The Economics of Book Catalog Production

In the Proceedings of the 1966 Clinic on Library Applications of Data Processing appeared the article "Computer Applications to Book Catalogs and Library Systems." In that article, Donald Stromberg writes, "Advancements in technology will make [book catalog] service economical on a wide basis." Today, I speak of the book catalog not as a tool of the future coming into being, but of its path to aphelion and its return to Coventry. Book catalogs were on the scene prior to the appearance of card catalogs, and we now see two major expressions of bibliographic information pushing the printed book catalog out of the important position it played in the 1960s and early 1970s. First, the book catalog-like medium, the microform catalog, is currently forcing the printed catalog out of libraries, and some observers are even predicting that the microform catalog, or, more precisely, the Computer Output Microfilm (COM) catalog, will completely replace the printed catalog within the next few years. Second, the on-line catalog as a tool for the library user (as distinct from the library staff) will have a heavy impact on the continued use of book catalogs as the on-line terminal is moved out of the back room and into the public service areas.

Put into a historical context, we see that printed book catalogs predated card catalogs, were largely replaced by card catalogs in the twentieth century, returned in computer-produced form to replace card catalogs, and are likely to be replaced by COM and on-line catalogs for sound economic and...
technical reasons. The purpose of this paper will therefore be to explore this progression—book to card to book to COM catalog—and the factors which make the sequence a not-unreasonable one. The emphasis will be on the economics of the computerized book catalog.

Before proceeding, some caveats must be entered. There will be no specific costs given, such as "It costs $0.98 to produce a page of a book in photocomposed format, but $0.76 in line-printer multilith format." Detailed costs are meaningless without a specific context. For the same reason, I will not make detailed comparative cost analyses. If you are interested in these kinds of figures, commercial vendors will be glad to furnish quotations based on their price lists and your local requirements, and the literature already includes firsthand reports of costs in the production of printed book catalogs. Other speakers at this clinic will discuss the conversion of cataloging data to machine-readable form and the use and characteristics of nonprint output media. It is our hope that these papers will combine to provide a single, complex yet coherent whole.

**THE DYNAMIC VARIABLES**

Let us begin the analysis of book catalog costs by establishing the framework within which the book catalog occurs. Irrespective of format, the catalog performs at least two fundamental functions: (1) it organizes a storehouse of materials into a collection of materials, and (2) it provides access to these materials by identifying them in a variety of ways through some physical display medium. The following elements, which I will call "dynamic variables," apply to a functional definition and economic analysis of the catalog:

1. the size of the collection, and the frequency of changes (e.g., how much is added and weeded each year);
2. the rules for identifying and organizing the items, in the collection, and the number of access points to be provided to these items;
3. the media which are available for the physical display of the records expressing the contents of the collection;
4. the throughput function, i.e. the staff, equipment and production processes which are required and/or available for the creation of the artifacts through which the records will be displayed (or made available for display), including the number of sites at which the contents of the collection are to be displayed (i.e. in the central library, in branches, in every stack, etc.).

The costs of book catalog production, and the use and appropriateness of the automated book catalog, depend on these dynamic variables.
THE PRE-CARD CATALOG BOOK CATALOG

Prior to the ubiquity of the Ohio College Library Center (OCLC) card, and prior even to the universal use of Library of Congress (LC) cards, many libraries had typeset printed book catalogs. As the twentieth century approached, these catalogs began to fade into extinction, but they were important tools in nineteenth-century libraries. In terms of the dynamic variables listed earlier, there were several factors operative at the time. Collections were relatively small and stable; publishing output was low and new acquisitions were judiciously selected. The book catalog was economically attractive because the file of data it contained was not particularly dynamic; the technology for production had been well established; the book as a display medium had been acceptable for decades; and the short-title index type of listing found in many of the book catalogs of the day did not conflict with cataloging requirements because national standards had not yet been developed. (The original American Library Association cataloging rules did not appear until 1908.3) Furthermore, this situation was prior to the establishment of the interlibrary loan network, which developed in the twentieth century. If a patron needed a book held by another library, he or she had to travel to that library to use it. In effect, the printed book catalog served as the interlibrary loan device: library B would have a copy of library A’s catalog, and B’s user could, after consulting A’s catalog, go to library A to use the material desired.

