities are generally received within a week because there is an Illinois-based delivery van which serves a number of the libraries. A major factor in the delays encountered when materials are located beyond the delivery service area is reliance on fourth class mail for monographs. The AEAs have delivery service now. Consideration might be given to contracting with them, or sharing a commercial contract with them, said several of the librarians.

First class mail is also somewhat slow. A number of the librarians would be interested in telefacsimile transmission of journal articles, but there is a concern that the technology may

not be successful because of lack of widespread installation by other libraries and the cost of telecommunication. Coordination is deemed essential, preferably at the State level.

There is mixed feeling about reimbursement because those who are reimbursed do not appear to be more responsive than those who are not according to several of those who spoke. The Region reimburses Resource Centers now, but there is no standard for performance. Special groups such as IPAL (Iowa Private Academic Libraries) appear to be more effective than reimbursement to major lenders because the agreements are made among the members of a peer group who have frequent contact with one another said two college librarians. Several people expressed the view that those who perform badly can usually be avoided, unless it happens to be a major academic library.

It was stressed by the group as a whole that the area is predominantly rural. There is not much reciprocal borrowing. A Statewide borrower card would not be of much value--especially since several of the libraries in the Quad Cities already honor one another's cards.

There was not much support for the development of a circulation module for Iowa libraries. Only one person expressed mild support, but not for her own library. There are plenty of products out there for PCs. To the extent there is a problem, it is in the libraries which are too large for a PC-based system, but too small to afford CLSI or another turnkey system. If circulation is pursued, it should be an interface to local systems agreed a majority of the group.

The consensus was that the regions were not yet truly multi-type. The "public" limitation may have been removed in 1985, but the budgets were not increased to allow a broadening of the

programs. Multi-type is becoming stronger at the local level, but on the Region and State level it is still very weak according to several participants.

Cedar Rapids

The Cedar Rapids Focus Group Meeting was held on September 27, 1988. Fourteen institutions were represented: five public libraries, six academic libraries, and one each from an institutional library, high school library, and library science faculty. A total of 26 people attended.

The libraries reported interlibrary loan activity as follows: seven were in excess of 1,000 per year, one was between 500-1,000, one was between 100-500, and two had fewer than 100 per year. Eight of the libraries had a PC with modem available for ILL. Six of the libraries have CD-ROM drives and all six use the Iowa Locator on CD-ROM, though several commented that they had not yet seen the third edition of the Locator. Some of the public libraries commented about the lack of access to it.

In a discussion about the use of technology, the majority of the participants commented that CD-ROM is easier to search and is user friendly than microform. Many of the libraries have microfiche readers, but the librarians describe them as difficult to use. There were no advocates of this medium. Online catalogs are perceived to be the best, fastest, and easiest to use. If these were interfaced, the libraries would be able to access out-of-state libraries as well as nearby ones. However, there is concern that linking online systems may be too expensive. The majority of the librarians showed a definite preference for continued development of the Locator serials union list database. A majority preferred OCLC for access to monographs.

Three libraries are currently using ICAN. While there was very little comment on ICAN, all who have experience with it would like for it to be improved in terms of ease of use and availability across the State. The advantages of the Iowa Locator include helping direct patrons to other, smaller, closer libraries and containing the holdings of school libraries is helpful. The schools should open access to the collections if they are to be included in the Iowa Locator. Disadvantages of this service expressed by several academic librarians were that it is not helpful to academic libraries (it is easier to turn to the national database for locations), and that it is not as fast as OCLC.

Interlibrary loan turnaround time is one week if the request is sent on OCLC, and two weeks if other methods are used (ICAN, mail, etc.). Many librarians commented on the number of factors which may vary the turnaround time for a particular request. Most were satisfied with current turnaround time.

One library has installed a telefacsimile machine. Another has access to a fax machine located in City Hall, and three were considering purchasing machines in the near future. Everyone attending the meeting was interested in facsimile technology. The University of Iowa would consider a more expensive machine that would copy directly from bound books and journals.

The group as a whole did not think that satisfaction time could be reduced by any reimbursement by the State Library. If there were to be reimbursement, the majority would favor paying all lenders, not just major net lenders. Several of the academic libraries felt excluded in the current reimbursement plan.

For delivery of ILL materials, most of the public libraries were satisfied with current use of Fourth Class Mail. No

problems were reported with delays, but some commented about the varying times to deliver materials across the State. The academic libraries want a delivery system, but are worried about how to pay for it. Because their users have more of an urgent need than public library users, most of the academic libraries would like a guaranteed 48 hour turnaround time.

The establishment of a statewide library card seems to be a good idea, according to several of the public librarians. Academic libraries generally are not supportive of the idea, it would be more attractive if significant reimbursement were included. The University of Iowa would like consideration of reimbursement for direct access (they have 2,000 courtesy card holders). Some regional and/or county cards are already in use and are working well.

In a discussion about delivery versus a Statewide card, the comments were evenly split between academics and publics-- academics prefer a delivery system while publics prefer access card.

The majority of the librarians attending this focus group meeting believe that nothing serious would be lost if the State Library did not coordinate statewide ILL.

The majority of the participants expressed the view that the State Library should be more committed to access, and that reevaluation of the Iowa Locator is very necessary. They also expressed the opinion that the State Library should determine what level of delay is acceptable and the value of that delay. Is the additional money to reduce delays worth the expense? Continuing education by the State Library was not seen as a priority. The State Library needs better staff in its Library Development Division was another opinion expressed by several

participants.   This meeting had the most diversity between academics and publics.

Ottumwa

The Ottumwa Focus Group Meeting was held on September 27, 1988.   Eleven institutions were represented, including five public, three academic, and two school libraries, and one regional system.   A total of 15 people attended, including two trustees.

The libraries reported interlibrary loan activity as follows: one handled more than 1000 per year, three handled 500 to 1000, four handled 100 to 500, and two fewer than 100.   Five of the libraries have a PC and a modem available in the library, and all five have a CD-ROM drive.   Two of those with a CD-ROM drive have the Iowa Locator.

The attendees like the Locator because it provides good access without telecommunications cost.   The $55 cost per issue was considered reasonable.   Even the academic libraries which use it as a supplement to OCLC approve the concept.   None would advocate substituting microform.   There were several strong opinions expressed that there should be more training for using the Locator.   None of the attendees had any experience with ICAN.

The smallest libraries believe that the average satisfaction time is under one week.   Those who use OCLC and IPAL also believe that one week is typical.   However, the libraries which seek to obtain less popular materials without OCLC or IPAL, report that three weeks is typical.   This is a minority of the time (probably 14 percent, since that is the percentage of out-of-region ILLs), but still very significant.

The highest priority for the libraries represented in the meeting is extending ICAN to more libraries.   Telefacsimile for

the transmission of journal articles is also a high priority. There is little support for investing in a delivery service because the area is sparsely populated, thus making for high costs. The attendees would give even lower priority to reimbursing libraries for providing interlibrary loans to libraries outside their own service area.

As to the development of a circulation module, the two most succinct responses were: "in a small library a leak in the roof is more important than automating circulation;" and "don't go off on another project until the present one is completed." The group rated this project as the lowest priority for the State Library to pursue.

Waterloo

The Waterloo Focus Group Meeting was held on September 27, 1988. Eighteen institutions were represented: 12 public libraries, two academic libraries, and one each from a health sciences library, high school library, library science faculty, and AEA. A total of 32 people attended, including three Task Force members.

The libraries reported interlibrary loan activity as follows: three were in excess of 1,000 per year, four was between 500-1,000, one was between 100-500, and three had fewer than 100 per year. Four of the libraries had a PC with modem available for ILL. Four of the libraries have CD-ROM drives and all four use the Iowa Locator on CD-ROM. Money is the issue, not a lack of interest in the service. Only one library reported that it was not interested in CD-ROM--the health sciences library. The others commented that it is good for state and federal government documents and good for cooperative collection development.

Several negative comments were voiced about fiche technology, including that there is no frequent updating of

fiche, it is not user friendly, and there are limited access points. Many libraries don't have fiche readers.

Online catalogs contain the newest entries, there is no delay from cataloging to access on the system, it is the fastest and most comprehensive method. A Statewide online catalog and circulation system would be ideal, but the consensus was that it would be too expensive.

Two of the libraries are currently using ICAN. There was very little comment on ICAN, because of their lack of exposure to it. Positive comments about the Iowa Locator included that location and availability are essential for efficient resource and they would like to see their own holdings pulled off and used as a local catalog. Disadvantages mentioned were that there were too many limitations in searching, no author-title searching, no restrictions of search by year, type of material, etc., put more emphasis on regional Locators rather than a Statewide database, "unique holdings fall through the cracks in the Locator," and that it should include local locations (some disagreement with this concept). One librarian asked "Is any product being produced from the Locator that could be used for OCLC group access?"

Interlibrary loan turnaround time is one week within the region and two weeks for outside the region. The Northeast region has van delivery twice a week. They tradeoff speed with the access of the van--a small price to pay according to some. No demands of urgency were heard from the public libraries, only from several of the academics and schools.

Everyone attending this meeting was interested in facsimile technology. The use of PCs and scanners was mentioned as an alternative to fax machines; need to stay abreast of the advances in this technology. Fax is viewed as a way of making the library

the information center or information outlet for the community, but the smaller libraries are not open enough hours to support community use of the fax machines.

The group consensus was that the State Library reimbursement should be consistent. There was no consensus that satisfaction time could be reduced by any reimbursement by the State Library. The group placed a low priority on State Library reimbursement.

There was less interest in a Statewide delivery system as most of the requests are being filled within the Region.

There was some interest in a card good in different types of libraries and in more than one Region. Several reciprocal borrowing cards are in the use in the Region. The consensus was that school libraries need to be included in any program. There was some concern expressed that reciprocal borrowing would be a threat to the very small libraries as the users will go to the larger libraries. One librarian asked "Who pays?"

In a discussion about delivery versus a Statewide card, the Statewide card had a stronger appeal than a delivery system.

The consequences of the State Library not coordinating statewide ILL were seen by the group as: less money to be raised; less support for the Regional Libraries; and less ability to provide traditional ILL services. Several people expressed the view that the State Library needs to maintain its journal collection.

Leadership is lacking at the State Library level insisted several participants. Resource sharing is an Iowa problem, not an individual problem. There is a need to raise new money agreed the majority. Mention of a Task Force from three years ago: one of the recommendations was reimbursement to net lenders, a

library trustee wanted to know what happened to the report of the Task Force? Education of attitudes is critical. State Library should set standards and give guidance on programs, even if the second best program were selected, everyone would be participating in the same program said several. There was strong interest in multitype regional programs to be able to send requests for any type of library, not just like type.

Fort Dodge

The Fort Dodge Focus Group Meeting was held on September 28, 1988. Sixteen institutions were represented, including 11 public, two academic, and two school libraries, and one regional library system.

Only one library reported handling more than 1,000 interlibrary loans a year, two handle 500 to 1000, and eight handle 100 to 500, and four fewer than 100. Eight of the institutions have a PC with modem available for ILL use, but only three have CD-ROM drives. All three are using the Iowa Locator.

Those with experience with the Iowa Locator prefer it to microform. It is faster and more efficient. However, all complained that many holdings appear to be missing. Those with OCLC report that they frequently find in-state holdings in the OCLC database after not finding the information in the Locator. There was some frustration expressed over the change from one to two drives. Several librarians said that their libraries use a COM catalog prepared by Northwest Regional, and prefer the medium because of its lower cost. They would like to see a COM-fiche version of Iowa Locator in addition to the CD-ROM version. Only one of the libraries has experience with ICAN. The reaction is that it is very slow when run on an Epson, and "the instructions are terrible."

The Regional Library plays a major role in interlibrary loan in the Region. It processed 18,408 requests in the past fiscal year. It maintains an online database of public library acquisitions made in the region since 1978. It also maintains an older Regional union card catalog. The Iowa Locator is used as a back-up tool. Requests from libraries outside the Region are sent via ICAN. OCLC also is used as a back-up tool, but only for look-up. Locations within the State are contacted via ICAN if possible. Those outside the State are sent ALA forms.

Satisfaction time is believed to be approximately five days within the Region, but two weeks if from outside the Region. There is interest in decreasing the satisfaction time for that which comes from outside the Region, but no consensus about how to achieve it. Reimbursement of net lenders would be unacceptable to the majority. The use of coupons which would be given to all libraries which lend would be acceptable. Improved delivery would be more popular with the group as a whole. There is interest in exploring a possible contractual relationship with the AEAs which have delivery service. One of the AEAs in the area claims that it costs $.80 to deliver a book.

