

RATIONALE, EVALUATION
AND
RECOMMENDATION
REGARDING THE
AUTOMATION OF CIRCULATION
AT THE
JOHNSON COUNTY LIBRARY

Maurice J. Freedman
Library Consultant
158 Landsdowne Avenue
Westfield, New Jersey
07090
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Norene McDonald, Director of Technical Services, Chair of the Library Automation Committee and Project Coordinator, is the person who most singly contributed to the success of this project.

The Library Automation Committee is to be recognized for its many hours of labor, analysis and discussion, all toward the end of getting the Johnson County Library the best available automated circulation control system under the most favorable conditions.

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EXECUTIVE SUMMARY

1. RATIONALE

The Johnson County Library (JCL) has been using a version of the Detroit Public Library circulation control system, a manual system originally developed the year the Stock Market crashed. In view of its manifold deficiencies, one should not wait for another such occasion to replace it with an automated circulation control system.

One of the most important reasons for JCL to automate its circulation process is to maximize collection utilization. Presently each branch has its own catalog and thus a user of that branch can determine what is held there; but no one at a given branch has access to or knows what is available at any other branch or in the entire JCL. With an automated circulation system, a given user will have access to the full resources of the system, regardless of whether they are in the smallest or largest branch, and can have the items desired brought to them by an efficient courier system installed for that purpose. This relieves individual libraries of the burden of attempting to amass perfect collections, and promotes a greater efficiency in the utilization and storage of materials. If the item desired is not available at the patron's branch, but is available somewhere else, the item can be brought promptly to the patron. This will revolutionize service.

The library's resources will be much more fully utilized. materials in given branches will be used frequently by patrons

at an given branch whereas in the past it was impractical for the patron to access these materials.

Another reason to justify automation is the tremendous and positive effect it will have on the morale of the patrons and the staff. The library users will no longer be penalized for using the library, i.e. filling out circulation slips; they will receive reserved materials in a prompt and expeditious manner; they will be informed simply and immediately of the status of desired items wherever they are in the entire library system; and they will be notified promptly and efficiently of overdue items, as well as be told, if desired, all of the items and fines charged to them as of a given date.

As to the staff, they will no longer be burdened with the demoralizing labors associated with an antiquated, inaccurate and tedious circulation system. This means that they will now be free to do work which will be far more useful to the library and its users and satisfying to themselves.

The labor intensive maintenance of paper files; the clumsy and duplicative reserve routines; the errors in fine calculation; the negative public relations and laborious efforts associated with the creation and dissemination of overdues; the virtual inability to prevent delinquent borrowers from using the library (except at renewal); and the 'poverty of statistical data and management information are all exemplary reasons to abandon the manual system in favor of automation.

Still another reason to automate emerged during the 1970's and is even more accurate, if possible, going into the 1980's: the cost of data processing equipment is decreasing in relation

to the equipment's unit size, speed and power, while the costs of human labor are rising radically as a result of inflation and other factors.. In view of this consideration there must ultimately be advantages to be gained by automating. Coupled with the already intense pressures created by the presently deficient system, automation can come none to soon for JCL.

A final reason to support this shift to automation has already been alluded to: the elimination of the especially onerous penalty placed on the library user for borrowing materials. The user must handwrite the author, title and call number of each book he or she wishes to borrow on a circulation slip. The more books the user wishes to borrow, the more work is imposed upon him or her. Any system which eliminates the need for the patron to donate so much labor to the library each time he or she wishes to borrow a book will be welcomed by the patron and save the Library further embarrassing explanations regarding its antiquated circulation system.

2. The Evaluation Process

The evaluation process was multi-step. The overall responsibility for specification, evaluation and recommendation lies with the Library Automation Committee, chaired by Norene McDonald, Project Coordinator. The Committee includes representatives of JCL's administration and staff, as well as a data processing and a library consultant as resource people.

Essentially the process began with draft specifications for a Request for Bids which everyone eventually commented upon

and revised. A Bidders Conference was held at which time potential vendors stated their concerns. Another revision was circulated, and finally a Request for Bids was officially submitted to vendors for their proposals.

Two companies submitted bids, CL Systems, Inc. (Newtonville, Massachusetts) and DataPhase Systems, Inc. (Kansas City, Missouri). Their respective bids were analyzed separately and then by the full committee. Note that the evaluation and assignment of scores to specific vendor proposals was done on a consensus basis. All members of the Committee, in principle, agreed with all of the scores and evaluations and the recommendation ultimately decided upon - the consensus process. The library consultant was requested to write all of this up in a formal report to the Board.

A variety of evaluative criteria were established: (1) Scores on proposals; (2) Costs; (3) Financial Report; (4) Hardware/Software Analysis; (5) Past Performance/References; (6) Application Support; and (7) other considerations. The evaluations for each of these criteria follow in summary form:

1. Overall DataPhase had the best scores, that is, most closely met the requirements specified by the Johnson County Library.
2. For example DataPhase scored a total of 619 points as opposed to 544.5 points scored by CLSI.
3. DataPhase satisfied the JCL requirements 193 times to CLSI's 162 times, and did not satisfy JCL's specifications 44 times, while CLSI was less than satisfactory 75 times.

4. Lastly DataPhase exceeded CLSI's score in every one of 5 sections of the RFB tabulated. In the critical area of circulation functions, DataPhase outscored CLSI in 6 of 9 areas.

5. The next criterion considered was cost. With the exception of the purchase price for a combined system for all of the area libraries (JCL, Johnson County Community College Library, Olathe Public Library and Kansas City (Kansas) Public Library), DataPhase offered lower purchase prices than CLSI.

6. Two reasons are suggested to militate against JCL's implementing the low bid for the system serving all of the area libraries:
 - (1) JCL will have to procure a computer and disk storage capacity well beyond its own needs.
 - (2) There is some reason to question the capacity of CLSI's offered computer to successfully operate with all of the area libraries sharing it. There is a possibility of unsatisfactory response time.

7. Maintenance costs for the first year are essentially in DataPhase's favor with the only significant difference occurring when all of the area libraries are using the system.

