Consulting in Computer Applications to Libraries

ROBERT M. HAYES

INCLUDED IN THE BIBLIOGRAPHY to this paper are several references that include listings of library consultants directly or indirectly related to library automation (Berry, Cibbarelli, Finnigan, International Microfilm Source Book, Kruzas, Special Libraries Association, Warnken, Wasserman). Beyond the more than 200 companies identified in them are uncounted numbers of individuals who serve as consultants, either as a business or on an ad hoc basis.

The Consulting Relationship

With such a profusion of consultants specializing in this field, it is clear there are both real and felt needs that they serve. The purpose of this paper is to explore those needs and to identify what the consultant can do to help.

Roles of the Consultant

Consulting with respect to library automation is probably similar to that for other areas, at least in most general aspects. In particular, the reasons that one calls on a consultant are almost certainly the same:

1. There may be internal conflicts within the library concerning one or another aspect of the decisions regarding library automation. The consultant is called upon as a means of resolving them.
2. There may be a need to establish communication between the library staff and technicians, such as programmers, with whom staff must work. The consultant is called upon to facilitate that communication.

3. There may be specific expertise that the library lacks, and the need is neither great enough nor long-lasting enough to warrant adding staff. The consultant is called upon as a means of providing that expertise.

4. Even when the library has all of the expertise required, there may be interim manpower needs greater than library staffing can cover. The consultant is sometimes called upon to augment the library's staff.

5. There frequently are specific tasks that, while within the capabilities of the library's staff, can best be handled by someone outside the library. The consultant is sometimes called on to carry out such tasks.

6. There may be a need for communication among a group of libraries, especially toward the goal of establishing common practices and standards. The consultant serves an especially valuable role as mediator in that communication and as a means of fostering standards.

7. There may be a need to transfer technology from one library to another or even from one country to another. The consultant is frequently called upon for advice concerning the feasibility and the means of doing so.

As I have said, there is nothing startling about the fact that these are reasons for calling on any consultant, but there are some aspects of special relevance to the context of library automation. Turning to the first role, library automation was, for many years, an issue of particularly acrimonious conflict within libraries—more universally so, probably, than any other major library decision. It was viewed as a threat to the library as an institution, and to its values; as a diversion of resources into an activity of uncertain, even dubious, value; as a dehumanizing, mechanistic force that would pervert librarianship and degrade the position of the librarian. But, on the other hand, it was viewed as an essential tool if costs of library operation were to be controlled, as a new capability that would vastly expand the services provided by the library, and as a means of effecting greater interaction among libraries and creating cooperative networks. The fact is that neither view, taken in its extreme form, was a valid picture; automation is neither Frankenstein's monster nor a panacea for all library ills. But the fact also is that both views would be held by members of the staffs of libraries, with little basis for reconciliation.
Even today, when automation has been accepted and is being used in day-to-day operation by libraries of all kinds and sizes, the issues of internal conflict are a primary reason that consultants are called on. The choices among cataloging systems, circulation control systems, and the like have frequently been more political than technical decisions, but the consultant is called on in the hope that technical evaluations will resolve the political differences.

Can the consultant really help in this kind of situation? It is hard to say, since it depends upon both the nature of the internal conflict and the perceptivity of the consultant. Usually, in fact, the situation is not presented, or perhaps even recognized, as one of internal conflict. Instead, it is presented as a purely technical problem, and it takes experience and sensitivity on the part of the consultant to see what the situation really is. The difficulties are compounded by the fact that, in any decision of real substance, technical reasons can rationally be found to support any of the valid alternatives. Thus, whatever the consultant may advise, the ultimate decision will still be based on the political imperatives.

The second role of the consultant—as facilitator of communication—has been and continues to be important in library automation. The technologist’s misconceptions of the library and its requirements are far greater than the librarian’s misunderstandings of the computer, but both represent real barriers to communication. The consultant with awareness can remove those barriers.