The critical economic factors thus were: (1) printing was an infrequent cost because the library’s collections were relatively static; (2) printing was (and is) a relatively cheap process for additional copies, although expensive for the first copy; and (3) the method of display in the old printed book catalog was up to the individual library, and for many the data were packed into line entries somewhat similar to today’s telephone directories. Because there was no centralized source for standardized cataloging data toward the turn of the century, each library was on its own and did not have any significant economic incentive to go to a specific kind of physical display medium.

THE CARD CATALOG AND THE DECLINE OF THE BOOK CATALOG

Introduction of the Library of Congress catalog card service, coupled with more extensive collecting by libraries and the overwhelming costs of setting type for large and volatile book catalogs, served as the basis for the abandonment of the book catalog and its replacement by the card catalog in almost all of America’s general libraries. Centrally disseminated standardized card sets removed a huge production burden from the nation’s libraries. The
letterpress book catalog was an inadequate medium compared to the cost-effective use of LC cards. Libraries around the country, regardless of past catalog media, found the card catalog irresistible. Let us examine the success of the card catalog in light of the dynamic variables suggested earlier. First, the twentieth century brought a wave of library growth as a result of increased publishing activity. Consequently, the catalog form had to be appropriate for the increased rates of change and growth. The letterpress book catalog was obviously uneconomical, because either new cumulations would have to be reset or noncumulative supplements—a burden to the user—would be necessary. The card catalog, on the other hand, allowed for instant updating and cumulation insofar as staff, card stock and (by this time) typewriters were available. (Actually, typewriters were a luxury for many libraries, as witnessed by the handwritten cards still to be found in many libraries.) If LC card sets were purchased, however, only filing would be necessary.

The increase in the number and size of libraries made it easier for library users to have their information needs satisfied at their own library. For this and the other reasons cited, the letterpress book catalog which was printed and made available to many libraries and private purchasers declined and was almost completely supplanted by LC-ALA rule-based card catalogs.

**THE RETURN AND RISE OF THE BOOK CATALOG**

The return of the book catalog was a two-stage process. First, under the brilliant and indefatigable leadership of its then-chief of the Card Division, John W. Cronin, LC published the first and greatest of its book catalogs, the *Library of Congress Catalog of Printed Cards*. Offset printing technology was applied to the problem of disseminating many copies of a whole catalog of data, as distinct from distributing cards for a single catalog record. The book catalog was now economically feasible because of improvements in offset technology. A 167-volume catalog representing the total of LC's collection for 1897-1941 was reproduced by photographing cards and producing offset page plates. Analyzing this book catalog in terms of the dynamic variables, we see the critical elements which changed. Typesetting was replaced by shingling and photo-offset—i.e. an expensive process was replaced by a relatively inexpensive process. Thousands of copies of this catalog have been sold to libraries all over the world. Its distribution in carload shipments to the same libraries is, of course, inconceivable in card form.

In light of the foregoing discussion, we can now make a generalization with respect to one of the dynamic variables. If there is to be a large number of sites for a given catalog, that catalog normally will not be in the form of cards. In the 1940s the photo-offset process enabled the book catalog to be established as a major solution to the multi-site location of cataloging data.
We turn now to the major topic of this paper: the computerized book catalog. We as users of the National Union Catalog (NUC) are aware that its reaccumulation will continue to be a problem for LC until all records are part of a machine-readable data base. COMARC (Cooperative MARC) is a project recently begun which is working on this problem. As a measure of this problem, searchers must look in four separate annual NUCs, three quarterlies, and three monthlies during the period immediately prior to the publication of a quinquennial. Economically speaking, this is a disaster for all concerned, including the staff who must resingle all of the cards to produce each of the various cumulations, the most painful of which is the quinquennial.