Twelve of the libraries are interested in telefacsimile, not only for journal literature, but also for reference referral service. The State Library could play a valuable role by obtaining a group discount. That would also reassure those which commit to purchasing equipment that other libraries also will be installing machines.

There is some interest in a Statewide library card. Two of the librarians were familiar with ConnectiCard and described it with enthusiasm.

The State Library should focus on coordinating resource sharing first, and consulting second said the group as a whole.

The majority said that it should not get involved in local matters such as circulation control. The comments included: "let libraries make their own choice" and "don't reinvent the wheel" and "link to what's already out there if you do anything."

Sioux City

The Sioux City Focus Group Meeting was held on September 28, 1988. The meeting was attended by nine institutions: four public libraries, three academic libraries, one health sciences library and one AEA. A total of 15 people attended.

The libraries reported interlibrary loan activity as follows: three exceeded 1,000 per year, one was between 500-1,000, two were between 100-500, and two had fewer than 100 per year. Five of the libraries had a PC with modem available for ILL. Four of the libraries have CD-ROM drives and two of them use the Iowa Locator on CD-ROM.

In a discussion about the use of technology, the attendees commented that CD-ROM is good for sharing resources, although it is not as fast as online. By using CD-ROM, libraries can access the holdings of the University of Iowa, as well as other resources available not on OCLC. Disadvantages of this technology include no subject access and bad searching strategies. All of the librarians in attendance have microfiche readers, but they offered little support for fiche. Online catalogs were described as speedy, current, and as offering direct access to the lender. It would ideally include withdrawn and revised materials. Online catalogs would eliminate the need to send requests to regional libraries.

Two of these libraries are currently using ICAN. Electronic mail messages take between three and four days. Users commented that there are too many reports and delays. Blue Bear has made attempts to streamline said one participant, but have they? Why

does the system contain duplicate records of identical ILL requests? Libraries receive multiple copies of the same book because of the duplicate requests said another. Two libraries in the area dropped ICAN--Sioux City Public and one of the academic libraries. Disadvantages of this service were that it is labor intensive and cumbersome searching from verification to sending of request. Northwest Regional --which plays a major role in ILL, with some 18,852 requests a year processed by it-- fills 28% from the collection of the Sioux City PL; 31% from the COM catalogs of the Northwest and North Central Regionals, 21% through OCLC and only 15% through the Locator and ICAN. ICAN should improve sharing of resources but it is not effecting a total cooperation in sharing.

The Iowa Locator is seen as slower than OCLC by those familiar with both. Northwest Regional's representative cited the Locator as 30% effective for locations, while OCLC is 90% effective. Some libraries find it difficult to justify spending the money to obtain 5% of 3% of their total circulation (ILL is 3% of total activity). Several other libraries are using OCLC and then will search the Locator and send on ICAN. Despite these drawbacks, the Iowa Locator eliminates blind searching and may be the only way to know the University of Iowa's holdings agreed the group as a whole.

Interlibrary loan turnaround time is one week for the publics and the health sciences libraries. The academic libraries cited a two week turnaround time.

One library has access to a telefacsimile machine. It is located in another department in the hospital. All of them were interested in fax technology, but sense that it would not significantly improve their delivery time. Fax may be more appropriate in larger libraries. Photocopies constitute a small proportion of some public libraries' ILL.

Two years ago, the State Library compensated, but not last year said one participant. Compensation is a good idea if all net lenders are compensated was the opinion of several others. Reimbursement is not a high priority with this group.

These librarians were satisfied with local arrangements for ILL delivery. Sioux City has a runner for materials within the city. Most were satisfied with the U.S. mail. AEA uses UPS for delivery and seems satisfied with that method of delivery. The academic libraries stressed the importance of a delivery system, but it doesn't seem that important to public libraries. Postal costs have not been addressed by the State Library said several. One asked "Who will pay for a delivery system?"

The establishment of a Statewide library card seems to be a nice idea according to the majority of the group. These libraries assume the card would not be for private institutions. County support for county-wide access card is possible.

These attendees were very neutral about delivery versus a Statewide card. Both seem to be good ideas, but there was no strong consensus for either.

The librarians believe that the consequences of the State Library not coordinating statewide ILL would be less support for the Regionals in terms of education, ILL, and cooperative efforts.

Information needs of the general public are demanding better services. The view was expressed by several that the State Library needs to look at the large concept of resource sharing. Two persons expressed the view that the western part of the state is "politically lost." Several harsh comments were made about what the State Library is not doing for the area. The Region,

not the State, is the key to resource sharing was the consensus of the group. AEA wants consideration of networking of public and school libraries. Costs $.29 per item for AEA to lend. Provides twice a week delivery to the area. Why must area colleges go through the local public library to access the Regional libraries?

Council Bluffs

The Council Bluffs Focus Group Meeting was held on September 28, 1988. Nine institutions attended: six public libraries, one academic library, one health sciences library, and one AEA, for a total of 14 people (including one Task Force member--Phyllis Goldberg).

The libraries reported interlibrary loan activity as follows: one was in excess of 1,000 per year, four were between 500-1,000, and one was between 100-500. None of these had fewer than 100 per year. Two libraries had a PC with modem available for ILL. Four of them have CD-ROM drives, but only one (the Regional Library) uses the Iowa Locator on CD-ROM.

These librarians complained that CD-ROM is too expensive. All of the libraries have microfiche readers, and 45 libraries are on the fiche union list. Online catalogs are easier to use, faster, but also too expensive according to the group.

Only the Southwest Regional Library currently uses the Iowa Locator and ICAN. However, libraries are asked to check the Regional union catalog on fiche before submitting requests. Requests from libraries which do not have the fiche go the Council Bluffs PL. The Regional staff is generally satisfied with the Locator, but do not like ICAN. They say it is not as efficient except for blind searching. It is considered to be cumbersome. The Council Bluffs PL has OCLC available for check-

III - 16

ing that which is not found in the regional union catalog, its own collection, or the Iowa Locator.

Interlibrary loan turnaround time is reported to be three or four days, if within the region; one week if outside the region.

One library--the hospital library--has access to a telefacsimile machine. There is interest in fax, but it is seen as more beneficial to the "larger" libraries. Fax would encourage cooperation with other agencies in some of the smaller towns, i.e., good PR for the library.

There is not strong interest in State Library reimbursement. Council Bluffs and four to five others are minimal net lenders. Stronger interest lies in the concept that libraries which contribute to the success of ILL should receive payment. Only two did not agree with this concept. Mail service is usually two days in this Region. UPS or other delivery services were not of interest. Nearly all (95%) of the requests are sent out by the Regional Library the following day, thus there is no need to improve the delivery system. The AEA had van delivery twice weekly. The AEA is interested in linking with other libraries. AEA had a project with the Regional Library several years ago, but the scheduling of the vans was a problem. The schedules were not coordinated, thus the materials could sit for several days between pick-ups. In this part of the State, librarians view access to libraries in Omaha (Creighton and Nebraska-Med) as more important than to other libraries in Iowa.

There is no interest in the establishment of a Statewide library card because of their geographic isolation. There seems to be interest in a regional card which includes Omaha. The Statewide card versus delivery choice is really not an issue at all, given their lack of interest in either. The librarians attending this focus group meeting believe that the declining

role of the State Library in ILL is a consequence of the State Library's failure to coordinate Statewide ILL.

The Regional system is much more effective and important than the State Library is the consensus of this group. General education is done in several Regionals (software, OCLC, BRS searching), why shouldn't the State Library coordinate that education? The State Library needs to provide a full-time building consultant and a full-time automation consultant according to several participants. Several asked "Why are the academic and public libraries under two different departments (Education and Cultural Affairs)?" Another asked "How can the State Library coordinate academic libraries when it has no control over them?" The State Library should coordinate at the State level all the local and regional projects being undertaken said three active participants. Area 11 is developing its own projects since it could not be on the Locator. There is interest in the AEA coordinating the purchase of films for the Regional; there already are 100,000 volumes in the AEA. AEA has a paper catalog--major update every three years; annual supplements. Task Force member Phyllis Goldberg raised the question of governance: why is the State Library Commission no longer effective? Will the consultants report to the Task Force be available to the public? Will the final report be published?

Des Moines

The Des Moines Focus Group Meeting was held on September 28, 1988. Twenty-nine institutions were represented, including 10 public, nine academic, one school, and five special libraries, and four AEAs and regional centers.

Eight of the libraries handle more than 1000 interlibrary loans a year, one handles 500 to 1000, four handle 100 to 500, and 12 handle fewer than 100. Sixteen of the institutions have

a PC with modem available for ILL use. Eleven libraries have a
CD-ROM drive, and all use it with the Iowa Locator.

The concept of a union catalog on CD-ROM is generally
popular, although some complained that the Locator is not current
enough.   The larger libraries expressed a preference for OCLC,
but see that CD-ROM is a good midway point between fiche and
online.   Those who have used both OCLC and the Locator say that
the hit rate is much lower on the Locator, even for in-State
materials.   One attendee said that 40 percent of that which is
searched in the Locator is not found, and almost all of that is
subsequently found in OCLC.   The school librarians and AEA
representatives were very critical of the lack of A-V material in
the Iowa Locator.

ICAN had been used by only three of the attendees.   It is
deemed to be slow and cumbersome.   The documentation is deemed
inadequate and poorly written by all of them.   The limited nature
of the ICAN network was also mentioned, but the critics expressed
the view that expansion of the network should be expected to take
time.

Satisfaction time is generally one week for half of the
material according to the larger libraries.   Smaller libraries
have a much larger percentage of their needs met within one week.
Two to three weeks is typical when materials are obtained from
outside the region.   The attendees would like to reduce the
satisfaction time, but are concerned by the potential cost.   A
Statewide delivery service is believed to be out-of-reach.
Telefacsimile is of interest to a large majority of the
libraries. They would expect to pay for it themselves, but would
like the efforts of the individual libraries coordinated. Several
persons stressed that telefacsimile is an excellent tool for
reference as well as ILL.

The group was sympathetic to the reimbursement issue raised by four of the libraries. The view was expressed that the "providers make the system work." While some compensation is needed, the group had no clear ideas about the best approach. Its consensus appeared to be that compensation need not be at 100 percent of cost, and that it is most needed for inter-regional borrowing. One person said that the State Library should not resist the idea because "it cannot continue to sell a service that belongs to someone else without taking the needs of the provider into consideration."

The group expressed considerable interest in a Statewide library card because the cost of accommodating patrons who retrieve materials themselves is less than the cost of providing labor intensive interlibrary loan.

Summary

The Locator and ICAN are not now meeting the resource sharing needs of all of the libraries in Iowa at this time, but the comments reflect experience with Locator II, not the recently introduced and much expanded Locator III. There is little disagreement that the ideal union catalog/list would be online and would be integrated with the ILL messaging facility. Cost is a barrier. The largest libraries will solve the problem for themselves by participating in OCLC. For the rest, if the current tools are to be kept, major improvements should be made. For most, fiche would be a backward step.

Opinions on the use and improvement of the Iowa Locator and ICAN were difficult to obtain except from the few users present at the meetings. Neither users or non-users were able to articulate what the deficiencies are, other than incompleteness.

Telefacsimile is of greater interest than either statewide delivery service or a statewide card. Most libraries were

generally satisfied with delivery in their regions, and worry about the cost of interregional delivery. Geography is an important factor in interest, or lack thereof, of a statewide borrowers card. Those in urban areas are more interested than those in rural areas.

Reimbursement of lenders, while seen by some as a good idea, would not significantly improve service in the opinion of others. Any program should be perceived as funding all suppliers, not just those who are major net lenders. The issue needs to be addressed by the librarians of the State in a series of frank discussions.

ISCI prepared and distributed a survey form seeking information about the collections of Iowa libraries and their activity levels in technical services, circulation, interlibrary loan and automation (See Appendix C for a copy of the form). Survey forms were mailed to a total of 1,300 libraries including one to each academic and public library in the State and 539 to randomly selected school libraries and Area Education Agencies. By October 28, 1988 responses had been received from 352 libraries--a response rate of 27 percent. The response rate for statewide surveys of this type is usually in the 20 to 30 percent range. While some libraries appear to have been confused by the lengthy survey form, the consultants have reviewed over 10,000 responses to similar surveys over the past several years and did not discern a different pattern in the Iowa responses than they have encountered in the past.

The 352 libraries which responded reported 11,383,452 titles, with 5,624,239 held by academic libraries, 4,390,500 by public libraries, 134,213 by special libraries, and 1,234,500 by school libraries. The institutions also reported a total of 98,544 serial subscriptions, with academic libraries reporting 72,831, public libraries 15,417, special libraries 3,666, and school libraries 6,630.