The third reason for calling on a consultant, the need for specific expertise, has been one of special significance in the area of library automation. In the early days of development, there were few people with knowledge of both librarianship and the computer and fewer still, if any, who were expert in both. It was therefore virtually impossible for each library facing automation decisions to have staff with the necessary expertise. Today, the situation is dramatically different. There is widespread knowledge of library automation, and large libraries at least have most of the range of requisite expertise. However, there are still lacunae and thus a real role for the consultant with valid expertise. Of course, to be effective in this role the consultant needs to develop close working relationships with others.

The fourth and fifth roles of the consultant are self-explanatory and do not seem to be especially significant with respect to library automation.

But the sixth role has been one of special significance to library automation. If libraries had continued to develop catalog data bases...
independently, as they did in the days before MARC format was established, the pace of progress would have been slowed, perhaps even brought to a halt, and the costs of implementation of library systems would have been prohibitive. Even now, however, the tendency is to diverge from commonly accepted standards. The consultant, by bringing knowledge of the broader national context to bear and by bringing to the decision experience with other libraries, helps to maintain commitment to the accepted standards.

Finally, in the international scene, the consultant has been an essential participant in helping various countries gain from the developments elsewhere. Usually such consultants function under the aegis of national or international bodies, rather than directly for individual libraries.

Kinds of Consultants

In general, consultants emphasizing library automation, just like those in other areas, are either independent or members of consultant firms, but there are three types of consultant firms especially significant in library automation: application firms, software firms and hardware firms. Individuals may be drawn from academe or from other libraries, as well as from full-time practice as a professional consultant. The choice of an individual is made primarily on the basis of reputation, publications, or known experience with the problems faced by the library.

Kinds of Arrangements

Even at the risk of stating the obvious, it is worthwhile identifying the kinds of arrangements under which consulting may be done.

The first, most evident and probably most common arrangement is that for short-term advice. Typically, the consultant is asked to spend a brief period, one or two days to perhaps a week, in on-site discussion and review. During that time, concern of the library, its management and its staff will be identified; data will be gathered about present operations and possible alternatives. The consultant is likely to do some further analysis and data gathering off-site. A report will then be prepared and submitted either formally or informally; a fee will be charged based on a daily rate plus expenses. The needs for advice are likely to be ill-defined, and the major role of the consultant may well be simply to identify the problems rather than advise on solutions.

The second arrangement is the long-term retainer, under which the consultant is available on a continuing basis for advice and review. The
value to the library is the consultant's increased degree of responsibility and more intimate knowledge of the library's needs; the value to the consultant is the guaranteed level of income for the period of the retainer contract.

The third arrangement is the contract for performance of a specific task. The tasks will range over the full set of developmental stages which will be discussed later, but the crucial point is that the library has been able to identify the task with sufficient specificity to warrant a contract—or at least that the library thinks it has. A "request for proposal" will be issued; a number of possible consultant contractors will be identified and asked to bid; a formal evaluation and selection will be made; a contract will then be negotiated. All of that sounds very proper, well controlled and consistent with a good management approach to contracting for services. In principle, it results in clearly defined contractual responsibility.

Appealing though the third arrangement appears to be, it should be used only with great care. It is important to recognize the difference between the essentially advisory role of the consultant and the performance role of a contractor. The problem lies in the extent to which the task can be defined specifically with adequate recognition of its impact on other aspects of the library's operation. If advice is what really is needed, a contract calling for specified performance of the wrong task may turn out to be the worst approach.

Developmental Analysis

The various roles for consultants, kinds of arrangements, and types of consultants can perhaps best be viewed in the context of the successive stages in the development and implementation of automated systems:

1. the decision to automate—the feasibility study,
2. determination of requirements,
3. systems analysis and design of alternatives,
4. evaluation and selection,
5. implementation,
6. training and organizational change, and
7. continuing review and evaluation.

Feasibility Study

This stage is one in which the consultant is likely to be of special value, especially the individual consultant on a short-term contract. It is
a stage in which objectivity and the ability to evaluate the potentials is essential. The consultant with a great deal of experience can provide an evaluation of the readiness of the library for automation, of the possible savings in operating costs, of the available computing facilities, and of the costs of implementation. The hours or days required to provide this kind of consultation are likely to be within the capacity of the individual.