8. one is referred to Tables V and VI for the specific cost figures. (See pp. 35, 36.)
9. A confidential report submitted by a financial analyst concerning the finances of the two companies recommended DataPhase because of its seemingly better control over its debt structure. The analyst noted that both companies were qualified to meet JCL's needs.
10. Ken Rodney, the data processing consultant, gave them equal grades in his formal statement in the following areas:
 - (1) The hardware is manufactured by outstanding companies and the equipment is reliable.
 - (2) The configurations proposed appear to be adequate to do the job required by the library. (This statement is somewhat negated in 6. (2) above).
 - (3) Both systems are expandable.
11. In the area of hardware and software maintenance, Mr. Rodney gives higher grades to DataPhase which is both local and offered quicker response times.
12. DataPhase's application programs are in a high level language, one which permits library staff to develop and write new programs and applications. CLSI's is beyond the competence of all but experienced programming personnel because it is a low level language.

13. CLSI did not clearly indicate that it would deliver its software (source code) to JCL upon being awarded the contract. DataPhase did comply with this specification.

14. Several clients of each company were contacted for references on the performance of the respective systems and maintenance support:
 - (1) Each vendor had at least one client thoroughly satisfied with its services.
 - (2) No clients were found who substantially criticized DataPhase's performance.
 - (3) At least 2 separate large installations of CLSI have had significant problems.
 - (4) One large DataPhase installation was extremely happy and has stayed right on its development and implementation schedule since 1977.

15. Both vendors offer strong application support. Based on DataPhase's higher scores it is clear that CLSI has more application support work to do than DataPhase to meet JCL's requirements.

16. The fact that DataPhase is located in Kansas City, Missouri adds some other considerations, tangible and intangible, to the merit of its selection as the successful bidder:

(1) Because it is so close, response to service needs, parts replacement, etc. should tend to be better than if it were not local.

(2) The fact that the company would want its local (and literally, in terms of its officers, its "home") installation to be a showplace is an intangible consideration that certainly should be in JCL's favor if this recommendation is accepted by the Board.

In view of this array of supporting reasons, and the unanimous agreement of the Library Automation Committee including its data processing and library consultants that DataPhase has submitted the best Bid, it is recommended that the Johnson County Library Board accept the DataPhase Systems, Inc. Bid as most responsive, and subject to satisfactory negotiations, a contract be signed with DataPhase to supply Johnson County Library with the automated circulation control system it proposed.

CONTRACT NEGOTIATION

The final step in the procurement of an automated circulation system is the negotiation of a contract mutually satisfactory to both parties. A variety of problem areas and concerns are enumerated and discussed. For summary purposes, only a few, perhaps the touchiest, will be highlighted:

- (1) A method must be established that will afford the library some degree of consideration when the vendor fails to perform and full payment to the vendor has already been made.
- (2) Standards for acceptance, liability, down-time, etc. must be negotiated.
- (3) A satisfactory payment and performance schedule must be established.
- (4) All of the RFB's specifications, excepting those changed or eliminated must be written into the contract.

One is referred to Chapter 4. if perusal of all of the gory details is desired.

CONCLUSION

A satisfactory rationale and justification has been provided for eliminating the present antiquated circulation system, and reaping the service, morale, and public relations benefits of a successfully installed automated circulation system in its place. The DataPhase Systems, Inc. proposal was the best offered overall in the considered judgment of the Library Automation Committee and its consultants, and is accordingly recommended to the Board for its approval.

Chapter 1:

WHY AUTOMATE?

I. The Present System

This simple question can be answered by comparing the currently employed circulation system with the proposed minicomputer based systems offered in today's marketplace.

The Johnson County Library (JCL) uses a circulation system similar to the one developed at the Detroit Public Library the year the Stock Market crashed, 1929. Although functioning, the JCL system has much to be criticized and little to be praised.'

A brief description of the system is in order before examining some of its salient features.

The basic circulation record is a slip filled out by the patron at the circulation desk which includes his or her writing out the author, title and call number of the book to be circulated. In exchange for this slip, a pre-numbered transaction slip is placed in the book. The circulation clerk writes this number on the slip filled out by the patron, thus creating a numeric link between the book and the patron created slip. This latter slip, the circulation slip or record, is then filed away in transaction number sequence. When a book is returned, the transaction slip is removed from the pocket of the book. Then the patron created slip is removed from the circulation file when the numbered transaction slip is matched to it.

Overdues are simply determined by default, that is, all slips remaining in the circulation file after a given date are overdue. These overdue slips are removed in order to have notices prepared and sent to the delinquent borrowers whose names and addresses were embossed on the back of the circulation slips at the time the item was charged.

This is essentially a simplified version of the system used by JCL, but the basic processes have been indicated. It is now possible to examine specifically some of the deficiencies of this system, and how it tends to limit or detract from the, otherwise fine services provided by the Johnson County Library.

A. ACCESS

The JCL system provides no significant access to the circulation records it maintains. Since the circulation slips are filed by transaction number, it is virtually impossible to find the status of a book by its author, title or call number, nor is it possible to determine for a patron the books charged to him or her.

B. PAPER FILES

Since the records kept consist entirely of paper, there is a great deal of manual labor. The circulation slips must be arranged in numeric order prior to filing, and the transaction slips after having been pulled from returned books must be sequentially ordered before they can be compared against the circulation files.

Both of these tasks are labor intensive and errors are easy to make and often happen.

C. PATRON ROLE

The patron must fill out the basic charge record, a time-consuming laborious task, especially for the heavy library user. In effect the greater the use, the greater the penalty. Frequently these patron records must be rewritten by staff because of illegibility. This particular feature must surely be one of the most negative experiences JCL's patron's have in using the library.

D. RESERVES

It is almost impossible to keep track of reserves. Each week a 40 page typewritten list is circulated to each branch which indicates the items currently on reserve. At each branch, all returned items are searched against this list in order to catch those returned items which have been reserved. In addition to being extremely time-consuming, it is also duplicative or redundant. In principle it is possible for each branch to catch the same book thus taking them all out of circulation, when only the first copy returned is needed.