Overall, only a small number of libraries have any machine-readable records. The academic libraries are far ahead of the other types of libraries in this respect, with 53 percent of their records in machine-readable form. Public libraries have only 13.5 percent of their records in machine-readable form, special libraries only .048 percent, and school libraries only 18 percent. Almost all of the records are full-length and in the MARC format.

The libraries add 449,182 titles a year, with academic libraries accounting for 214,516, public libraries for 180,478, special for 8,024, and schools for 46,164. OCLC is the most widely used cataloging support system, with 29 percent of the academic, 7 percent of the public, and 14 percent of the special libraries using it. None of the school libraries participate in OCLC. BiblioFile is the second most common cataloging support system, with 14 percent of the academic libraries and 6 percent of the public libraries using it. None of the special or public school libraries responding to the survey use BiblioFile.

Many of the libraries do not catalog serials. Only 19 percent of the academic libraries do so, 9 percent of the public, 19 percent of the special, and 6 percent of the schools. The percentages cataloging microforms are 18 for academic, 11 for public, 14 for special, and 8 for schools. Audio-visual materials are cataloged by 84 percent of the academic, 52 percent of the public, 57 percent of the special, and 65 percent of the school libraries.

The total reported annual circulation of the libraries is 17,139,124, with academic libraries accounting for 2,931,207, public for 10,958,436, special for 118,621, and school for 3,130,860.

The libraries reported borrowing a total of 148,752 items a year. with academic libraries accounting for 51,670, public for 43,794, special for 7,086, and school for 46,202. Lending was reported as 957,083, with academic libraries reporting 106,034, public 49,490, special 2,528, and school 798,977. The school figures represent the very high activity levels of the AEAs, including film bookings--loans made almost entirely within their own districts. Only the school figures are inconsistent with what the consultants would expect for a state as large as Iowa.

Eighteen percent of the libraries go out of the State more than 15 percent of the time for their borrowing, and 13 percent lend out of the State more than 15 percent of the time. Of the 19 libraries which go out of the State more than 15 percent of the time 13 are academic libraries, 2 public libraries, and 4 special libraries. In fact 16 of the 19 do more than 50 percent of their lending and borrowing out of the State. They are:

Clinton Community College
Davenport Public Library
Iowa Department of Commerce
Iowa Department of Transportation
Iowa State University
Marycrest College
Muscatine Community College
Palmer Health Sciences College
Pioneer Hi-Bred International
Public Library of Des Moines
Rockwell International
Saint Ambrose University
Southeastern Community College
University of Iowa
Whartburg Theological Seminary
Wilcox College

OCLC is used as the primary tool for interlibrary loan by 23 percent of the libraries, including 64 percent of the academic, 17 percent of the public, 19 percent of the special, and 2 percent of the schools. Thirteen percent report using a microform union catalog as their primary tool--primarily union catalogs prepared by two of the Regional Library Systems. The Iowa Locator on CD-ROM is directly used by 8 percent of the libraries. The Regional Libraries use all of the same tools on behalf of libraries, plus searching local library systems. The actual impact of the Locator is greater than 8 percent because so

many of the requests made by public libraries go through Regional Libraries which use the Locator.

Thirty-six percent of the libraries participate in a delivery service, including 30 percent of the academic, 17 percent of the public, 9 percent of the special, and 58 percent of the schools.

Perceptions of satisfaction time--the time from a patron's request until the material is available in his or her library--differ a great deal. Approximately 26 percent believe it is one week or less, 38 percent think it is one to two weeks, four percent think it is two to three weeks, and one percent say it is more than three weeks. The rest did not express an opinion. The distribution of responses was similar for each type of library.

A majority of the respondents who expressed an opinion have positive opinions about the current state of resource sharing in Iowa. Typical comments were: "very good," "good and reliable," "much improved over previous years," "Locator encourages participation by all types and sizes of libraries," "regional system works well," "good cooperation," "improving," "ICAN has possibilities," "turnaround time really good if material is available." A frequent comment was that the Locator and ICAN are good technologies, but their impact will be limited as long as so few libraries have them.

The negative comments about the state of resource sharing offer some valuable insights. Several respondents said resource sharing is confusing because of the number of different agreements and systems in place. One academic librarian said that they will continue to use OCLC because they can find what they want using only one system. This view is echoed in another comment that library resource sharing is unfocused, with various groups within the State having formed cooperatives or

implemented reciprocal agreements. Another called resource sharing "patchy," with Statewide, multi-type sharing leaving much to be desired. Several school librarians commented that almost all their resource sharing is within school districts, with little activity among districts or between public and school libraries. There were numerous criticisms of the Locator and ICAN, with the emphasis on lack of user cordiality and poor documentation.

Approximately 36 percent of the libraries have automated one or more functions, including 74 percent of the academic, 26 percent of the public, 33 percent of the special, 32 and percent of school libraries.

There is CD-ROM equipment in 17 percent of the libraries, including 48 percent of the academic, 11 percent of the public, 14 percent of the special, and 14 percent of the school libraries.

Approximately 36 percent of the institutions have one or more PCs with modems available to ILL, including 78 percent of the academic, 25 percent of the public, 52 percent of the special, and 32 percent of the school libraries.

Remote database searching is being done by 24 percent of the libraries, including 70 percent of the academic, 6 percent of the public, 52 percent of the special, and 26 percent of the school libraries.

The conclusions the consultants have drawn from the surveys are as follows:

o   For its size, the State of Iowa is bibliographically rich, with more than nine million unique titles, of which over half are accessible online.

o   The responding libraries hold approximately two-thirds of the bibliographic resources of the State and are responsible for three-fourths of the interlibrary loan activity;

o   The Iowa database is limited only by the fact that a disproportionate number of the records have been contributed by the academic libraries and a few large public libraries.

o   The academic libraries and larger public libraries are committed to OCLC because it is an integral part of their operations, it provides them with a high hit rate, and it gives them access to resources in other states.

o   Audio-visual materials are cataloged by a majority of all types of libraries and could be added to the Iowa database.

o   The Regional Library Systems handle the largest single block of interlibrary loans.

o   School libraries and academic libraries make more widespread use of delivery service than public and special libraries.

o   A large majority of respondents believe satisfaction time is less than two weeks.

o   Automation of internal operations is widespread only in academic and large public libraries;

o   CD-ROM equipment is widely used only in academic libraries.

o   PCs are widely available only in academic and special libraries.

o   Remote database searching is widely performed only in academic and special libraries.

The State Library of Iowa serves as the coordinator of cooperative library programs throughout the State, a back-up of libraries to other libraries, and as a direct service agency to some 50,000 State employees. It has a collection of 148,376 monographic titles (324,762 volumes) and more than 2,000 current serials. Its collection includes a large number of Iowa State documents, the records for which are widely distributed in the quarterly Iowa State Documents.

The collection grows at a rate of one percent per year. Each year it orders 900 monographic titles, and catalogs approximately 1,700 (including State documents) on the OCLC system. Approximately 35 percent of the records are in machine-readable form--all in the MARC format. The State Library does not catalog serials and microforms. It does catalog audio-visual materials, but in the A-V unit, rather than in technical services.

Daily library attendance is in excess of 200. Annual circulation is approximately 8,000. The Library handles nearly 16,000 interlibrary loan requests a year, lending nearly 700 books and supplying approximately 15,300 photocopied documents in lieu of loans. It also borrows more than 2000 items a year. It does 60 percent of its lending and 80 percent of its borrowing within the State.

The major operational problems with the present manual systems are:
  a. Funds accounting is cumbersome because there are many allocations;
  b. current holdings are not available at all public service points; and

c. it is difficult to ascertain the resources of nearby libraries, especially those of other state agencies.

The State Library's automation to date consists of the OCLC cataloging and interlibrary loan support systems. Its priorities for future automation are (1) patron access catalog, (2) serials control, (3) circulation, (4) local cataloging, and (5) acquisitions, in that order. It has already automated media booking, although it might consider integrating that function with the others. It is interested in sharing an automated system with other State agency libraries.

The criteria by which automation will be evaluated are (1) improved service, (2) improved resource sharing, (3) improved productivity, (4) cost containment, and (5) cost reduction, in that order.

The consultants have developed the following recommendations based on their analysis of the data from the focus group meetings, survey responses, and documents provided to them:

1. <u>The Iowa resource sharing program should use multiple tracks of access and communication, with OCLC, the Locator and ICAN, and In-WATS to Regional Libraries as the major tracks.</u>

The State of Iowa is too diverse to implement a single solution for locating materials in libraries and communicating interlibrary loan requests. The libraries of the State range in holdings from fewer than 2,000 to millions of titles. The interlibrary loan volumes ranges from fewer than a dozen to tens-of-thousands a year. The consultants estimate that the total interlibrary loan volume generated by Iowa libraries is approximately 250,000 requests per year, with 38 percent through the Regional Libraries (some of which subsequently goes through OCLC or ICAN), 18 percent through OCLC, 12 percent through ICAN, 3 percent through RLIN, and the balance directly among libraries.

Fifty-three of the larger libraries of the State, including 64 percent of the academic libraries, rely on OCLC as their primary interlibrary loan tool. They should continue to do so because OCLC provides them with a very high hit rate and attractive costs. The average hit rate is in excess of 87 percent. Typically, academic libraries realize an 80 percent hit rate against the OCLC database of more than 18 million titles and 320 million holdings, and public libraries realize 90 percent. The anecdotal evidence in the focus group meetings and survey responses clearly establishes that the libraries which have both OCLC and the Iowa Locator/ICAN choose the former.

Not to be underestimated is the role of OCLC as the de facto national database. The database contains more than 316 million locations in the libraries of the other 49 states and several foreign countries. Sixteen libraries in the State, including two major public libraries, depend on libraries in other states for more than 50 percent of their ILL borrowing. Forty-four other libraries have direct access to OCLC member holdings in other states, and all Iowa libraries have indirect access to the OCLC database through the Regional Libraries.

There is a group of libraries which have chosen not to use OCLC for cataloging and interlibrary loan support, yet which could justify the $3,200 cost of an Iowa Locator/ICAN work-station (the minimum Locator hardware configuration, plus $800 for the ICAN upgrade). This group numbers at least 100 libraries. As long as their telecommunications costs were subsidized, they would probably make the Locator and ICAN their primary interlibrary loan tool. While the decision to use Locator/ICAN will be made by each institution, the State Library should assume responsibility for the viability of this track. The objective should be participation by a large enough number of libraries to make the costs comparable to the OCLC track.

If one takes the present costs for maintaining the Locator and ICAN ($74,500 and $52,500 a year respectively) and the present level of activity on ICAN (34,000 requests a year), the cost per request handled through the Locator and ICAN is $3.74. This figure does not include the cost of the hardware necessary to use the Locator and ICAN. For the 22 libraries which have both the Locator and ICAN, the total equipment cost is a minimum of $70,400. If amortized over five years, the annual cost would be $14,080 per year for the 22 libraries. For 34,000 transactions, that would add $.41 to the cost of each request, bringing the total to $4.15 per request. Clearly the key to a

cost effective Locator/ICAN program is greater volume than is now achieved.

If one were to increase the 22 Locator/ICAN sites by 50 from 22 to 72; the incremental cost per institution added would be a minimum of $3,200 for the one-time hardware cost, or $640 per year if amortized over five years. In addition, there would be $220 per year for the cost of each additional Locator subscription, and $624 per year per library for the additional ICAN processing and telecommunications. The annual cost per additional library would be $1,484. For 50 libraries, the total additional cost would be $74,200 per year on top of the current $127,000 per year outlay: $201,200. If the result of adding 50 libraries was a doubling of ICAN activity to 68,000 requests a year, the average cost per request would be $2.96.

If the number of Locator/ICAN libraries was increased by 100 to 122, the total would undoubtedly include the 37 libraries which now have the Locator without ICAN. Therefore, for these institutions the incremental cost would consist only of the $800 ICAN upgrade and the $624 per year in telecommunications and message processing, or a total of $29,008 per year ($800 divided by five years, plus $624, times 37). The cost for 63 complete Locator workstations and ICAN upgrades for the rest of the libraries would be $201,600, or $40,320 per year if amortized over five years. The cost for 63 additional Locator sub-scriptions would be $13,860 per year, and for 63 additional ICAN participants would be $39,312 per year; bringing the total for the 100 additional libraries to $122,500 per year ($29,008+ 40,320+13,860+39,312). The total cost for participation by 122 libraries would become $249,500 per year ($127,000+122,500). If the total level of activity tripled to 102,000 per year, the average cost per request would be $2.45. The consultants consider this an attractive cost.