The consultant can help at this stage by providing guidance to the library’s own team, including identifying issues to be considered, providing forms and procedures to be followed, and training key library staff. Review of the evaluations by library staff is another useful role; it permits the library to get maximum value from the consultant’s experience and knowledge.

**Determination of Requirements**

The second stage in development—determination of requirements—involves a major investment of time and manpower. The individual consultant, unless under essentially a full-time arrangement, is unlikely to be able to provide more than guidance. However, a consultant firm can bring in a team of analysts—survey staff, accounting staff and procedure analysts. They can interview staff, administration and patrons. They can compare the library’s data with data from other institutions.

**Systems Analysis and Design**

The purpose of this stage is to translate the requirements into systems that will meet them. It is crucial that a suitable set of alternatives be defined. The alternative of primary importance is simply upgrading of the present operation. It provides a benchmark; the data about its costs and effectiveness are the most reliable, since they are based on actual experience in the library rather than hypothetical or analogous experience. It is the least risk alternative since there is little or no investment required. It may be the most acceptable alternative as far as staff or patrons are concerned, since it involves the least change and disruption. Given this, it would seem desirable that the consultant be one known to be sympathetic to this alternative, rather than one who is simply an “automation expert.” On the other hand, many have claimed that a focus on mere improvement of the present system is destructive of creative design, that it preconditions the approaches taken to automation.

The design of other alternatives does require special creativity, an ability to see how combinations of equipment and procedures can be
arranged and rearranged to meet the requirements. It requires knowledge of the full range of equipment, without *a priori* bias or commitment to any one choice.

**Evaluation and Selection**

The choice among the alternatives is the next stage in the process. There are a number of consultant companies that specialize in providing evaluation services. Some of them use highly formalized evaluation tools such as simulations, bench-mark tests and computerized weighting of criteria. These have the value of making the decision as objective as possible. In fact, in some procurement contexts such objectivity may be a legal requirement, and the use of a consultant helps assure that it is met by removing at least part of the decision from the library's staff. Beyond that, some decisions cannot be made without the use of tools like simulations or bench-mark tests. For example, OCLC used a simulation program in selection of its computer system because there was no other way in which the effects of varying workloads on on-line operations could be evaluated.

On the other hand, formalized methods of evaluation, valuable though they can be, should be used with exceptional caution. They may give a spurious picture of quantitative ranking that totally fails to recognize the qualitative realities. For example, a computerized weighting of criteria requires that subjective judgments be translated into quantitative form and then weighted by *a priori* identified measures of relative importance. If used without *ex post facto* review, what appeared initially to be rational weights may result in totally irrational decisions. The consultant in this area should therefore be regarded exactly as that—as a consultant—and should be given sufficient flexibility in the evaluation decision to permit the results of formal evaluations to be placed in perspective.

**Implementation**

Is this a stage with a significant role for an automation consultant? On the surface, it would appear to be almost a contradiction in terms. The contrast, of course, is between the essentially advisory role of the consultant and the operational role of a contractor. To provide a complete picture, however, it is worthwhile summarizing the possibilities, taking them in the broadest interpretation.

There is a clear value and role for a consultant as monitor and advisor during implementation. Frequently, problems that the library or contractor might ignore or even conceal may be seen from the objective standpoint of the consultant.
In contrast, there are likely to be specific tasks in implementation that can best be handled by a contractor. For example, file conversion is typically a task requiring a large but temporary staff; a contractor can provide qualified staff, training procedures for additional staff, effective quality control methods, and experience. Programming is a task which quite typically is assigned to a contractor. At times contractors have even been asked to take full responsibility for implementation—a "turnkey contract." (I must confess to a deep-seated distrust of turnkey contracts; they abdicate too much responsibility.)

Training and Organizational Change

There does appear to be a most important role for the automation consultant in this area. The needs are for a knowledge not only of good management but of the specific problems in dealing with the effects of a computer-based system. Training is likely to be especially important because of the need to learn new procedures as well as the use of equipment.