E. FINES

All fines are tabulated by human beings, and thus errors can and do take place.

F. OVERDUES

The process of preparing overdue notices is both inefficient and costly, and creates ill-will toward the library. Three overdue notices are sent. The first is sent two weeks after the book is overdue and does not indicate which item(s) is (are) overdue. The second notice, a bill, is mailed to the patron 3months later and does indicate which item(s) is (are) overdue. The final notice is sent after six months and only lists the amounts of money owed. The library receives calls after the first notice by patrons wishing to know which items are overdue. Finding the information needed is time consuming, and it is not always found. A second notice after three months is expensive to produce -- the information is manually typed and the patron frequently is irate because of the great time lapse between notices.

G. DELINQUENT BORROWERS

It is almost impossible to catch delinquent borrowers except at the time they renew their cards. Lists of delinquent borrowers used to be prepared and kept at the charge desks of each branch.

It was time consuming to check each borrower against the list, and also problematic in that the lists would not remain accurate for very long. Consequently borrowers would be falsely accused of owing money which they recently would have paid to the library. These delinquent lists were discontinued for these reasons.

H. STATISTICS and MANAGEMENT DATA

Virtually no useful information is readily obtainable from the JCL system except the total number of items circulated. Little other useful data can be obtained except by using sophisticated sampling data. And it is practically impossible to determine how often or, the last time a given item in the collection has circulated.

II. AUTOMATION

The currently available minicomputer based circulation systems successfully and easily deal with all of the problem areas indicated while providing a host of additional benefits and services. It will be most useful to view these as we did the manual system.

Simply the automated system uses the speed, the storage capacity, and the manipulative ability of today's on-line interactive computer systems to capture, store and process library information in a rapid and useful manner which ultimately enriches and enhances library service.

A. ACCESS

At any time, the status of a book can be determined immediately by author, title or call number. In addition, a patron can easily and simply be told all of the books charged to him or her and when they are due, regardless of how many books are charged out and whether they were borrowed on the same or different days.

B. PAPER FILES

All paper files are eliminable. Since all of the data is stored in the computer and is retrievable on demand in either a video display or computer printout, there is no need for paper files. Thus all of the labor intensity and errors associated with the manual system are eliminated.

C. PATRON ROLE

The patron now only needs to present his or her card, the books to be charged, and carry them away. All of the burden placed on the patron is removed - he or she need no longer handwrite circulation information for the library. The elimination of this step will provide the foundation for massive public acceptance of the automated circulation system.

D RESERVES

Reserves are expeditiously handled. The computer keeps track of them and will automatically trap the first copy returned of a reserved title. A light goes on and a sound is made, alerting the clerk to the reserve status of a returned item. In addition the computer will keep track of all of the reserves for a given item in the order they are placed, assuring that they are filled in proper sequence and no individual accidentally gets unfair treatment. of course, the 40 page typewritten list and the manual checking of returns are eliminated.

E FINES

Fines are automatically calculated and thus errors in calculation are eliminated.

F. OVERDUES

The computer will automatically produce overdue notices which indicate the items outstanding. All typing is eliminated, plus the taking of phone calls requesting the items overdue associated with the first notice. Since the computer generates the notices, the second and third ones can be produced in a much more timely manner than three to six months. Note also that the complex and voluminous manual files associated with the overdue process are totally eliminated.

G. DELINQUENT BORROWERS

As with reserved books, the computer automatically signals the clerk a light goes on and a sound is made -- when a delinquent borrower attempts to charge a book. No longer will the library have to wait for the delinquent to renew his or her card to collect fines or suspend the person's library privileges.

H. STATISTICS and MANAGEMENT DATA

The computer makes it possible to determine how often a given item or materials in a given subject classification have circulated, the last time a given patron borrowed (or returned a book, or much other valuable data. It will also notify the library to purchase additional copies of a book when too many reserves accumulate for it. This merely touches upon the kind of data which can be obtained which will allow the library to rationally manage and utilize the materials comprising the Johnson County Library.

III. OTHER IMPLICATIONS

One of the most important reasons for JCL to automate its circulation process is to maximize collection utilization. Presently each branch has its own catalog and thus a user of that branch can determine what is held there; but no one at a given branch has access to or knows what is available at any other branch or in the entire JCL.

With an automated circulation system, a given user will have access to the full resources of the system, regardless of whether they are in the smallest or largest branch, and can have the items desired brought to them by an efficient courier system installed for that purpose. This relieves individual libraries of the burden of attempting to amass perfect collections, and promotes a greater efficiency in the utilization and storage of materials. If the item desired is not available at the patron's branch, but is available somewhere else, the item can be brought promptly to the patron. This will revolutionize service.

The library's resources will be much more fully utilized. Materials in given branches will be used frequently by patrons at any given branch whereas in the past it was impractical for the patron to access these materials.

The last implication to be discussed, although others can be drawn, is the tremendous and positive effect on the morale of the patrons and the staff. The library users will no longer be penalized for using the library, i.e. filling out circulation slips; they will receive reserved materials in a prompt and expeditious manner; they will be informed simply and immediately of the status of desired items wherever they are in the entire library system; and they will be notified-promptly and efficiently of overdue items, as well as be told, if desired, all of the items and fines charged to them as of a given date.

As to the staff, they will no longer be burdened with the demoralizing labors associated with an antiquated, inaccurate and tedious circulation system. This means that they will now be free to do work which will be far more useful to the library and its users and satisfying to themselves.

IV. CONCLUSION

The service benefits demonstrated in the foregoing justify the acquisition and implementation of an automated circulation system and the discontinuation of the present Detroit based system.

Chapter 2:

THE EVALUATION PROCESS

The process of specification, proposal evaluation and recommendation was thorough, objective and fair. Norene McDonald, Director of Technical Services is Project Coordinator, and with committee of library staff representing a variety of work areas and levels of responsibility did the basic work central to the procurement process. A data processing consultant, Ken Rodney, Data Processing Manager for Overland Park, a library consultant, Professor Maurice J. Freedman, School of Library Service, Columbia University, and Robert W. Shaumeyer, Purchasing Agent for Johnson County all played consultative roles in regard to the work done by Ms. McDonald's committee.