The consultants calculated the cost of adding 50 libraries
to OCLC, rather than to Locator/ICAN. Since these libraries
would be added to OCLC only for interlibrary loan, they would be
select members under the Group Access Capability (GAC) program.
They would not require expensive PC-based workstations, but
intelligent terminals. The cost of the program would be $1,175
for the M220 terminal, modem, and installation if purchased
through BCR (although libraries would have the option of
installing their own Wyse 50 terminals with modems at half that
cost). Training would be $21 per library if done in groups of
ten. Group profiling would cost $300, and library profiling $40
each. The total start-up cost for 50 libraries would be $62,100.
If this cost were amortized over five years, the annual cost
would be $12,420. There would be a $205 a year administrative
fee for the group. Each display of holdings would cost $.22 if a
monograph and $.11 if a serial. If half of the requests were
serials, the average display would cost $.16. ILL processing
would be $1.16 each. Telecommunication would be $8.25 per hour,
with an average ILL taking 4 minutes at a cost of $.52. The
total variable cost per ILL request would be $1.84. If the
result of adding the 50 libraries was a 34,000 increase in the
number of requests each year, the total variable cost would be
$62,560. When added to the fixed costs, the total annual cost
would be $75,185 ($12,420+205+62,560) or $2.21 per request. The
actual cost would be somewhat higher if non-OCLC records were
added into the OCLC database (reasonable, since Locator costs
include the loading of non-OCLC records into the database). If
the non-OCLC records also were loaded into OCLC, the annual cost
of doing so would probably increase the OCLC cost by more than 10
percent to approximately $2.45 per request.

The cost of adding 100 libraries to the OCLC database would
be $123,900 in start-up costs and $125,529 in ongoing costs if
the libraries increased the interlibrary loan activity by 68,000
a year. That would make the average cost per loan $2.21.

However, with the cost of loading non-OCLC tapes, the actual cost would be at least 10 percent higher, or approximately $2.45 per request.

The consultants conclude that expanding Locator/ICAN by 50 libraries would not be cost effective. It is less expensive to add the libraries to OCLC as selective members. At 100 libraries, the costs of the options are virtually identical. Therefore, the target for a cost effective Locator/ICAN program should be a minimum of of 122 participants with an activity level of at least 102,000 transactions a year--approximately 40 percent of the State's total ILL activity.

These calculations do not reflect a possible reduction in OCLC ILL charges effective mid-1989. The intent is to dramatically reduce the ILL processing cost when an institution specifies a single library to which it wants its request sent, rather than the five to which it now automatically is transmitted. The reduction may be as great as 50 percent (i.e., $.53 instead of $1.16). If that does occur, OCLC would offer a lower cost option than the Locator/ICAN even with 100 additional libraries participating.

Interconnectivity between the libraries using OCLC and Locator/ICAN should be achieved by having OCLC participants which does not already have ICAN reconfigure an OCLC M300 PC-based workstation with the ICAN upgrade. An OCLC particicipant then would be able to accept requests from Locator/ICAN libraries, and to send messages to them. The OCLC participant also would have the option of adding CD-ROM drives and searching the Locator, although most would probably not choose to do so--relying instead on the much larger OCLC database.

The expansion of the Locator/ICAN program should not be undertaken without determining how many libraries are prepared to

accept a Locator/ICAN installation--including how many would be prepared to underwrite all or part of the cost. The consultants estimate that a total of 160 libraries are potential users of Locator/ICAN. If the total number of potential installation falls short of 122, the State Library should consider promoting OCLC as the State's ILL system in lieu of the Locator and ICAN.

Separate provision must be made for the libraries which feel they cannot justify participation in ICAN/Locator because of the cost and their relatively low level of ILL activity. Most of these libraries do well under 100 interlibrary loans a year each. The consultants estimate the number of libraries at over 1100. They recommend that these libraries be offered IN-WATS access to the seven Regionals, with each of the Regionals to use the Locator/ICAN and/or OCLC in support of their activity. These would be the most expensive requests to process because the Regionals have labor costs averaging $2.50 per request which would need to be added to the costs for the Locator/ICAN or OCLC. There also would be the In-WATS cost of approximately $.25 per request. The average total cost of third track requests would be over $5.00. However, the number of third track requests would be modest, probably no more than 25,000 per year since it is highly likely that many academic, special, and school libraries will continue to go directly to large nearby libraries.

Even at $125,000 per year, the cost of this approach to the third track is substantially lower than the cost of installing the Locator and ICAN in these 1100 libraries. It also is less than the cost of providing microfiche reading equipment and quarterly fiche editions of the Iowa database to 1100 libraries.

The consultants advise against an online interlibrary loan database for the State because the high cost of implementing and operating a standalone online system for that purpose would have to be allocated over fewer than 180,000 interlibrary loans

VI - 6

requests a year--a figure which assumes that the system would capture no more than two-thirds of the activity. The consultants estimate that an online system would cost a minimum of $800,000 to implement, and more than $300,000 a year to operate. Therefore, the cost per request would be at least $2.56.

Mounting the online database on an existing system is not practical because the only one robust enough to accommodate a database of as many as ten million records is the University of Iowa's NOTIS system. Unfortunately, that system would be even more expensive to use than a standalone system because NOTIS does not allow online production use, including creating or editing a record, without the payment of a license fee of $35,000 for each participating institution.

2. The number of copies of the Locator should be increased to at least 122.

The State Library should be prepared to renegotiate its 1988-1989 contract with Blue Bear to obtain at least 122 copies of the Locator--the minimum number at which the cost of the Locator/ICAN program is comparable to that of OCLC. However, it should not undertake the negotiation until it has identified at least 100 libraries ready to participate in an expanded Locator/ICAN program. Based on current pricing, the additional cost should not exceed $9,240 per year.

Locator IV, that to be produced between July 1, 1989 and June 30, 1990 will not involve the extensive development work which has characterized Locators I through III. The State Library should consider seeking competitive bids for Locator IV, or for Locators IV and V. There are now a number of companies other than Blue Bear with experience in producing CD-ROM union catalogs, including Auto-Graphics, Brodart, GRC, and the Library Corporation. In order to make an orderly transition to another vendor, should one win the bid away from Blue Bear, the State

Library would have to make the award by April 1, 1989. This means that an RFP should be issued no later than January 16, 1989.

3. The scope of the Iowa Locator should be broadened to include all formats.

The scope of the Locator is more limited than the needs of the libraries of the State. The consultants have concluded that the numerous complaints about failure to load records into the Locator is not traceable to poor performance by Blue Bear, but restrictions on the scope of the database. It was initially limited to English language monographs published in the U.S. Locator II's scope was broadened to include all monographs. Locator III includes serials. Remaining out-of-scope are maps, A-Vs (including sound recordings), and software. The consultants strongly urge that the Locator include materials in all formats. The major effect will be somewhat greater storage requirements, thus hastening the day when the Locator will require three disks.

A substantial majority of all types of libraries catalog their A-V materials, so there will be records available for loading. While many A-V records which have been processed by school districts and AEA's using computers are not in the MARC format, Blue Bear can match them against MARC records if they include a title field, publisher field, and year. If a matching record is not found, the record could be included as a non-MARC record. However, the State Library should seek to work with institutions which catalog audio-visual material to encourage the use of MARC for future cataloging.

Many of the criticisms leveled at Locator II appear to have been addressed in Locator III. If the scope is expanded as recommended, the Locator will be an excellent tool capable of providing 85 percent or more of the locations needed. Important improvements the consultants recommend are listing the displays

in alphabetical order, quoting the number of hits, and offering options to limit a search. Locator III should be evaluated again by a small ad hoc committee of librarians in the third quarter of 1989 to provide a list of enhancements which should be considered for Locator IV.

4. <u>The State Library should seek to subsidize the purchase of CD-ROM drives and the ICAN telecommunications upgrade</u>.

The prospect of increasing the number of Locator/ICAN sites to at least 122 would be substantially improved if the State Library were able to subsidize the purchase of CD-ROM drives and the ICAN portion of each workstation. It should not consider subsidizing the purchase of the PCs because more than one-third of the libraries in the State already have a PC available to ILL. The one-time cost of providing the Locator equipment to 63 additional libraries and the ICAN equipment to 100 additional libraries would be $117,800.

5. <u>The State Library should promote the Open System Interconnection (OSI) Reference Model as the means of linking local library systems in the future</u>.

The State Library should anticipate future trends in library automation and resource sharing. Libraries are beginning to link or interface automated library systems so they can dial into one another's databases. The advantage is that they can determine current availability as well as holdings. The OCLC and Iowa Locator databases can only show what is held, but not that which has just been withdrawn, charged to a patron, or sent to the bindery. When local library systems are linked, the searcher is given absolutely current information.

Linking or interfacing is difficult to achieve without standards. These are now in development. Among them are the standards which are common to all applications: physical connectivity, network connection, etc. These have been

completed by various bodies. However, the key is the development of standards unique to library applications. These include standards for bibliographic record transfer, interlibrary loan messages, common command language, and patron records. The National Information Standards Organization (NISO) is overseeing the development of these standards--which will become part of the OSI suite of standards. When the standards have been implemented it will be possible for a person at a terminal of one system to access another system without knowing the unique command language of the other system. The link or interface will be "transparent" to the user.

Good progress is being made. The bibliographic record transfer standard has been published, the ILL and common command language standards have been drafted and are out for balloting, and the patron standard is in committee. All four standards should be published by late 1989. Most of the major vendors of the automated library systems have made contractual commitments to implement the OSI standards within 24 months of their publication.

Libraries will probably implement the OSI standards shortly after they become available because it will provide them with linkages to bibliographic utilities, jobbers' systems, their own business offices' systems, and the systems of other libraries. Where the first tier libraries now rely on OCLC for ILL, they may choose to rely on the linking of systems when enough systems have the OSI capability in place.

The consultants recommend that the State Library stay abreast of OSI developments. As soon as vendors set prices for their OSI products a study should be undertaken to determine the cost of linking Iowa libraries. While the consultants estimate that the cost per system linked may be as high as $25,000, they urge that the State Library's study allocate costs among the

different applications. A library which might use its system's OSI capability 10 percent of the time for resource sharing, and the rest of the time to send orders to vendors and to transfer information to and from another computer in its business office should not be in a position to have the entire cost of the interface charged to a resource sharing program.

The State Library should assist the libraries of Iowa by providing occasional workshops on the linking of systems using OSI. The cost of a one day workshop should not exceed $1,500. Inasmuch as the foundation for OSI must be laid in the specifications libraries prepare for the procurement of automated library systems, the first workshop should be held in early 1989. The delivery of OSI capabilities will begin as early as 1990.

6. <u>The State Library should consider porting ICAN to a host system in Iowa</u>.

The State Library should consider porting ICAN to a host system in Iowa, not to reduce telecommunications costs as some survey respondents recommended, but to reduce tape processing costs. The cost of two In-WATS telephone lines for ICAN if the host were in Des Moines would be $86.86 per month, plus $9.75 per hour of usage from area code 515 and $15.55 per hour of usage from area codes 712 or 319. If one assumes a total of 3,600 hours of usage a year to support 102,000 transactions, one-third from each area code, the cost for telecommunication would be $49,032 per year. The cost of two in-WATS lines to Colorado for the same number of hours would be $53,270 (based on $119.18 per month plus $14.40 per hour).

While the telecommunications savings would be minor, the cost of the processing could be reduced from approximately $40,000 to $20,000 per year if ICAN were mounted on a multi-user, multi-function automated system installed at the State Library.

The ICAN application would use the same hardware as the other applications. The major costs would be operator time and supplies. These are estimated at just under $.20 per transaction or $20,000 for 102,000 transactions a year.

The consultants recommend that no action be taken until July 1, 1990, both to permit preparation of the new host and to give the present ICAN system a chance to stabilize before changing hosts. The ICAN contract should be renewed through October 15, 1990 to provide a brief period of overlap in case the transition to the new host takes longer than anticipated. The consultants recommend that Blue Bear be asked to redo the ICAN manual as a reference manual for operators to facilitate quick look-up when specific operational problems are encountered.

7. <u>The State Library should obtain a cost quotation for use of the Iowa Educational Telecommunications Network</u>.