Beyond that, automation will frequently require administrative changes. The consultant with experience can identify the needs and advise on what changes would meet them.

Continuing Review and Evaluation

This is a much-neglected phase in implementation of automated systems, and one in which the consultant—particularly the independent consultant—can be of special value. By bringing objectivity and prior experience to this task, the consultant can identify problems in operation of automated systems before they become critical; he can identify means for correcting them which the staff might find difficult to recommend.

Functional Analysis

Computers can be applied to various functions in the library involving a diversity of problems (with potentially different values in use of a consultant). It is worth reviewing these functions to identify what the differences may be.

Management and Administration

This area is one which library automation has least affected. It may be that the size of the library, in comparison with other kinds of organizations, is too small to make automated systems worthwhile.
Furthermore, for many libraries the critical data processing needs (such as payroll accounting) are met by parent organizations, rather than by the library itself.

On the other hand, there are identifiable management problems in libraries for which automated systems would seem especially appropriate. Cost accounting, work-flow scheduling, balancing of staff, managing of the collection, allocating resources, preparing budgets—each of these is a critical problem for the library's management and each of them, in analogous form, has been aided by automation in industrial and commercial contexts. The size of a company in which such automated systems have been successfully used is not necessarily larger than a typical public or academic library.

A review of the literature in this functional area shows not only few applications, but even fewer that evidence the use of consultants. It is a surprising lack of interest, since this would seem to be an area in which consultants with experience in other management contexts could be of obvious use.

Selection, Ordering and Acquisition

Table 1 lists some of the consultant firms identified from the published literature which are involved with this functional area. Several of them are really in the business of marketing their own packaged systems (BATAB being the most widespread example).

Given the fact that packaged systems are readily available, it would seem wise to use individuals or consultant firms who do not have a preestablished bias toward one or another of the systems.

Serials Records

This was perhaps the first functional area in which computer processing was applied. In certain respects it seems to be a natural application, since it is so analogous to inventory control, with a relatively high percentage of the file active each month. Furthermore, the creation of union lists of serials would seem to be especially amenable to computer processing.

It is therefore somewhat surprising that there are few, if any, consultants that are clearly and specifically identified with this area of application. It may be that the crucial problems are subsumed under other areas of application—acquisitions or cataloging, in particular.

Cataloging

The choice of automated systems in this functional area has been
<table>
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<tr>
<th>Firm</th>
<th>Representative Clients</th>
<th>Function</th>
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<tbody>
<tr>
<td>Richard Abel and Co. (Portland, Ore.)</td>
<td>Anne Arundel Board of Education, Md.</td>
<td>To aid libraries in installing the Richard Abel and Co. mechanized approval program</td>
</tr>
<tr>
<td>IBM (White Plains, N.Y.)</td>
<td>Albuquerque Public Schools Processing Center, Rutgers University—CAPTAIN (Computer Aided Processing and Technical Access and Information Network)</td>
<td>Planned the automated system</td>
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<td></td>
<td>Texas Southern University Library, Simon Fraser University Library, B.C.</td>
<td>Planned with library staff, the acquisitions system</td>
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<td></td>
<td>Claremont College, Honnold Library, Calif.</td>
<td>Planned with the University Library, acquisitions system</td>
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<td></td>
<td>Derbyshire County Library, U.K.</td>
<td>System development was assisted by IBM systems engineers</td>
</tr>
<tr>
<td>Hitachi, Ltd. (Japan)</td>
<td>Gunma University Library, Japan</td>
<td>Conducted a case study of minicomputers in university libraries which led to the adoption of the computer processing system</td>
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<tr>
<td>Bruce Alper</td>
<td>Florida Atlantic University Library, Arizona State University Library</td>
<td>Designed LAIS (Library Acquisitions Information System)</td>
</tr>
<tr>
<td>Boeing Computer Services (BCS) (Seattle, Wash.)</td>
<td>Washington Library Network (WLN)</td>
<td>Technical design and development of the WLN bibliographic system module</td>
</tr>
<tr>
<td>Inforonics, Inc. (Maynard, Mass.)</td>
<td>New England Library Network (NELINET)</td>
<td>Designed and developed NELINET</td>
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<tr>
<td>Baker &amp; Taylor (BATAB)</td>
<td>Mississippi libraries, Atlanta Public Library, Denver Public Library, Hennepin County Library, Minn.</td>
<td>Offers continuing BATAB systems support to clients</td>
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<tr>
<td>Baker &amp; Taylor's Automated Buying system</td>
<td>Houston Public Library, Omaha Public Library, Monroe County Library System, Mich.</td>
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<td></td>
<td>Tampa Public Library, Tucson Public Library, Eastern Carolina University</td>
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TABLE 1. LIBRARY AUTOMATION CONSULTING AND SERVICES FIRMS: ACQUISITIONS
TABLE 1.—Continued