This section will briefly describe the steps culminating in this Report and recommendation to the Board.

1. The committee met several times and drew up several successive draft specifications for a Request for Bids (RFB) for a library circulation control system.
3. A preliminary final draft, having been created, was circulated to Messrs. Rodney, Freedman and Shaumeyer for comment and review.

3. The revised draft, incorporating the comments of the aforementioned was then circulated to all eligible vendors.
4. The vendors were invited to a bidders' conference at the Library which included the committee and the others named above. The purpose of the conference was to provide the bidders an opportunity to comment on that which seemed to need change in the RFB and any other matters of concern or questions they had. Representatives from CL Systems, Inc., DataPhase Systems, Inc. and UNIVAC attended this conference.
5. A revised draft incorporating the changes, comments, etc. was created by the committee and circulated.
6. After receiving these comments, the Request for Bids was published and distributed to all of the vendors in the field.
7. Prior to the receipt of the vendor proposals an evaluation form and methodology were submitted to the Library by Professor Freedman. With minor revision the proposed evaluation form was accepted by the Library.

8. Bids were received from three vendors, CL Systems, Inc. (Newtonville, Massachusetts), DataPhase Systems, Inc. (Kansas City, Missouri) and Universal Library Systems, Ltd. (Vancouver, Canada). The latter bid was disqualified because the customs office in Kansas City had broken the seal and inspected it prior to its arrival at the Purchasing office, Johnson County. Only sealed bids are eligible for consideration.

9. After independent reviews of the two competing bids, the committee and Messrs. Rodney and Freedman met to evaluate the proposals offered.

10. As a part of the evaluation process, the committee, consultants and purchasing agent requested one of the vendors, DataPhase, to meet with them to clarify some of their proposals and answer pertinent questions. In addition, telephone conversations were held with both bidders as well as several of their present clients.

11. A final evaluation session took place which included the committee and Messrs. Rodney and Freedman. A basis for recommendation which included a multiplicity of criteria was established and a recommendation was made.

12. Professor Freedman was requested to prepare a formal report and recommendation to the Board which fairly and accurately reflects the work of the total group. Mr. Fox, the County Librarian, requested that it also include a rationale for the procurement of a computerized circulation control system. This report is offered in fulfillment of these objectives, and in final draft form for review and comment by library staff, administration and Board.

Chapter 3:

EVALUATION CRITERIA and RECOMENDATION

A variety of criteria were used to evaluate the proposals offered in the vendors' bids. Both of the vendors were in the largest part responsive to the specifications of the library, but as analysis will show one of the two will emerge as more responsive to the needs of the Johnson County Library. The criteria used will be considered as separate sections of this chapter, and are as follows:

- I. SCORES ON PROPOSALS
- II. COSTS
- III. FINANCIAL ANALYSIS AND BACKGROUND
- IV. HARDWLRE/SOFTWARE ANALYSIS
- V. PAST PERFORMANCE/REFERENCES
- VI. APPLICATION SUPPORT
- VII. OTHER CONSIDERATIONS

A final section, VIII. RECOMMENDATION, is based on sections I-VII.

I. SCORES ON PROPOSALS

Each of the bids was analyzed in relation to its satisfying the specifications of JCL. The analysis first established whether the individual specification was met or not met; if it was met, a score of 1 to 5 would be assigned to the offering (1 = barely meets requirements; 3 = substantially meets the requirements; 5 = substantially exceeds what the Library requires.) A '0' (zero) was assigned to any offering which did not meet the specification. Unless explicitly otherwise allowed, any vendor offering which was not currently operational in libraries was judged unresponsive to the library requirement. This particular requirement was stated more than once in the Request for Bids.

The scores obtained were derived through the consensus process. The committee and consultants in every case reached agreement concerning all scores assigned to the specific responses of each vendor.

The following tables indicate the scores assigned and tabulated, analysis of them by specification category and the vendors' success or lack thereof in regard to several perspectives. The actual worksheets from which these scores have been derived are on file at the Johnson County Library, and are not included with this report.

DataPhase clearly outscores CLSI in overall raw score, 619 to 544.5. Further analysis shows that DataPhase outsourced CLSI in each of sections II through VI of the RFB. It was only in a minority of analyzed categories in section IV that CLSI made superior offerings. There is no scoring for section VII, System Configuration.

Due to its technical nature, the data processing consultant, Mr. Rodney, has separately evaluated this section.

One can conclude on the basis of the scores assigned by the evaluation team that DataPhase Systems, Inc. responded more favorably to the RFE than CL Systems, Inc. Both the raw scores and the more detailed analyses support this overall judgment.

Table I. RAW SCORE

VALUE (0-5)	NO. of TIMES		TOTAL	
	<u>VALUE ASSIGNED</u>		<u>POINTS SCORED</u>	
	CLSI	DATAPHASE	CLSI	DATAPHASE
5	0	1	0	5
4	8	10	32	40
3.5	1	0	3.5	0
3	153	182	459	546
2	16	12	32	24
1	17	4	17	4
0.5	2	0	1	0
0	<u>40</u>	<u>28</u>	<u>0</u>	<u>0</u>
	237	237	544.5	619

Table II. MEETS REQUIREMENT SCORES

	<u>CLSI</u>	<u>DATAPHASE</u>
1. Satisfactorily Meets Requirements or Better Than (No. of Times Value of 3 or Higher Assigned)	162	193
2. Less Than Satisfactory or Worse (No. of Times Value Lower than 3 Assigned)	<u>75</u>	<u>44</u>
	237	237

Table III. SCORES BY SPECIFICATION CATEGORY

		CLSI	DATAPHASE
Section II.	Instructions and Conditions to Bidders	25	28
Section III.	General Information	89	101
Section IV.	Functional Specifications*	355	406
4.1	General system requirements	105	134
4.2	Materials file	44.5	50
4.3	Circulation functions	65	64
4.4	Patron file description	36	35
4.5	Overdues	19.5	16
4.6	Reserves	32	33
4.7	Training	32	33
4.8	Management reports and statistics	9	26
4.9	Miscellaneous	12	15
Section V.	Evaluation Criteria	18.5	21
Section VI.	Mandatory contractual provisions	<u>57</u>	<u>63</u>
	Total	544.5	619

*Because of its specific importance, this particular category is also further broken down by individual area of function.