Iowa Public Television is planning the implementation of an educational telecommunications system which will meet a variety of telecommunications needs of the State's educational institutions, including data communication. Since no contract has yet been awarded, it is impossible to estimate the costs for using the planned network. Often a backbone network of the type envisioned is very cost effective for those at or near the nodes, but not for those who must access the nodes through Telco lines or over special circuits--the so-called "last mile." The consultants recommend that the State Librarian formally express an interest in possible use of the network, but request cost information about tieing the 122 ICAN libraries to the approximately 100 nodes envisioned--including the "last mile" costs. The libraries would require 3600 hours per year of capacity. If the State Library has to make its own "last mile" calculations it should obtain a list of the nodes and measure the distance from each of the libraries to the nearest node. A simple formula for calculating the "last mile" cost from each

library to its nearest node is $.05 per minute for dial-up if in the same LATA and $.25 if in a different LATA. For leased lines the cost would be $10 per mile per month.

8. The State Library should implement an automated library system suitable for its internal automation, the internal automation of other state agency libraries, and as host for ICAN.

The State Library is large enough, and complex enough, to consider the automation of its operations. It also would be a suitable host for the internal automation of other state agencies which may be too small to automate cost effectively. Generally, the cost of a system with fewer than 12 terminals is at least 20 percent higher than systems with a larger number of terminals. The State Library is one of very few State agencies which would require more than 12 terminals for library applications. Finally, the State Library's system could serve as a host for ICAN.

The consultants make the following sub-recommendations with regard to a system for the Iowa State Library:

a. The State Library should automate its operations both to improve direct service to patrons and to establish its role as the key node in an emerging statewide electronic bibliographic network.

While there are significant benefits to automating the internal operations of the State Library, as set forth later in this section; the need to automate is made compelling by the fact that the State Library must continue to play a major role fostering resource sharing among libraries throughout the State. As the major academic and public libraries of Iowa implement automated systems, there is great potential for electronically linking or interfacing the systems to facilitate resource sharing in the form of reciprocal borrowing and interlibrary loan. Even inexperienced library users will be able to

determine what resources are available throughout the State when the systems are linked. The linking will probably occur whether the State Library exercises leadership or not, but the development of the electronic network will probably be much smoother if the state agency mandated to serve libraries plays an active role by promoting standards and consulting services. It can also monitor network activity and provide leadership in the development of network protocols. The State cannot do so--nor can it make its own resources easily available--unless it automates, and its system can function as a node in the network.

The electronic linking or interfacing of systems will become a reality within the next two to three years. If the State Library is to provide leadership in this area, it must act promptly to lay the foundation for its own participation. It should seek to implement a system no later than the first half of 1990 because there will be a great deal of intersystem linking beginning at that time.

Among the benefits which will accrue as the result of automating internal operations are: increased utilization of library materials because they are more easily accessed; the freeing of expensive human resources from labor intensive clerical tasks such as the maintenance of manual card files, repetitive typing and time-consuming file consultation, for redeployment in more direct service to users; a cut back the rate of increase in the unit cost of performing library operations; and closer control over the collection. In the case of the State Library, the introduction of automation will integrate acquisitions with other operations, improve funds accounting, reduce time for registering borrowers and filing of registration cards, eliminate the manual checking of delinquent files and preparation of overdue notices, simplify the processing of reserve requests, permit the electronic inventorying of the collection, and speed the booking of non-print materials.

Despite the fact that automation can significantly improve operations, there is no evidence that automation results in a reduction in library staff in any except the largest libraries. While in large libraries there are several people performing each task, in smaller libraries a single service point typically has one staff member performing several different tasks. What usually occurs when automation is introduced is that staff previously assigned to repetitive tasks such as filing, manual consultation of multiple files, and typing are reallocated to tasks which are more productive and of more direct benefit to library users: readers' advising, collection use analysis for collection development and weeding, shelf- reading, inventorying, etc.

Library automation is costly and the evidence is that the costs are not usually recovered. Although exact cost estimates for an automated system which might support multiple functions cannot be made until the system configuration and the specific vendor have been determined, it is likely that--barring special vendor discounts--a system for the State Library will cost approximately $9,500 per terminal for hardware, software, installation and training. Other one-time expenses--including retrospective conversion, site preparation, basic supply inventory, etc. may increase the cost by as much as 50 percent. Ongoing vendor support is usually at least $1,200 per terminal per year.

While there is no evidence that libraries are recovering all of the money invested in local automation, there is con-siderable evidence that service to patrons is improved, both directly and indirectly. The benefits of automation to patrons include:

o   Online searching of holdings in a machine-readable database
     eliminates many of the limitations inherent in card-based
     files developed over long periods of time and subject to the
     vagaries of changes in cataloging rules or classification
     practices.

o   Increased access to holdings through deeper indexing of the
     bibliographic information associated with an item.
     Catalogs arranged in the traditional sequence, whether in
     the form of cards or fiche, limit the access points to an
     item.   For example, a book by Martin Ross with the title
     Data Transfer in Analog and Digital Telecommunications
     Systems could be found in a card catalog under a limited
     number of access points: last name of the author, first
     word in the title, and subject, assuming the user could
     determine the precise formulation of the subject heading(s)
     under which the item is entered.   In the case cited above,
     two   subject   headings,   "Communications"   and   "Data
     Transmission,"   were   assigned   to   the   item.   A   patron
     searching under terms such as "analog" and "digital" and
     "telecommunications," or "systems" would not retrieve this
     item.   In a machine-readable database mounted on a system
     with   keyword   searching   capabilities,   the   user   could
     retrieve   the   item   noted   using   any   of   the   access   points
     available   in   a   card-based   file   as   well   as   by   any   of   the
     words   in   the   title   or   subject   heading.   In   this   case,
     keyword   access   would   increase   the   number   of   access   points
     by   at   least   100   percent.   An   inquiry   in   an   online   system
     with   the   added   feature   of   proximity   searching   would   allow
     the   user   to   achieve   even   greater   precision   by   permitting
     him   or   her   to   specify   that   selected   words   in   the   search
     must   be   within   a   certain   proximity   to   other   words.   In   the
     example,   the   user   could   specify   that   the   words   "data"   and
     "transfer"   must   be   contiguous,   thus   eliminating   the   need   to

sift through a large and potentially irrelevant number of responses.

A system with Boolean search capabilities allows the user to execute precise searches quite easily. The following example illustrates the level of precision possible with the simple Boolean operators "and," "or," and "not:"

            data transfer
        OR data transmission
       AND digital
        OR analog
       NOT data storage

Additional search qualifiers allow the user to specify that only certain types of materials, in selected languages, published during a stated period should be retrieved:
            ONLY monographs
            ONLY English language
            ONLY published from 1978 forward

The impact of the searching capabilities detailed above on staff and patrons can be measured by checking a few items in the current card catalog. A valuable store of information is hidden in the middle of titles and subject entries.

Numerous studies demonstrate that library users are able to master the basics of searching an online catalog quickly. In addition, the literature reports that users prefer to queue up and wait to search a library's holdings online rather than to use the traditional card catalog. Compelling evidence points to the conclusion that patrons perceive a significant improvement in access to library materials, as well as an increase in the success of search inquiries, when using an online catalog.

o   Greater exploitation of materials through improved
     inventory control. The automation of circulation control
     procedures provides enhanced inventory control through
     rapid follow up of overdues, sophisticated fine tracking
     capabilities, and ready identification and blocking of
     delinquent patrons so that the material will be available
     to others.

     Automated systems offer streamlined reserves (holds)
     procedures, enabling library users to more rapidly obtain
     materials of interest to them. Automated systems also
     provide staff with instant information on the status of a
     particular item indicating whether it is on loan, to whom,
     when it is due to be returned to the library, and whether
     other library patrons are waiting to borrow the item.

     Such a system can also be used to undertake inventories of
     library holdings, a task often neglected in libraries with
     manual systems because it is so labor intensive and costly.
     Patrons are better served because lost materials are
     replaced or the records removed from the catalog.

     An automated circulation control system also has the
     ability to output detailed usage statistics. This
     capability provides a library with reliable data on which
     to base future collection development and weeding
     decisions. Labor savings can be expected as staff are
     freed from repetitive tasks such as statistics compilation,
     filing, and the look-up and typing of overdue and fine
     notices. This function not only requires several hours a
     week, but is also one which constantly falls behind. Such
     resources can be deployed more effectively in more direct
     service to users.

o   Observable streamlining and increased efficiency in acquisitions procedures. In addition to providing collection use data far superior to that available through manual methods--data which can be applied to guide collection development expenditures to ensure that acquisitions funds result in the greatest benefit for library users--an automated library system with acquisitions and fund accounting capabilities can be expected to improve the management of the library materials budget while decreasing the burden of repetitive clerical tasks such as filing and typing.

Illustrative of the capabilities provided by the automation of acquisitions is the ability to generate automatically claim notices for items on order, but not received within a period of time specified by the library. Theoretically, such claims could be issued under a manual system. However, few libraries undertake systematic claiming due to inadequate staff resources or inability to identify readily items which are overdue.

An automated acquisitions module also allows a library to control more effectively the unintended ordering of duplicate copies. Tracking and returning duplicates is a labor-intensive and costly activity. In addition, automated systems supply important data on order fulfillment, average turnaround time, cost increases, and discounts for each vendor used by the library.

The fund accounting capabilities of automated systems provide a library with accurate information about encumbrances and expenditures. Current fund balances allow a library to monitor funds being expended too quickly as well as to identify areas in which acquisitions have fallen below a planned level.

o   Automation of serials control provides the same kind of
        automated order writing, claiming, and receiving support as
        for monographs.   In addition, a serials control module
        typically supports routing and binding.

o   The automation of media booking means that non-print
        materials will be as easily accessed as print materials,
        the booking will be as fast as the check-out of print
        material, and the staff will be able to reallocate some of
        its time away from record keeping to collection development
        and patron service.

o   The installation of an automated library system not only
        improves access to the resources of the library being
        automated, it also offers that library the opportunity to
        access the automated systems of other libraries.

In summary, while the State Library has some problems with
acquisitions, circulation, and media booking; the cost of
automation is such that addressing these problems in isolation
would result in greater expense than the consultants deem
justified for all applications except media booking--for which a
reasonably priced PC-based package is available. The consultants
recommend that the automation decision be made on the broader
grounds of improved service to patrons.

        b.   The State Library should implement an integrated
turnkey system.

        The present and future needs of the State Library appear to
be best met with an integrated, multi-function system which
supports the automation of acquisitions, serials control,
circulation, media booking, and patron access catalog.   The
system should also support interlibrary loan. Patrons and other
libraries would have access to all of the State Library's

bibliographic files, thus obtaining availability as well as holdings information. Acquisitions, circulation, and media booking problems would be addressed as part of the broader patron service picture. Even the inexperienced user would be able to move from one function to another with one or two keystrokes.

The consultants recommend a turnkey library system--one in which a single vendor supplies all hardware, software, installation, training and ongoing hardware/software maintenance. A turnkey system provides a less expensive method of automating than the separate purchase of a software package and appropriate hardware, and it does not require the hiring of specialized staff. Turnkey vendors typically discount hardware 10 to 20 percent, depending on the size of a contract and the importance of an account to them. Computer manufacturers usually extend a maximum discount of 15 percent. However, software only packages--even those purchased from turnkey vendors--typically cost 30 percent more than those bundled with hardware in a turnkey system. Software installation charges are included in turnkey systems, but are extra when software is purchased separate from hardware. The usual result is that a turnkey system is less expensive to purchase and install.

While only two percent of the libraries which have installed turnkey systems have found it necessary to retain local data processing personnel, almost all software packages require some professional data processing personnel.

An institution can expect at least three bidders to respond to a Request for Proposal (RFP), any one of which should be able to meet a substantial percentage of the requirements. None will meet the requirements 100 percent, of course, because each offers a standardized system that differs somewhat from any other. Any one of the vendors should be able to make delivery within 90

days. The system should be inspected at another library where it has been installed before a commitment is made.

While most vendors now offer acquisitions, serials control, circulation, and patron access catalog modules; media booking and interlibrary loan are not yet widely available. These modules are essential to the State Library, if it is to be a major node in a statewide bibliographic network. If that is made clear in the RFP, most vendors will commit to delivering media booking and interlibrary loan by a specified future date, with penalties for late delivery. Media booking is not in great demand so there is little incentive for the vendor to expedite its development, except to avoid a breach of contract. Should there be a serious delay, there is an excellent PC-based product which could be interfaced with the multi-function system. Interlibrary loan is a high priority for almost all vendors.

Almost all vendors currently offer the capability of remote dial-up from other libraries or from home/office PCs. The terminals of most systems may be used for remote searching of the databases offered by BRS, Dialog, and others--usually through a gateway in the CPU.

The consultants advise against purchasing software packages for use on existing or planned equipment in the hope of saving money. First, there are seldom sufficient available resources to accommodate the addition of a library applications package to an existing machine being used for other applications without some upgrades.   While requirements vary, the typical library applications software package requires from 4 to 8 MB of primary memory on a mini. The files require at least 5,000 characters of disk storage for each title in the collection. An upgrade usually is 85 percent or more of the hardware cost for an entirely new system.