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<th>Firm</th>
<th>Representative Clients</th>
<th>Function</th>
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<tbody>
<tr>
<td>Baker &amp; Taylor (BATAB)</td>
<td>University of Louisville, Belknap Campus</td>
<td>Offers continuing BATAB systems support to clients</td>
</tr>
<tr>
<td>Baker &amp; Taylor’s Automated Buying system</td>
<td>University of New Hampshire, University of Texas at Dallas, University of Texas of the Permian Basin, Trinity University Library, Tex., Utah State University, Weber State College, Utah, York University, Ont., Illinois State Library, Utah State Library Commission, Atlanta Public Schools</td>
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<tr>
<td>Book and Periodicals, Ltd. (computer consulting firm)</td>
<td>Scarborough Public Library, Maine</td>
<td>Assisted in development of computer-operated systems</td>
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<tr>
<td>Auto-tronics Universal Corp. (electronics firm)</td>
<td>Jefferson County Public Library, Colo.</td>
<td>Programming and keypunching</td>
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<td>Jefferson County Bank of Lakewood, Colo.</td>
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<td>Computer time</td>
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<tr>
<td>Olson, Shultz and Flowers (accounting firm)</td>
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<td>Programming and printouts</td>
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<tr>
<td>Century Information Service (CIS) (software consulting firm)</td>
<td>Orange County Public Library, Calif. BIBLIOS (Book Inventory Building and Library) Information Oriented System)</td>
<td>Programming</td>
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both simplified and complicated by the existence of several competing national or regional cataloging services. The most frequent decision problem has been the choice between OCLC or RLIN (BALLOTS), with the Washington Library Network system and the Toronto system hovering in the wings. Commercial systems, without the subsidies that continue to make the not-for-profit services economic operations, face an increasingly difficult competitive situation. However, as the list of companies in Table 2 illustrates, there are sufficient opportunities in catalog production, especially using computer-output microforms (as contrasted with the use of on-line cataloging services), to support commercial operations. Each of them provides consulting services, in addition to contract production services.
TABLE 2. LIBRARY AUTOMATION CONSULTING AND SERVICES FIRMS: CATALOGING