Table IV. HIGHER SCORES

	<u>CLSI</u>	
	<u>DATAPHASE</u>	
I. No. of sections vendor has higher score	0	5
II. No. of circulation functions better offered (4.1-4.9)	3	6

II. COSTS

It is important to recognize that both vendors provide the benefits of automation, a notable achievement in terms of cost control. One of the potent truisms which emerged from the 1970's and is even more accurate, if possible, going into the 1980's is that the cost of data processing equipment is decreasing in relation to the equipment's unit size, speed and power, while the costs of human labor are rising radically as a result of inflation and other factors. As indicated in Chapter 1, there is great labor intensity in the current manual system used by the library. Hard cost studies are not in the scope of this evaluation process. Despite their absence it is safe to say that costs will be far more controllable with an automated system. The elimination of so many of the manual, costly and ineffective processes performed by staff will yield appreciable and identifiable cost savings and simultaneously free these people to do work today's machines cannot and contribute to better service.

The comparative costs derived from the Bids appear in Table V and VI. Some comment is required. CLSI bid on the entire system as specified. That system is identified as CONFIGURATION F in these two tables. DataPhase offered several more limited configurations in addition to bidding on CONFIGURATION F. With the advice of CLSI, CONFIGURATIONS B, C, D, D and a were extrapolated from CONFIGURATION F. With the advice of DataPhase, CONFIGURATION D¹ was extrapolated from its B-F configurations. It was CLSI's position that the shared hardware

and software costs (\$90,000 and \$55,000 purchase price, respectively) are the same for all configurations. The reader will note that DataPhase increases its hardware costs and capability as the number of libraries using its system increases. Except for CONFIGURATION F, DataPhase's purchase price is cheaper than CLSI's in all instances. Regarding one year maintenance charges, DataPhase again offers a cheaper system in A-D configurations, is negligibly more expensive (\$262 more for the entire year) than CLSI for D¹, and CLSI clearly is cheaper than DataPhase for CONFIGURATION F.

Several conclusions can be considered. If one purchases equipment for all of the libraries save Kansas City (Kansas) Public Library, DataPhase offers an appreciably cheaper price. It is only the acquisition of a system to support all of the libraries (CONFIGURATION F) which presents CLSI favorably. Two considerations detract from the election of this option. First, it is disadvantageous to the Johnson County Library. It will, have to procure hardware well beyond the needs of its own branches. Second, an analysis of CLSI's offering plus references indicate that its low bid for CONFIGURATION F is predicated on a central processing unit of dubious capacity and appreciably less memory (128 KB less) than that offered by DataPhase. The judgment of Mr. Rodney, the data processing consultant, is that it is questionable that CLSI can maintain adequate response time for all of the CONFIGURATION F libraries using the proposed central processing unit (computer). (Note that CLSI offers the same 256-KB computer for Johnson County Library, Johnson County Community College Library, Olathe Public Library and the Kansas

City (Kansas) Public Library all together, as the Johnson County Library by itself).

Therefore, DataPhase offers the better buy at all levels except CONFIGURATION Ff and the cost savings offered by CLSI for CONFIGURATION F are doubtful in view of the smaller computer proposed.

Table V. COMPARATIVE PURCHASE PRICES

CONFIGURATION	CLSI	DATAPHASE
Configuration B JCL only	\$ 321,775	\$260,910
Configuration C JCIJ & Olathe	337,125*	288,690*
Configuration D JCL & Johnson County Community College	332,675*	283,830*
Configuration D 342,330** JCL, Olathe, Johnson County Community College	348,025*	
Configuration E 336,110** JCL & Kansas City	356,275*	
Configuration F 452,730** All. libraries together	382,525*	

* No added memory of disk capacity required.

** Requires addition of 128 KB memory to cpu and 192 MB storage to disk capacity.

Table VI. COMPARATIVE ONE YEAR MAINTENANCE PRICES

COINFIGURATION	CLSI	DATAPHASE
B	\$26,487	\$22,860
C	27,869	25,056
D	27,468	24,744
D ¹	28,850	29,112
E	29,592	29,412
F	31,955	35,760

III. FINANCIAL REPORT

A confidential report was prepared by a financial analyst which included detailed reviews of audits of the vendors and the auditor's notes regarding their debt structure and future capability. The latest balance sheet and income account were analyzed by the ratio method for each company.

The financial analyst's overall objective was to determine the individual companies' capabilities to handle the Johnson County Library automated circulation system based on their financial statements.

The financial analyst concluded that both companies had the financial strength to provide the necessary service for the present and in the future. However it is his specific recommendation that DataPhase be selected. It is a relatively new company and it appears to have better control over its debt structure.

IV. HARDWARE/SOFTWARE ANALYSIS

The following comments pertain to the computer system which supports the two proposed Library Circulation Control Systems. The comments were prepared by Ken Rodney, Data Processing Manager for the City of Overland Park and a member of the Library Automation Committee:

1. Both of the Automated Circulation Control Systems proposed use a minicomputer system to process and store the large amounts of data involved. DataPhase Systems Incorporated (D.S.I.) proposed a Data General Corporation Eclipse S/130 Central Processing Unit (CPU) and Data General Input/Output devices. CLS systems, Incorporated (CLSI) proposes a Digital Equipment Corporation PDP 11/34 CPU and Input/Output devices supplied by other manufacturers. Both of these minicomputer systems are considered leaders in the minicomputer industry. They are manufactured and marketed by well-known, highly reputable companies who have been in the mini-computer business for a number of years. Therefore, the Library can feel confident that the circulation system selected will be supported by a proven, reliable minicomputer system.