Second, when the hardware is chosen first there may be too great a limitation placed on software options. The best software packages for library applications use the UNIX and Pick operating systems, neither common in government applications. Most of the major vendors will not "unbundle" their software and sell it without hardware.

Third, when software is purchased from a software only vendor, there will probably be a need to engage in local programming and software maintenance because none of the available software packages is as fully table driven as the turnkey products. Therefore, it is necessary to do considerable adaptation, rather than selecting from options in the tables. This is a costly process at best, and is made more difficult by the fact that documentation is often inadequate.

Fourth, no supplier of a software package will assume responsibility for system performance after hardware and software are brought together by the user. A library can be caught in finger-pointing between the hardware and software vendors.

Fifth, the suppliers of software packages usually don't remain in the market for as many as five years and rarely get more than a handful of customers. Only Northwestern University Library--which has been selling its package for large IBM mainframes (4300 and 3080 series) for five years and has more than 90 installations--has demonstrated staying power. Recently its sales have increased to a rate of two per month, a figure comparable to the sales of the turnkey vendors. In contrast, the LIAS package has not been successful in the market place despite a $500,000 marketing effort in 1986-87 and is no longer being actively marketed; nor has DOBIS succeeded even with the marketing resources of IBM behind it. INLEX and VTLS, vendors of

software for HP 3000 systems have been in the market for four or more years each, but have not achieved consistent profitability.

Sixth, procurement of a software package rarely allows a library to assign a firm price to the implementation of each function or a firm date for system availability. In adopting a software package, the library is charged with the responsibility for coordinating and managing the hardware, software, and human resources necessary to complete system implementation successfully. Because of the large number of variables the library must control locally, it is difficult to pinpoint liabilities or demand remedies in the case of failure to control cost or meet a deadline.

Seventh, developers of software packages do not commonly support a full-time training staff. In the early stages of implementation, libraries rely heavily upon the system vendor for training. In the absence of adequate training, libraries may find themselves learning by trial-and-error--a time-consuming and costly process. Also, system and user documentation for software packages often does not allow for systematic development of local training programs or trouble-shooting routines.

Eighth, libraries which purchase software packages forego the potential leverage available to a well-organized user group. Most major turnkey vendors provide a forum in which system users can suggest enhancements, lobby for software upgrades, and benefit from the experience of other users.

Ninth, beyond the financial risk associated with implementing a software package, libraries must consider the possibility that the installation will not be successful. Because software package vendors bear no responsibility for the successful installation of the software on a library's hardware,

the staff of the institution must assume complete responsibility for a failed implementation.

In summary, the same factors which have led 85 percent of all libraries to purchase turnkey systems, lead to the conclusion that the State Library should in this case follow the turnkey approach.

The technical limitations which impeded early library automation projects have been substantially overcome, and the benefits of a well-managed automation program have been clearly demonstrated. All of the major turnkey library automated systems now incorporate the two features essential to cost-effective library automation: they are multi-function-- supporting the automation of a range of library operations-- and integrated--all functions utilize a common database. These features ensure that a library can make maximum utilization of the most expensive elements of automation: the database and the system hardware and software.

By waiting until this time to begin their major automation effort, libraries not already automated have the advantage of starting with an integrated, multi-function system.

c. <u>The system should be highly expandable so that it can accommodate the addition of other State agencies</u>.

The system purchased should be one which is highly expandable. The initial system should have sufficient capacity to accommodate a 50 percent growth in database size, number of terminals, and activity level without upgrade. It should be field upgradable by at least 100 percent by merely adding port boards and processor boards. Vendors should be required to spell out the cost of the upgrades so that the State Library will be able to calculate the effect of adding State agencies which express an interest in sharing the system.

d.   The State Library should continue to adhere to all applicable national and international standards for database and system development.

Standards are extremely important in automated library systems. The objective of creating an automated library system which can access and be accessed by external systems cannot be efficiently achieved unless libraries adopt a uniform set of standards for recording bibliographic data. Embracing those national standards currently developed represents an investment in the long term viability of the most expensive component of an automated library system, the database. The consultants are well aware of the State Library's vigorous support of standards, and addresses the subject of standards here primarily for the benefit of readers who are possibly less familiar with the State Library and library automation.

Two levels of standards are required: the first to govern rules for transcribing data; the second, to prescribe the way in which this data will be encoded in machine-readable form. Therefore, the State Library should continue to conform to both the standards of the Anglo-American Cataloging Rules, Second Edition and the MARC II Communications Formats for database development. In the past, the MARC formats have been limited to bibliographic information and authority records, but a parallel format for holdings information has recently been introduced. The State Library should subscribe to all types of MARC formats.

As all of the candidate systems take in, retain, and output records in formats which comply to standards, the adoption of these standards by the State Library will relieve it of the need to pay for the reformatting of records obtained from a bibliographic utility, exchanged with other libraries, or submitted to a bibliographic service for processing.

Most important of all, adherence to standards will make it possible for the State Library to move its database from the initial automated library system to a later generation system without costly rebuilding of the database.

The State Library should require that the system vendor support all of the Open System Interconnection Reference Model standards which have been adopted--both general and library application specific. Among the most important of these are the general X.25 protocols for networking and the recently introduced NISO protocol for bibliographic and authority record transfer. This will facilitate the online computer-to-computer exchange of information with other systems in future years. The OSI interfaces should be available in late 1989 or 1990.

The utility and sharing of data files will be further facilitated if the State Library also adopts minimum standards for the level of detail in its bibliographic records. The ideal is a commitment to the use of full-length records. As it may not be practical to achieve this ideal in all situations-- particularly for the cataloging of local materials, some non-book items, and materials of an ephemeral nature--the State Library should commit formally to an undertaking that all records will contain a specified minimum number of elements.

e. <u>The State Library should seek to complete retrospective conversion of its data to machine-readable form.</u>

Operating an automated system with a partial database is feasible, but it forces a library to maintain two catalogs and two circulation systems. That not only adds to operating costs, but confuses patrons. Also, the potential of resource sharing cannot be realized unless all of a library's holdings are online.

The State Library has only 35 percent of its records in machine-readable form. This means that over 96,000 records

remain to be converted. The consultants recommend that the State Library contract with OCLC to do the work because it could not do the work itself at less cost in-house. OCLC currently charges an average of $1.20 per bibliographic record. The total cost for the conversion should be budgeted at $116,000.

f.   Installation of the multi-function system should be phased over a period of fifteen to eighteen months.

Multi-function systems are complex and should be implemented in phases so that staff can become proficient in the use of the system before it becomes fully operational. An online database is fundamental to the automation of other functions, especially circulation, patron access catalog, and serials control. The State Library should load the database and work with the system's local cataloging and database editing capabilities for at least three months before implementing any of the aforementioned modules. The database will be available for staff searching during this three month period.

The State Library should determine which functions it wishes to automate and in what order. The consultants recommend staff searching, circulation, acquisitions, serials control, patron access catalog, media booking, interlibrary loan in that order; with an interval between functions of at least three months. The patron access catalog should come after staff searching, circulation, acquisitions, and serials control because it is more complex than the others and requires information from the other modules in order to provide availability as well as holdings information.

Media booking and interlibrary loan should be implemented last to give vendors time to complete the development of these modules. Should the vendor selected offer media booking in general release by the time the State Library has implemented

circulation, it might be moved up in the in place of acquisitions.

The interlibrary loan module requires special attention because it should be able to serve not only as a means for tracking the borrowing and lending activity of the State Library, but also as a management tool for administering the statewide network. Most vendors envision this modules as one which provides for the saving of an unsuccessful search against the local database, repeating it against a remote system, requesting the item, checking it in and passing control of it to the circulation module, recording its return from the patron and shipment back to the lending library, and keeping statistics on the transaction. There would be similar steps for lending. In the case of photocopies, there would be control of copyright clearance. In these respects the needs of the State Library would be the same as other libraries. In addition, it would need to be able to track interlibrary loans it handled for other libraries, and the compilation of statistics drawn from several systems.

In addition to maximizing the probability of a smooth introduction for the system, the phased approach also offers an opportunity to defer some of the expenditure associated with initial implementation. One area for such savings lies in delaying delivery of a proportion of the terminals and CPU capacity until the functions which require them become operational. Similarly, if the scheduling of payments over more than one year were essential, it would be possible to have the software bid as a single package, but to commit to payment only as each function was implemented and the software actually installed. It is also possible to spread the four major payments--signing, delivery, installation, and acceptance--over two fiscal years by signing the contract in the second half of

the first fiscal and implementing the system in the second
fiscal.

g.   The system should support Boolean and key-word
searching.

It should be possible for users of the automated library
system to use Boolean AND operators to link terms or phrases.
This will make it possible to reduce the number of citations
retrieved to those most relevant to the person's requirements.
While Boolean OR and NOT operators are also useful, there is
considerable research which shows that they are little used by
patrons. Of much greater value is key-word searching in subject
headings and titles. In some libraries nearly half of all
searching is key-word. It is particularly useful in rapidly
changing fields.

Boolean and key-word searching increases the CPU and disk
storage requirements, typically raising the cost of a system
by 10 percent or more. Therefore, it is important to
communicate the requirement to vendors, and to limit the use of
Boolean so that the available computer resources will not be
consumed by inefficient searchers. The most effective option
for limiting Boolean use is to designate specific patron access
catalog terminals for this type of searching. Some libraries
require that patrons have a brief overview of Boolean searching
procedures before they are given access to terminals with this
capability.

h. Security should be a design consideration.

The database will be a major investment, and reliance on it
as the means of identifying holdings and availability of
materials makes it imperative that its integrity be secured.
The consultants recommend that this be done by requiring password
control for all functions except patron access catalog queries.
They also recommend that database maintenance activity be

restricted to designated terminals so that someone with access to a password will not be able to modify the database from a terminal in a public area. The State Library should further protect its database by requiring that all transactions written to disk be logged on a streaming tape drive. Access to the computer room should be restricted, with distribution of the combination limited to those who are designated system operators.

The State Library should back-up the patron access catalog with the Iowa Locator. At least one workstation with CD-ROM drive should be placed in a public area, and some workstations in Reference and Technical Services should be similarly configured.

i.   The RFP should require that the system be capable of interfacing with other systems.

The State Library's system should be linked with the OCLC cataloging support system to facilitate the online transfer of machine-readable cataloging records, and with the systems of other libraries in the area to facilitate resource sharing. The initial linkages will have to be a terminal-to-computer interfaces because computer-to-computer interfaces must await the completion of several linking standards.

Terminal-to-computer interfaces are not a handicap with regard to the OCLC linkage because trained searchers are transferring records one at a time during acquisitions or cataloging. There is seldom a need to retrieve and download multiple screens of records. Even if a record being retrieved is already in the local library system, it can be "overlaid" on the prior record, with all copy specific information retained in the new record thus created.

Terminal-to-computer interfaces are less than ideal when linking local library systems because it is necessary for the

person at the terminal to know the searching requirements of both systems. While the initial access may be facilitated by having a "gateway" in the CPU through which any terminal on the system can go out to another system, the gateway is merely a physical channel. It does not translate the search from the protocols of one system to those of the other. A search of this type often involves the retrieval of multiple records, but a file transfer can be accomplished only by downloading that which appears on the screen, one screen at a time. Tape transfer would be more effective for transferring large amounts of information, but it is too slow. Terminals on other systems would be able to access the State Library's system in the same way.

The goal of the State Library should be to have computer-to-computer interfaces between its system and those of other libraries, but it will be a minimum of two years before all of the necessary linking standards will be completed and the vendors have written the necessary software to link heterogeneous or incompatible systems.

Specifically, the State Library should require that the vendors submitting proposals support the Open System Interconnection (OSI) Reference Model standards to the extent that they have been developed. To date the most important standards which both hardware and software must support are the X.25 packet switching standards. These address the lower layers of the OSI, the physical through network layers. The most important of the library specific standards are the MARC bibliographic and holdings formats, the NISO protocol for bibliographic and authority record transfer, and the draft standard for interlibrary loan. The standard for the transfer of searches among systems is now being balloted. The patron record standard is in committee.

j.   The system selected should be capable of supporting
PC-based workstations.

The terminals used on a local automated library system can
be either ASCII-type terminals with neither intelligence nor
storage (dumb terminals), or personal computers such as the IBM
PC.   The consultants recommend that PCs be used for selected
applications because they can perform a much wider range of work
than terminals.