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<tr>
<th>Firm</th>
<th>Representative Clients</th>
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<tr>
<td>Autographics, Inc.</td>
<td>West Virginia State Library</td>
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<tr>
<td>(Monterey Park, Calif.)</td>
<td>Baltimore County Public Library</td>
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<td></td>
<td>Enoch Pratt Free Library, Md.</td>
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<td></td>
<td>Salt Lake County Library System</td>
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<tr>
<td>Blackwell North America</td>
<td>University of Texas</td>
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<tr>
<td>(Portland, Ore.)</td>
<td></td>
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<tr>
<td>British Library Bibliographic Division</td>
<td>City University Library, London</td>
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<tr>
<td>(London)</td>
<td></td>
</tr>
<tr>
<td>(Williamsport, Pa.)</td>
<td>St. Louis County Library System</td>
</tr>
<tr>
<td></td>
<td>Brooklyn Public Library</td>
</tr>
<tr>
<td>Eurocom Bureau</td>
<td>Liverpool Polytechnics Library Service</td>
</tr>
<tr>
<td>(Manchester, England)</td>
<td></td>
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<tr>
<td>(Menlo Park, Calif.)</td>
<td></td>
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<tr>
<td>Inovan, Inc.</td>
<td>Kansas State Library</td>
</tr>
<tr>
<td>(Los Altos Hills, Calif.)</td>
<td>Arrowhead Library System, Minn.</td>
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<tr>
<td></td>
<td>Houston Public Library</td>
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<tr>
<td>Library Interface System</td>
<td></td>
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<tr>
<td>(Minnetonka, Minn.)</td>
<td></td>
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<tr>
<td>MARC Applied Research Co.</td>
<td>Hartfield Polytechnic Library</td>
</tr>
<tr>
<td>(Washington, D.C.)</td>
<td></td>
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<tr>
<td>Micrograph</td>
<td>Milperra College of Advanced Education</td>
</tr>
<tr>
<td>(Wadord, England)</td>
<td></td>
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<tr>
<td>MIS</td>
<td>Belgian Libraries and Documentation Centers</td>
</tr>
<tr>
<td>(Sydney, Australia)</td>
<td></td>
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<tr>
<td>Ordina Benelux</td>
<td>Lincoln University, Pa.</td>
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<tr>
<td></td>
<td>Clark County Library, Nev.</td>
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<td></td>
<td>Forsyth County Library, N.C.</td>
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<td></td>
<td>Palm Beach County Library, Fla.</td>
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<td></td>
<td>Hidalgo County Library, Tex.</td>
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<td></td>
<td>Cook County Library, Ill.</td>
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Are there special problems that call for the use of individual consultants? One can immediately be identified, and it has nothing to do with the choice between one or another of the national or regional services. It is the fact that the service represents only part—and it’s the smaller
part—of the library’s total cataloging system. Too often the decision has been made to opt for one or another service without clear analysis of why, of the library’s own objectives, of when the implementation should best be made, or of the effects on the library’s own internal processes.

It is the wider context, for the individual library, that should be of special value for use of the consultant—individual or corporate. The transfer of experience from one library to another, the availability of techniques for identifying needs and evaluating how they would be affected by the external services, the objective examination of the internal operations of the library, the evaluation of compatibility between national standards and local needs—all of these make the consultant especially valuable.

Circulation

Some of the companies presently making circulation control systems are:

CLSI (Newtonville, Massachusetts);
Dataphone (Dallas, Texas);
Gaylord (Syracuse, New York);
Plessey (Poole, England); and
System Control Company (San Jose, California).

Each of them, of course, provides consultant services focused on assistance to customers in installation of its system. The literature, however, does not clearly identify companies or individuals specializing in consultant services in this functional area, independent of the suppliers of systems.

In a sense, this lack of independent consultants is strange, since there are crucial problems faced by the library in the decision to automate circulation control as well as in the choice of a system. In particular, installation of an automated circulation system involves major investment in the creation of machine-readable book identification, an investment far greater overall than the cost of the hardware and software. Furthermore, the decision to install an automated circulation system ought to involve consideration of other functional areas—acquisition, cataloging and collection management—that have profound implications in the total library system design.

Reference

The explosion in the number and variety of data bases available through national services (SDC, Lockheed, BRS) has created a revolu-
tion in reference services, but aside from that fact, libraries have just begun to explore the use of automation in support of reference services.

Consultants can be of great value if they have an understanding of the potential for computers and microforms in areas of reference services, such as ready reference, community referral services, and local data base development.

The firms listed below are in the business of providing commercial searches, primarily utilizing the national on-line reference data base services. Each of them will, to one extent or another, provide consultant services as well.