2. The two minicomputer systems proposed appear to have adequate capacities and capabilities to support the volumes required by the Library at the required terminal response levels. However, the two computer configurations differ in two areas, CPU storage and disk storage. DataPhase proposed 385KB (thousand bytes) of CPU High Speed Storage while CLSI proposes a 256KB CPU. DataPhase has proposed 526 megabytes of disk storage. CLSI has created some confusion in this area by recommending 600 megabytes of disk storage in one part of their response but listing 1200 megabytes in their computer configuration. A letter from CLSI National Marketing Representative explains this discrepancy as an error on their part. It goes on to explain that 600 megabytes is the space required but that the quoted price includes 1200 megabytes. of significance to the Library, is that both computer systems as proposed appear to meet the requirements.

3. Both minicomputer systems proposed are easily expandable to accommodate volumes which exceed those projected in the Library's Request for Bid. The CLSI Digital Equipment Corporation PDP 11/34 can be replaced with a more powerful PDP 11/44. Additional CPU and disk storage can be added. The DataPhase Eclipse S/130 can be replaced by an Eclipse.S/140 for more processing power. Like the PDP system, additional CPU disk storage can be added.

4. Superior hardware and software maintenance support is mandatory for a successful on-line computer application such as the Automated Library Circulation Control System. In this area DataPhase Systems appears to be able to provide better support than CLSI. This is not surprising since DataPhase Systems is headquartered in Kansas City.

DataPhase will contractually agree to a hardware maintenance response time of no longer than 4 hours, although they claim that 2 hours is normal in the Kansas City area. The maintenance personnel are located in Kansas City and are Data General personnel. Software maintenance response time will be no longer than 1 hour on a 24 hour basis by way of a telephone call to a "trouble desk" located in Kansas City.

Software maintenance personnel are available for on-site work and are likewise located in Kansas City. CLSI hardware and software maintenance personnel are located in St. Louis, Chicago and Newtonville, Massachusetts.

According to CLSI the response time to maintenance calls will not exceed 40 hours. The hardware maintenance personnel are CLSI employees and are located in St. Louis. Currently software maintenance is done by calling the support center in Chicago, but only during designated hours. CLSI indicates that plans are being made for a 24 hour support center operation, although it is not

clear as to where that support center will be located for Kansas City customers.

5. The system control software and the on-line data base system software for both systems appear to be very reliable. The application programming language used by DataPhase will offer some advantages to the Library. Because it is a very high level language, Library personnel, themselves, will be able to develop and write programs to create and maintain new data files. The CLSI System, however requires experienced programming personnel to develop new programs.

In addition to Mr. Rodney's formal comments, two other considerations obtain regarding hardware and software. The RFB was quite specific in requiring that the source code for the system (i.e. the programs) given to the library at the inception of the contract. The concensus of the committee was that only DataPhase clearly complied with this requirement and that CLSI was evasive.

Mr. Rodney in his formal comments did-not cast doubt on the general capability of CLSI's proposed 256 KE minicomputer. However, in the committee discussions he stated that some question could be raised regarding the ability of this device to handle the upper ranges of JCL's requirements, and suggested the seeming superiority of the DataPhase bid because of its enhanced computing power at these more demanding levels (D I E and F).

V. PAST PERFORMANCE/REFERENCES

Several customers of each vendor were contacted. Both companies have accounts which speak highly of their respective services. However CLSI unlike DataPhase has some accounts which have evinced some serious concerns regarding performance.

Several phases of service were considered: overall satisfaction of contractual commitments regarding installation and implementation; software and hardware maintenance; and general functioning of the system.

Taking the last one first, both companies have customers which are satisfied with overall performance. The director of one large CLSI installation stated that he was generally satisfied with the systems overall operation for several years, but had some concerns regarding the last couple of months. He was quick to caution that CLSI was working closely with the Library to resolve the situation, and he was optimistic that the problem would be solved shortly.

Many encouraging positive and complimentary statements were made by Charles Robinson, Director of the Baltimore County Library. With 42 working terminals the Baltimore County Library is satisfied with CLSI's performance.

One major problem in evaluating CLSI's capabilities is the identification of what it is offering. CLSI claims that 350 libraries are using the identical LIBS 100 system currently available in Release 24. Of four similar library systems all supposedly using Release 24 and the same LIBS 100 system, only one is using the Bibliographic Access Module and has full length bibliographic records entered into the system. That is, 3 of the 4 libraries do not have author, title subject and call number access as one would be led to believe from reading CLSI's proposal.

Regarding maintenance hardware and software CLSI had been downgraded by Alameda County Library (California). Alameda, up until this month, stated that the replacement time for defective or non-functioning equipment was not good. Regarding main frame down-time Alameda reported virtually no problems for the past eleven months. Establishing a 70 degree dust-free environment helped to ensure this well-functioning. Baltimore County is complimentary of maintenance service.

Regarding implementation of the contracted system, a library choosing to remain unidentified has expressed its disappointment over CLSI's ability to meet its contractual obligations as to delivery of proposed systems and response time. Consequently this library's overall implementation plan has been delayed. It should be noted that JCL's RFB has not

allowed the offering of any "under development" systems in satisfaction of present needs. This should spare JCL at least one potential area of non-performance by either of the vendors selected.

DataPhase's customers were generally complimentary regarding the overall functioning of DataPhase's system at their library.

The Houston Public Library was especially satisfied with the implementation of DataPhase's system. Jay Clark, Director of Technical Services states that he is "real pleased" and that the system is doing what DataPhase said it would. In fact with the enhancements provided, the system is doing more than Houston originally required in 1977 when the contract was written. Clark also noted that fifty terminals servicing eight separate libraries (Houston Public, Harris County and others) at approximately eighteen sites are functioning at acceptable response times. He did indicate that he would like a better response time at peak hours, but, because of the deep conversion being done by Houston, Clark feels that DataPhase is performing acceptably.

Clark was very happy with the service provided for the hardware and software. Only once since 1977 did he feel that service was less than it should have been; replacement of a disk motor took one day longer than reason able in his opinion. He is concerned however that the good service on software support may be eroding with DataPhase's continued growth. It is still acceptable, however.