A PC at a circulation point can provide back-up when the
host system is down. Charges and discharges can be collected and
retained in the storage of the PC for transmission to the host
computer when it is up again. Usually only one terminal at each
circulation point is so configured.

In a reference application, a PC can be used to download
search results for editing and printing. A PC not only offers
the capability to download, store, and edit search results, but
it can be made more user cordial by mounting specialized search
assistance programs.   It can also be used to search databases
external to those offered on the local system. For example, an
IBM PC may now be used to search NEXIS because a software package
has been developed to emulate the characteristics of the
dedicated terminals which were previously required to access this
system.   The bibliographic utilities are developing software
packages to facilitate use of their various subsystems.

At any point the use of a PC will permit moving back and
forth between the Locator and the local database.

The State Library should also offer workstation support to
patrons.   At least 20 percent of the online catalog
terminals--but not fewer than one--should be based on micros.
The cost per workstation will be approximately $1,250 more than
for an ASCII-type terminal.

An existing PC can be adapted to serve as a terminal on the automated library system at a cost of $100 to $150 per PC for terminal emulation software.

Workstation access can also be offered to users who access the system remotely. Those seeking to dial-up into the system from their homes or offices will require a PC, a modem, and a software package that allows the PC to emulate an ASCII-type terminal. Once the equipment is modified, dial access is provided by setting aside dial-up ports on the central computer and advising the potential users of: the baud rate--usually 1200 baud; the sign on/off procedures; the search strategies for accessing information; and the procedures for leaving messages.

k. Dial-up access should be provided to the system from outside the State Library.

The provision of access to the State Library's resources from homes, offices, and other libraries--including those in State agencies which want access, but do not want to share the system--is an important element in strengthening the State Library's services. At least five dial-in ports should be provided, with provision to double the number at little cost when necessary.

In publicizing this capability it is important to communicate realistic expectations with regard to system interfaces and unmediated user searching until OSI-based computer-to-computer interfaces are available. Otherwise enthusiastic system users can be discouraged by a perceived lack of sophistication or unanticipated obstacles in remote access. The State Library's staff should ensure the reliability of

dial-up ports and should regularly examine transaction logs to identify patterns of unsuccessful access attempts.

Remote access can be provided by setting aside at dial-up ports on the system and advising prospective users of: the baud rate for communication--usually 1200 baud; the sign on/off procedures; the search strategies for accessing information; and the procedures for leaving messages. The system's vendor can assist the State Library in preparing the material.

Those seeking dial access to the system will require either an ASCII-type terminal and a modem or a PC, modem, and software package that adapts the PC to emulate an ASCII-type terminal. A terminal costs approximately $550 to $700 with the modem. Adapting a micro costs $350 to $500.

The experience of more than 80 libraries surveyed by the Association of Research Libraries is that remote access is not heavily used. The average number of ports in use is just over three. Only the Guelph University Library, which has actively promoted remote access by the users of 2,200 terminals and PCs on its campus, has stimulated a high enough level of activity to require setting aside as many as six ports.

1.   The State Library should require that the system be capable of handling the ICAN software.
The State Library should make support of ICAN a component of its system so that it can save approximately $20,000 a year in that activity. That amount would substantially offset the hardware and software maintenance costs for the system.

m.   Vendor viability should be a major criterion in the selection of a system.
More than two dozen vendors offer turnkey systems or software packages for library applications, but many of the

companies offer software for only a few functions and a majority are not yet financially viable. The vendors which the consultants deem viable are capable of delivering software for acquisitions, serials control, circulation, and patron access catalog. They have a minimum of $3 million a year in sales, have installed at least 20 systems, sold at least 10 systems in the past year, and have at least six full-time programmers. The consultants have chosen these criteria because it takes at least a year to develop each function, a minimum of $3 million in sales is necessary for a company to support both significant development and marketing efforts, a customer base of 20 is sufficient to support ongoing software maintenance even if the vendor experiences a downturn in system sales, and 10 sales a year generate enough income to underwrite a basic software enhancement program.

Only six turnkey vendors meet these criteria and can be considered major vendors: CLSI, DRA, Dynix, Geac, Innovative Interfaces, and OCLC. One software only vendor meets these criteria: NOTIS.

n.   The available options should be evaluated on the basis of comparative five-year cost/benefit.

While the choice of the turnkey vendor to supply the system for the State Library will not be determined by cost alone, it is essential that the State Library determine the true costs of the available options. The consultants advise that cost evaluations be made on the basis of total expected costs over a five year period--the period that is generally understood to represent the term during which no major additional hardware or software expenses should be incurred through obsolescence.

Experience shows that the initial price quoted for a turnkey system usually constitutes less than one-half of the true cost of the system over a five year span. If a library

chooses to lease a system rather than purchase one, the five year costs are likely to be triple the initial price.

In calculating the five year costs of the systems, the consultants advise the use of a checklist taking into account the price of the vendor's system, one-time costs such as site preparation and record conversion, and the ongoing expenses of telecommunications and supplies. The State Library needs to be careful in comparing specific cost elements such as the pricing of future software modules, as different vendors present such charges in different ways. Attention should also be paid to ensuring that the comparisons are made on the basis of both adequately and similarly sized systems--an attractive quote from any particular vendor may appear less alluring after consideration of system capacities, projected hardware life, and the elapsed time before a memory upgrade is required.

Such an approach to cost comparison will be valid only if the State Library adheres to its original selections of intended automated functions throughout the five year period. The automation of additional functions and any other unforeseen developments such as an increase in the number of libraries using a system will alter the cost structure.

While a reliable estimate cannot be made until specifications have been developed, the consultants recommend that a minimum of $200,000 be budgeted for a system. That would provide for up to 15 terminals in the State Library, five dial-in ports, and a spare capacity of 50 percent. The proposed budget includes hardware, software, installation, training, labels, and site preparation. It does not include retrospective conversion. It will cost at least $20,000 per year for hardware and software maintenance.

o.   <u>The State Library should designate a quarter-time
project coordinator for the automation project</u>.

The amount of time expended on selecting and implementing a
system and setting up in-house operational procedures requires
the designation of a project manager. He or she should report to
a top level administrator.

The person selected as project manager need not be
knowledgeable about electronic data processing, but should
understand the functions of the State Library and have good
interpersonal skills. Over two-third of all libraries which have
implemented a turnkey system have retained a junior or
intermediate level professional librarian for this role.

The project manager will have to reconcile the State
Library's needs with the capabilities of the vendor, coordinate
standards development, implement new systems features, oversee
vendor compliance with the contract, etc.

The project manager could be appointed as early as the time
the RFP is required, but it is essential that the position be
filled no later than the selection of a vendor because
implementation requires close ongoing attention. The person
will need to spend approximately 10 hours a week on the
implementation, with some peak installation and training periods
requiring more time.

After system installation, the project manager should work
near the central site hardware in order to be able to work with
the vendor's technical support personnel in performing
preventive and remedial maintenance. Although initially
committed more heavily, the project manager probably need only
be assigned 10 hours a week once the system is operational.

p. The State Library should contact other State agencies and invite them to share the system, with costs allocated on a formula based on usage.

The December 1987 report entitled "Improvement of Library Service for State Government" expressed concern about the lack of inventory control and variations in the availability of library service to State employees. A shared automated library system would address both concerns. The State Library should take the initiative with other agencies and offer to function as host for a multi-agency automated library system. However, it should not delay its own plans. If other agencies don't respond by a date set by the State Library, the procurement should be made--but with the option of expanding the system as needed to accommodate agencies which may act later.

10. The State Library should continue to promote networking among the State's libraries by advocating adherence to all applicable standards.

The State Library has done an excellent job of gaining compliance with the MARC standard for bibliographic records. Almost all libraries which have implemented multi-function automated systems have databases which conform to MARC and the majority of records being contributed to the Locator do so. This will not only facilitate future linking of systems, but also will make it possible for the libraries to install future generations of systems without costs reformatting of records.

However, there are a number of other applicable standards which are essential to effective networking among libraries. As important as the MARC format for bibliographic records are the NISO standards for holdings, both serials and non-serials. There is little advantage to facilitating the identification of a title

without also providing easy access to holdings statements. If linked systems record holdings differently, terminal operators will have to have special training to ascertain holdings or systems other than their own.

The transfer of a record between two systems is also supported by standards, most of them part of a group of related standards known as the Open System Interconnection Reference Model which were briefly discussed in Recommendation 5.

The consultants recommend that the State Library promote awareness of these standards by publishing and distributing a description of them, and sponsoring an presentation at a state-wide meeting such as the ILA. Almost any library consultant on the register maintained by the Library and Information Technology Association (LITA) should be able to make such a presentation for an fee of $800, plus expenses.

11. <u>The State Library should expand its consulting program in the area of automation</u>.

A recurring theme in the focus group meetings and survey responses is the small size of the State Library staff committed to networking: two people. Librarians throughout the State would like more help, but are reluctant to ask for it because they know the people on whom they might call are extremely busy. The smaller libraries of the State are most in need of on-site consulting because the small size of their staffs makes it almost impossible for anyone to leave to attend a workshop or meeting. The State Library should place a high priority on increasing the staff and making more regular consulting visits to libraries.

12. <u>The State Library should not underwrite the development of additional library applications software</u>.

There appears to be little support for the development of additional library applications software beyond the Locator and

ICAN. In fact, there is considerable opposition to the idea of using State funds to develop a PC-based circulation module. The view is that circulation is a local function which should be a matter of local choice. There are a number of packages on the market for PCs and small multi-user systems. The strong message is that the State Library should focus on resource sharing. The State Library may wish to consider developing an interface between the Locator and one or more popular PC-based circulation systems at a later date.

The State Library should continue to promote adherance to the MARC format. Libraries which purchase systems that cannot take in, retain, and output MARC-formatted records not only cannot participate fully in shared database development, but they put themselves in the position of not being able to move their database economically from their current system to a later generation system. There are now several PC-based systems which support the MARC format, and virtually all multi-user systems do so.

13. <u>The State Library should assign the issue of reimbursement to a task force</u>.

There are strong differences of opinion about reimbursing major lenders. Academic librarians are more supportive of the idea because their clienteles are more limited than those of public libraries, and broadening the scope of service beyond the academic community involves tapping resources specifically appropriated for service to the institution's primary clientele. The consultants' view is that reimbursement is appropriate, but it should be equitable. At the present time some of the Regionals reimburse, while others do not. The most substantial reimbursement consists of a service contract with a major public library, such as Northeastern's agreement with Waterloo Public or Southwest's agreement with Council Bluffs Public. The State Library reimburses the three major universities by making

payments of $30,800 per year to them, and the colleges by paying them $3.04 per ICAN loan, not to exceed a total of $5,000 per year for all colleges.

The consultants recommend that the task force be charged to develop a rational, consistent, and equitable reimbursement policy which would apply whenever State or Federal funds are used, directly or indirectly.

The task force should be asked to consider a coupon system similar to that which works successfully in the Regional Medical Library Program.

The consultants also recommend that any reimbursement mechanism have built into it an incentive for updating records in the Iowa database, both on OCLC and the Locator. If that is not done, the value of the database will diminish with time because it is leading requestors to locations which no longer hold the material. If a coupon mechanism is used, the State Library might give one coupon for each ten records holdings deleted from the database.

14. <u>The State Library should coordinate a telefacsimile project.</u>

There is widespread interest in telefacsimile technology. The interest appears to be spurred by the dramatic reduction in equipment prices over the past year. A high-quality Group III telefacsimile machine can now be purchased for under $1,800. The features available within that price include choice of resolution (standard or fine), automatic step-down (adjustment of speed due to phone line conditions), automatic dialing, automatic answering, and automatic paper cut-off. The machines cannot copy directly from books and journals because the original has to pass by a scanner. This is acceptable for low volume applications, those in which fewer than 100 pages a month are

sent. Machines which can copy directly from books cost $3,500 or more.

A large number of Iowa libraries appear to be prepared to buy telefacsimile equipment, provided that they can be assured that the number of libraries which also install the equipment will be great enough to assure them a cost effective level of machine use. The State Library should take a leadership role by offering to sign a master contract with a supplier at an attractive discount. All the institutions which respond by the deadline set by the State Library would be eligible for the special price. The names of all of the libraries which responded would be made available so that each library could determine whether there were enough libraries of interest to it purchasing equipment for them to go through with the commitment. No special network arrangements are necessary, as any machine can talk to any other on a direct point-to-point basis.

The State Library should sponsor a workshop on telefacsimile before polling libraries about their interest. This will help libraries to decide whether they have enough activity to use the technology cost effectively, what equipment features are most important for them, and how to integrate the technology into their operations. These are important considerations because the cost of transmitting a page via fax can range from $.25 to more than $1.00 depending on the suitability of the equipment choice and the proper management of it.