Access to Information, Inc. (Santa Fe, N.M.)
Biological Information Service, Inc. (Riverside, Calif.)
Black Resources Information Coordination Services, Inc. (Tallahassee, Fla.)
FSU Search (Tallahassee, Fla.)
Chemical Data Center, Inc. (Columbus, Ohio)
Calspen On-line Information Services (Buffalo, N.Y.)
Documentation Associates (Santa Monica, Calif.)
Editec, Inc. (Chicago, Ill.)
Franklin Institute Research Laboratories (Philadelphia, Pa.)
General Electric Company, Library & Information Services (Philadelphia, Pa.)
Infomart (Santa Barbara, Calif., and Toronto, Ont.)
Inform (Minneapolis, Minn.)
Information Dynamics Corp. (Reading, Mass.)
Information Exchange Center (Atlanta, Ga.)
Information Unlimited (Berkeley, Calif.)
Information Resources (Toronto, Ont.)
Library Information Service (Honolulu, Hawaii)
Library Reports & Research Services, Inc. (Westminster, Colo.)
NASIC Search Service (Cambridge, Mass.)
Northeastern University Computer Services (Boston, Mass.)
Regional Information and Communication Exchange (Houston, Tex.)
Savage Information Services (Rancho Palos Verdes, Calif.)
Scientific & Technical Information Services, Inc. (Rochester, N.Y.)
Text Information Processing Services (Gainesville, Fla.)
Unesco Computerized Documentation Service (Paris)
University of North Carolina (Chapel Hill, N.C.)

Equipment Alternatives

The consultant should bring to the library a combination of
knowledge—of management, of library functions, and of equipment alternatives. There should be a basis of experience, in the last area especially, on which the consultant can provide a balanced evaluation. Too often, the consultant, like any other specialist, becomes committed to one alternative. It is therefore worth reviewing the identifiable alternatives, if only to see how they may differ in the consulting problems involved.

Computer Service Facilities
One decision frequently faced by the library, one that becomes virtually imposed upon the library and perforce upon the consultant, regards the computer service facility. The university has a computer; the county has a computer; the company has a computer. The library is asked (in fact, expected) to use it.

Rarely is the availability of such a facility, even if “free,” the proper basis on which to embark on an automation program. The consultant has special value as a means for placing the availability of a service facility in proper perspective within the total context.

Software Packages
There are and will be an increasing number of software packages tailored to library functional needs. The consultant has value as a means of evaluating them, especially in comparison with special development of tailored programs for the individual library.

Hardware/Software Packages
The best example of this alternative is the CLSI package for circulation control or the competitive Plessey system. Although there are relatively few of these packages, they provide a total answer—a “turnkey” operation—for the function they are designed to handle. Evaluation of them is complicated by the fact that other alternatives (except directly competitive packages) are extremely difficult to analyze. The turnkey package involves relatively well-defined costs and functional capabilities. Data can be obtained from other installations of the package with which to evaluate reliability, problems in operation, difficulties in implementation, etc. That is difficult to do even for the software package in which the hardware configuration may be different, and it is impossible to do with a tailored system.

The consultant may be able to provide a relatively informed evaluation of the costs and effectiveness of the alternatives.
Minicomputers are widely available today, of a scale in costs and capabilities completely appropriate to the internal operating needs of almost any size of library. They are reliable, free-standing, easy to operate and maintain, and to the right scale in every respect.

But a revolution is occurring as the computer is becoming a consumable product. It is the microcomputer that will really revolutionize library data processing—if it is properly handled. An APPLE (a product of Apple Computers, Inc.) or a TRS-80 (a product of Radio Shack) or similar competitive units are now available for under $1000 and, with full-scale capabilities for relatively large file storage, for under $8000. Software packages are being developed at a pace that boggles the mind, as individual hobbyists play with their capabilities. Since the experience anyone now has with this kind of equipment is very limited, it will be some time before consultants will be able to give advice much better than the library's own staff or the published literature. However, certainly (within the 1980-81 year) that experience will be widespread. And the consultant's advice will be of even greater value than ever before, since the array of alternatives will be vastly increased and the complexity of effect upon the library deeper.

Summary

In this paper, I have tried to identify various aspects of the use of consultants in library automation. I have identified various kinds of consultants, various roles for them, various contexts or stages in development in which they may be useful, various functional areas in the library in which consultants may have different values, various alternatives that may affect how much help the consultant can give. But, it is all pretty much philosophical and descriptive. There are few data available on which to base a more informative evaluation of consultants. As a result, this represents a personal commentary, based on my own experience, but it should give the reader a picture against which to compare his own experience and limitations.

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