Regarding schedule, Clark states that Houston is exactly where it should be in its implementation schedule, and reiterated

his overall satisfaction with DataPhase. None of the other DataPhase customers contracted offered substantially different experiences.

In conclusion both companies can provide a satisfactory system. But which one overall is more likely to meet its contractual obligations regarding installation, implementation and service? On the basis of the libraries contacted, DataPhase seems more likely to meet its contractual obligations and perform satisfactorily.

VI. APPLICATION SUPPORT

Several findings are clear. Each of the two vendors is deeply committed to enhancing its product and that any gain or innovation by one soon or eventually will be matched by the other. Both vendors have large application support staffs, promise to offer authority control, automated acquisitions, and other library functions in the near future. On the other hand each is ahead of the other in some areas at least.

Of particular value in terms of present offerings are two components of DataPhase's System. One of which is "password" control, the ability to control access to data in the computer by individual or by terminal. The other feature appreciated is the ability to store, manipulate and display full MARC records. (MARC is the standard format for cataloging in machine readable form).

Regarding these two features CLSI has "password" under development, and in its "full" bibliographic record only allows for the use of 30 fields in a MARC record, not the complete record. As was indicated by the far greater number of 0's, 1's and 2's (see Table II) scored by CLSI -- 75, as opposed to 44 scored by DataPhase -- it is clear that there is more to be done by CLSI than by DataPhase in terms of application support for the Johnson County Library.

One particular feature offered by CLSI appreciated by the committee is the automatic generation of an overdue notice after 5 days to a branch holding another branch's returned book. Although, less than critical, it is a valuable reminder.

For greater detail one is urged to examine the Bids submitted by both vendors.

VII. OTHER CONSIDERATIONS

The major areas having been covered, some consideration should be given to the intangibles. The single greatest intangible, the extreme closeness of DataPhase to JCL, has a most significant tangible benefit. Access to DataPhase is immediate and local, which should prove to be a boon regarding overall support, maintenance and service. Having a vendor a few minutes away by car who can answer questions, come visit the installation, be visited by JCL staff and perform a variety of miscellaneous and sometimes vital services on short notice is a stroke of good fortune for JCL.

In addition to business considerations, one would guess that DataPhase's commitment to JCL would be strong because its chief executives and their families live in Johnson County and are users of JCL's branches. Such a personal involvement in the successful installation of the system, although unprovable in advance and an intangible, is an added consideration in DataPhase's favor.

The tangible and intangible considerations of this chapter should not be over-valued in the evaluation process. Nor should they be totally ignored. One suggests that were all things equal between the two bids, these other considerations would tip the judgment to DataPhase.

VIII. RECOMMEDATION

DataPhase Systems, Inc. is recommended to the Board as the most responsive bidder to the RFB for a Library Circulation Control System for the Johnson County Library. This recommendation is the unanimous judgement of the Library Automation Committee which included the participation of the data processing and library consultants and the committee's chairperson and project coordinator. All agree that overall DataPhase submitted the best overall proposal to supply the system and services specified in the Johnson County Library Request for Bids.

A variety of reasons supports this judgment and they were indicated and explained in detail in the first seven sections (I - VII) of this chapter. In review, the bases for this recommendation are as follows:

1. Overall DataPhase had the best scores, that is, most closely met the requirements specified by the Johnson County Library.
2. For example DataPhase scored a total of 619 points as opposed to 544.5 points scored by CLSI.
3. DataPhase satisfied the JCL requirements 193 times to CLSI's 162 times, and did not satisfy JCL's specifications 44 times, while CLSI was less than satisfactory 75 times.

4. Lastly DataPhase exceeded CLSI's score in every one of 5 sections of the RFB tabulated. In the critical area of circulation functions, DataPhase outscored CLSI in 6 of 9 areas.

5. The next criterion considered was cost. With the exception of the purchase price for a combined system for all of the area libraries (JCL, Johnson County Community College Library, Olathe Public Library and Kansas City (Kansas) Public Library), DataPhase offered lower purchase prices than CLSI.

6. Two reasons are suggested to militate against JCL's implementing the low bid for the system serving all of the area libraries:
 - (1) JCL will have to procure a computer and disk storage capacity well beyond its own needs.
 - (2) There is some reason to question the capacity of CLSI's offered computer to successfully operate with all of the area libraries sharing it. There is a possibility of unsatisfactory response time.

7. Maintenance costs for the first year are essentially in DataPhase's favor with the only significant difference occurring when all of the area libraries are using

8. One is referred to Tables V and VI for the specific cost figures.
9. A confidential report submitted by a financial analyst concerning the finances of the two companies recommended DataPhase because of its seemingly better control over its debt structure. The analyst noted that both companies were qualified to meet JCL's needs.
10. Ken Rodney, the data processing consultant, gave them equal grades in his formal statement in the following areas:
 - (1) The hardware is manufactured by outstanding companies and the equipment is reliable.
 - (2) The configurations proposed appear to be adequate to the job required by the library. (This statement is somewhat negated in 6. (2)" above).
 - (3) Both systems are expandable.
11. In the area of hardware and software maintenance, Mr. Rodney gives higher grades to DataPhase which is both local and offered quicker response times.
12. DataPhase's application programs are in a high level language, one which permits library staff to develop and write new programs and applications. CLSI's is beyond the competence of all but experienced programming personnel because it is a low level language.

13. CLSI did not clearly indicate that it would deliver its software (source code) to JCL upon being awarded' the contract. DataPhase did comply with this specification.

14. Several clients of each company were contacted for references on the performance of the respective systems and maintenance support:
 - (1) Each vendor had at least one client thoroughly satisfied with its service
 - (2) No clients were found who substantially criticized DataPhase's performance.
 - (3) At least 3 separate large installations of CLSI have had serious problems. One of the three evidenced more anger than ever before witnessed by this writer in a library context.
 - (4) One large DataPhase installation was extremely happy and has stayed right on its development and implementation schedule since 1977.