15. <u>The State Library should consider installing an answering machine at the reference back-up center at the University of Iowa</u>.
The Regional Libraries should continue to be the major reference referral agencies. If the State Library continues to contract with the University of Iowa's School of Library and Information Science for back-up, it should consider the

installation of an answering machine to eliminate unsuccessful calling attempts.

16. The State Library should coordinate surface delivery.

Delivery is of concern in several areas of the State. The consultants' perspective is that it is even more important Statewide. While the satisfaction time appears to be a week when materials are located within a region, the time increases to three weeks or more when material is located in another part of the State. This appears to be due to reliance on third and fourth class mail. The consultants recommend that the State Library work with the Regional Libraries and the AEAs to develop agreements to use the existing AEA delivery services in a region for service within that region. Anecdotal evidence suggests that the cost per item delivered by the AEAs is well under $1.00 per item--lower than either third or fourth class rates for mailing monographs and documents.

If the State Library is successful in promoting delivery service within the regions, it should pursue the establishment of inter-regional delivery either on its own or in connection with the AEAs. Purolator and United Parcel Service are well equipped for this role. Each of the two companies has been the operator of Pennsylvania's statewide service.

Alternately, if the Regional Libraries are not interested delivery service within their regions, the State Library should consider contracting with Purolator or United Parcel Service for a statewide delivery program open to all interested libraries which handle at least 200 interlibrary loans a year. Almost one-third of the libraries in Pennsylvania participate in a State Library sponsored delivery program. They pay less than $1.00 per item for three to five deliveries a week. While the Pennsylvania State Library underwrites 30 percent of the cost, the program should be attractive to participants even without a subsidy.

APPENDIX A
DISCUSSIONS WITH BLUE BEAR
REGARDING IOWA STATE LIBRARY SERVICES

1. Which services does Blue Bear undertake in-house, and which does it contract to other vendors (i.e., tape processing, CD-ROM mastering, etc.)?

Everything except mastering and replication of CD-ROMs. Mastering and replication done by Discovery Systems of Columbus, Ohio.

2. What computer equipment does Blue Bear have in-house, and at what point may an upgrade which may affect Iowa libraries be required?

Two Novell networks, each with two 386 servers. Configurations include a total of 1.5GB of hard disk storage (back-up on an 800MB WORM drive) and one open reel 800/1600bpi tape drive. WORMs are sent to the contractor for CD-ROM mastering. Would expand as necessary without expecting changes in contract or payment schedule.

3. Under what circumstances are records submitted on tape not loaded into the database (non-MARC, essential field missing, etc.)?

The only limitation has been the specified scope of the Locator. At one time was only English language monographs published in the U.S. Subsequently became all monographs. Locator III C includes serials. Remaining out-of-scope are maps, A-Vs (including sound recordings), and software. Libraries which submit A-V records in other than the MARC format will have to submit at least a title field, publisher field, and year. A third CD-ROM is likely if all formats are loaded. [A condition

- 1 -

for loading is that holding library is willing to lend--but can mask holdings which are loaded and not available].

Blue Bear recently loaded a total of 2.7 million records, of which only 10 percent were new and the rest were records which were previously not loaded, primarily because they were out-of-scope. Actually a total of 400,000 new titles for the database. Estimate a total of 5.5 million raw bibliographic records now. There are actually two databases: bibliographic and holdings. A unique number links them.

Have no difficulty loading OCLC tapes. Write programs as needed for others. Have done Bibliofile records. Will take any machine-readable format. Have taken holdings information on paper. Only serious technical problem ever incurred involved output from a CLSI system.

4. Can ISBN and ISSN be used for matching in addition to LCCN?
    Technically yes, but not doing so at present because believe that these numbers rarely present when the LCCN is absent.

5. What mechanism does Blue Bear recommend for removing holdings records for withdrawn items from the database, and what would be the cost?
    There is a memo which spells this out. Will take on tape or as eye-readable. Need only the LCCN and the holdings code.
Also can accept ISBN/ISSN or an author/title/date combination. Know that libraries not maintaining OCLC records because found only 20,000 deletions in 195 OCLC tapes.

6. What would be the implications of adding non-bibliographic records to the database (for example, information and referral)?
    No problem. The format of the records would depend on the type of retrieval.

7.   What can be done to make the Locator and ICAN more user cordial (formatted screens, menus, novice and expert modes, etc)?

The screens are very flexible because they are separate from the database.   The issue is whether the libraries can spell out their requirements.   Willing to do more training at a cost of $300 per day, plus expenses for two trainers.   Suggest State Library personnel do basic training and be involved in advanced training.

8.   What would be the cost implications of adding local call numbers to the records?

Technically no problem, but considerable maintenance work for the libraries.   Also may mean adding another CD-ROM because of the large amount of storage required to add call numbers to all of the holdings records.   Why not use the Dewey number in the bibliographic record since most libraries don't change them?

9.   Could keyword searching be modified to search the entire record, identify the number of matches, and allow qualification of the search?

It probably would be slower.   It would require more disk storage on the PCs in the libraries--only half of which have hard disks now.   Do not think truncation a problem because did some analysis before selecting 40 characters for author and 32(?) for title.   Work on SQL planned to be completed by III B may resolve this problem.

10.   What will be the cost of each 10% growth in Iowa Locator's database size (bibliographic records and locations) and each 10% increase in ICAN activity (quote at 10% intervals for 10 to 100%)?

The only implications are an additional CD-ROM as the Locator grows, the extra copies of the Locator as the number of participants grows (now 80 copies--although only 60 partici-

pating libraries), and the added telecommunications cost for more libraries using ICAN (now 22).

11. What would the annual cost of a COM-fiche edition of Iowa Locator be, assuming present database size and 100 copies produced quarterly (assuming continued CD-ROM publication)?

Do no fiche work at all. Won't quote. The data would be easy to extract from the CD-ROM using the ROM extract program.

12. What would the annual cost of a fiche edition be if it were limited to the 1 million most widely held titles?

Do no fiche work at all. Won't quote.

13. If Iowa were to wish to transfer the Locator database to another bibliographic service, would Blue Bear be able to supply a single merged file in the MARC format, and at what cost?

Records available on magnetic tape. They are MARC-tagged. May want to consider inexpensive approach of putting Bibliofile and Locator on one system and matching and extracting full-MARC records from Bibliofile.

14. Do the CD-ROM disks and software conform to all relevant CD-ROM and interfacing standards (please detail any exceptions)?

Conform to High Sierra. Are voting members of NISO and support standards as published. Use a standard Hitachi CD-ROM drive.

15. Are the PC software packages for the Locator and ICAN off-the-shelf, modified off-the-shelf, or proprietary?

The DBMS is DB Vista and the screen control is Windows for C. The rest is written in Microsoft C. ICAN uses Reflex and In Touch at the user end.

16. What would be the cost of adding fax capability to ICAN—both a fax board and a scanner?

Approximately $800-900 per library for Datacopy scanners
with boards--$1,000 at the very most. Would only need for major
lenders. The PCs all have graphics boards and would require no
modification. Some 60% of ICAN traffic is serials so fax could
be useful. [The State Library and public libraries are no longer
charging for photocopies as of August, 1988]. The Union List is
still small--fewer than 10,000 titles. Will load the Union List
in Locator III C.

17. What are the pros and cons of interfacing an existing PC-
based circulation software package to the Locator and ICAN
instead of writing a new package?

No problem interfacing if in C.

18. Is Blue Bear willing to include an escalator clause in
future contracts limiting price increases to 5 percent per year?

Yes, if the contract is for two years or more.

Prepared by Richard W. Boss
from notes of 13 October, 1988 meeting
revised 25 October, 1988

IOWA FOCUS GROUP OUTLINE

1. Our role as the consultants.

2. Purpose of the survey.

3. Purpose of this meeting.

4. How many of you are in public libraries?

    Academic __   School __   Special __   Institutional __

5. How may of you handle fewer than 1,000 interlibrary loans a year? ___

    Fewer than 500 __   Fewer than 100 __

6. How many of you have a PC with modem available for interlibrary loan use? _____

7. How many of you are now using the Iowa Locator on CD-ROM? __

8. Is there any advantage to distributing the union catalog on CD-ROM instead of fiche?

9. What is your estimate average of the "satisfaction time" (the time for patrons request to address availability)?

10. Could the satisfaction time be reduced if lenders were reimbursed by the State Library?

11. Could the satisfaction time be reduced if the State Library were to sponsor a statewide delivery service?

12. Do you send/receive enough photocopies in lieu of loans to warrant the use of facsimile equipment?

13. Would it make more sense to have patrons move (rather than the book) by issuing a statewide library card?

14. What would be the consequences if the State Library ceased to coordinate and support interlibrary loan?

IOWA LIBRARY COOPERATION SURVEY

LIBRARY:_____

TYPE OF LIBRARY (elementary, secondary, public, academic special, institutional):_____

DIRECTOR'S NAME:_____

NAME OF CONTACT:_____

TITLE OF CONTACT:_____

ADDRESS:_____

TELEPHONE NUMBER:___Area Code (   )_____

A.   COLLECTION INFORMATION: (including branches)

    1.   What is the number of titles in the collections?_____

    2.   What is the annual % increase in titles?_____

    3.   What is the number of volumes in the collection?_____

    4.   What is the number of serial subscriptions?_____

    5.   List type(s) and numbers of other media in the collection._____

        _____

        _____

    6.   In what form is the existing catalog maintained?

            card ( )   book ( )   online ( )

          computer output microform (COM) (   )

        If book or COM, describe publication pattern.

        _____

        _____

    7.   What % of the records for cataloged titles is in machine-readable form?_____

    8.   Are the machine-readable records in full length or abbreviated form?_____

    9.   Are the machine-readable records in the MARC format?___

    10.   What % of the machine-readable records is in the form of bibliographic utility archival tapes?_____

    11.   Sources of other machine-readable records (e.g., local keying, book jobbers, etc.):_____

B. TECHNICAL SERVICES ACTIVITY:

1. How many monograph titles were ordered in the past year?_____

2. What cataloging support system is used?_____

3. How many titles are cataloged each year?_____

4. Are serials cataloged?_____

5. Are microform cataloged?_____

6. Which audio-visual materials are cataloged?_____
    _____

C. CIRCULATION ACTIVITY:

1. What is the total annual circulation?_____

2. What circulation system is now being used?_____

D. INTERLIBRARY LOAN ACTIVITY (INCLUDING PHOTOCOPIES OF ALL TYPES OF MATERIALS:

1. In which union lists and catalogs are your holdings represented?_____

2. In what regional system or A.D.A. do you participate?__
    _____

3. Annually, how many items (all types) are handled?_____
        Borrowed_____   Lent_____

4. Destination of items lent:
    Within the State:_____% Outside:_____%

5. Do you impose any restriction on ILL lending? If so, please describe._____

6. Source of items borrowed:
    Within the State:_____% Outside:_____%

7. Which libraries are the major sources of material supplied to you on ILL?_____
    _____

8. For what proportion of ILL is a bibliographic utility ILL subsystem used? (e.g., OCLC)_____

9. What percentage of the time is a microfiche union catalog used for ILL?_____

10. What percentage of the time is a CD-ROM-based union catalog used for ILL?_____

11. What is the average satisfaction time (time from patron request to availability) for materials borrowed on ILL?_____

12. Do you participate in a delivery service? If so, which?_____

13. Please discuss your perspective on the current state of resource sharing in Iowa._____

_____

_____

_____

_____

E. AUTOMATION ACTIVITIES AND PLANS:

1. Which functions are currently automated?_____

_____

_____

2. Describe hardware/software configuration of any automated system already in use._____

_____

_____

_____

3. Which functions would the library like to see automated in the next three years? (Number in order of priority with "1" the most important).

Acquisitions ( )   Patron Access Catalog ( )
Serials Control ( )   Interlibrary Loan ( )
Cataloging ( )   Media Booking ( )
Circulation ( )   Word Processing ( )

4. Would the Library prefer to automate its internal operations by itself or share a system with other libraries?_____

5. If a system were to be shared, which nearby libraries would be the most probable partners?_____

_____

6. How important are the following factors in the library's interest in automation? (Number in order of priority with "1" the most important.)

Cost Reduction ( )   Improved Productivity ( )

Cost Containment ( )   Improved Service ( )

Improved Resource Sharing ( )

7. Does the library access any remote reference services/databases?_____

8. How many CD-ROM drives are in use?_____

9. What databases are available on CD-ROM?_____

10. How many PCs with modems are available?_____