15. Both vendors offer strong application support. Based on DataPhase's higher scores 'it is clear that CLSI has more application support work to do than DataPhase to meet JCL's requirements.

16. The fact that DataPhase is located in Kansas City, Missouri adds some other considerations, tangible and intangible, to the merit of its selection as the successful bidder:

- (1) Because it is so close, response to service needs, parts replacement, etc. should tend to be better than if it were not local.
- (2) The fact that the company would want its local (and literally, in terms of its officers, its "home") installation to be a showplace is an intangible consideration that certainly should be in JCL's favor if this recommendation is accepted by the Board.

In view of this array of supporting reasons, and the unanimous agreement of the Library Automation Committee including its data processing and library consultants that DataPhase has submitted the best Bid, it is recommended that the Johnson County Library Board accept the DataPhase Systems, Inc. Bid as most responsive, and subject to satisfactory negotiations, a contract be signed with DataPhase to supply Johnson County Library with the automated circulation control system it proposed.

Chapter 4:

CONTRACT CONCERNS/REQUIREMENTS

There are a variety of concerns and requirements which will play a part in the contract negotiation process. Herein are listed a number of these concerns and requirements which may or should require special attention during the negotiation.

- (1) The library should use the services of a lawyer familiar with library and data processing contracts. The latter in this case may be the more important if one cannot have both legal skills.
- (2) The library should draft its own contract and use it as the point of departure for negotiations, as opposed to using the vendor's standard agreement.
- (3) The single most hotly negotiated item will be protection for the library if there is non-performance by the vendor. The Library's protection after all payments and purchases are made will take the form of liquidated damages, penalty clauses etc. in relation to specified non-performance by the vendor. The vendor will probably claim that the data processing field generally provides no such remedies, and it is

unfair for the library to seek such. The vendor will probably indicate that the library always has the recourse of bringing suit. The library has the following alternatives:

- a. Requiring some negotiated liquidated damages/ penalty/etc. clause despite the vendor's objections.
- b. Withholding partial payment until a lengthy acceptance test criterion is fully met. (One library paid the second half of the purchase price 3 years after the contract was signed).
- c. Exercise the "bringing suit" option. This is the least desirable and should be rejected out of hand by the library.
- d. Some possibility may exist to have a maintenance bond considered in this area.

In terms of the above, it is recommended that the best combination of a. and b. be negotiated by the library. The library must have some recourse for non-performance after it has paid for the system.

- (4) The determination as to what is an acceptable percentage of down-time must be negotiated. Current vendors claim that 96% is acceptable and libraries have required 98%. It is suggested that anything

higher 96% will be adequate. This notion will be tied to (3) above.

- (5) The contract should state exactly what backup of parts will be stocked by the vendor. If DataPhase is selected, an effort might be considered to have it guarantee as many parts and components as possible, up to total backup locally. It would not be unreasonable to broach this latter consideration with DataPhase, but it would be unfair to demand it.
- (6) The vendor should cooperate with the library and suggest the best possible communications pattern from the standpoints of line charges and response time. The use of "concentrators" might be proposed where appropriate.
- (7) The standard warranty disclaimer and consequential damages provision will no doubt be considerations. The vendor will probably not want to warrant or be responsible for damages for anything which was not explicitly required in the contract. It is not unfair of the vendor to seek this requirement, but it is also essential that the library explicitly list all of its requirements. Detailed specifications are to the good in this area.

(8) Related to (3) above, a payment schedule will definitely be an area for negotiation. Several factors must be addressed:

a. The vendor has a right to be paid for successfully delivered products and services.

b. The library has a right to withhold payment until each particular product or service is acceptably installed and operating.

c. Debate will focus on what is a reasonable acceptance period.

d. The library will start at 60 days and the vendor will start at 30 consecutive days of acceptable performance.

(9) The library cannot expect or demand the successful operation of systems and services not presently available from the company.

(10) Assuming the acceptance of the recommendation of DataPhase, its offer of a \$50,000 discount, which will have expired already should be reinstated and included as a deduction from the final purchase price.

(11) Certain software changes should be negotiated by the library.

a. The vendor should create indexes for several additional fields in the MARC record. These fields will be specified later.

b. Specification 4.24 in the RFB should be met by the vendor.

c. The special treatment and calculation of rental materials and fees should be added to the vendor's requirements. (See 4.37 of the RFB).

d. Calculation of average number of days to fill reserves should be added to the system capabilities.

(12) The contract must require that the vendor provide an annual financial statement for the library's review.

(13) The assignment of a service contract by the vendor to a third party should be carefully spelled out. The library should have ultimate veto power over any major change. Some third party alternatives are as follows:

a. if the successful vendor should merge with or be taken over by another party, or

b. if the company should sell the contract to a third party.

- (14) The library must know all of the executory (implementation) costs of the program maintenance, insurance on the property, supplies etc. are all costs to the library and they should be known prior to execution of the contract.
- (15) The financial analyst, in addition to (12) - (14), recommends that the library hire a software expert to ensure that the required work and services are being satisfactorily performed.
- (16) It is extremely important that what constitutes default by both the library and the vendor be clearly spelled out.
- (17) A mutually agreed upon acceptance test plan and procedure must be negotiated. (See also(3), (4), and (8) above).
- (18) Lastly, the RFB and its several specifications except wherein specifically amended in a mutually agreed upon manner by both parties, or explicitly rejected by the vendor should be all in force in the negotiated contract.

It is most important that the contract should be seen as a partnership in whose success both parties have an important stake. Therefore mutual respect, mutual need and mutual satisfaction must be recognized achieved and reflected in the finally negotiated contract.

APPENDIX I: Library Automation Committee

Nancy Breeden,	Supervisor, Support Services
Leroy Fox,	County Librarian
Steve Lane	Cataloger
Norene McDonald	Head, Technical Services, and Chairperson of the Committee
Frances Ricci,	Head, Branch System
Diary Kay Smith,	Head of the Resource Library
John Sondheim,	Planning Librarian

and

Maurice J. Freedman,	Library Consultant
Ken Rodney,	Data Processing Consultant