It is now possible for the entire reaccumulation process to take place in the confines of the computer. Records can be reaccumulated by computer at any time, a gross departure from the laborious and expensive process of manual reaccumulation—the shingling of cards for offset printing.

Let us explore the changes which took place in the dynamic variables which had a direct bearing on the phoenix-like reemergence of the book catalog in the 1950s and 1960s. The major factor in this development is the key assistance of the computer.

At first, because of computer limitations, the book catalog could only be produced economically in non-research library dimensions. In other words, the size of research library collections and the rate of increase of holdings in the post-World War II period were both too great for existing computer technology. As recently as 1967 it was considered unfeasible to produce book catalogs containing more than 100,000 entries. How it became more feasible and less feasible in the course of a decade will be discussed further. However, many public library collections, especially the medium-sized systems and federations, were within the 100,000-title range in the 1960s.

**THE ECONOMICS OF COMPUTER-BASED BOOK CATALOG PRODUCTION**

As a result of changes in the dynamic variables, the computer-based book catalog became the ideal catalog representation for libraries as diverse as the University of California system, the research and branch libraries of the New York Public Library (NYPL), and countless smaller libraries.

**The Size of the Collection and Its Frequency of Change**

The size of the collection and the frequency of change prompted a turn toward the book catalog. The public libraries which received so much money from Library Services and Construction Act (LSCA) legislation during the 1960s found that reproduction and dissemination of cards neither met service goals nor was cost-effective. For example, a system which might buy twelve
copies for twelve of its fifteen branches would have to create, arrange and file at least twelve identical sets of cards. Furthermore, users at the other three branches would have no catalog access to that particular title; these branches would not have cards for that title because they would not hold the book.

The system concept of libraries found a natural helper in the book catalog. By printing the entry and tracings for a title in the book catalog and indicating which branches held it, the need for the twelve sets of cards in the example was eliminated, as well as the costs of producing the cards and of arranging and filing them at twelve separate locations. Additionally, service was substantially improved because the patrons of the three branches, who formerly would have had no access to the book, could now use the system catalog and gain access to the total holdings of the system. Better service, i.e. access to the system’s total collection, is purchased at a cost usually below the manual catalog costs for multi-branch libraries. This fact readily accounts for multi-branch institutions’ change to the book catalog.

Computer technology made this type of catalog possible. The computer has the ability to take large files of data and reorganize them so that additions to those files can always be integrated or accumulated. LC’s problem with NUC is that reaccumulation involves the manual reshingling of cards. Typically, the public library system with 60,000 titles would find it hopeless to reshuffle manually the approximately 160,000 cards for those entries in order to integrate the additional 16,000 cards representing one year’s acquisition of 6,000 titles.

A significant development which occurred in computer technology was the passage from second-generation to third-generation equipment. Third-generation equipment altered the first dynamic variable—collection size and frequency of change—by making possible the creation of book catalogs of seemingly unlimited size. Because of this equipment, 100,000 titles ceased to be an upper limit to the size of a collection which could be represented by a book catalog. Computers of the IBM/360 class made it possible to store, manipulate and sort huge quantities of data within a time and cost framework which had not been practicable with second-generation equipment. Furthermore, advances in electronic photocomposition made possible the use of multiple type fonts and type sizes, thus permitting attractive and compact pages for the display of cataloging data.

The combination of these technological advances therefore enabled reaccumulation of large quantities of cataloging data in a timely and attractive fashion, and also enabled what was not practical previously: the inclusion of the holdings of all service outlets at every service outlet.

Some of the more conspicuous difficulties with the printed book catalog are: (1) the problem of what to do for patrons during periods between printings; (2) the significant time lag between the time the computer processes the data and the quantities of printed and bound book catalogs are returned
from the printers (three weeks to several months, depending on the size of the catalog and the number of copies); and (3) the cost of the paper on which the catalog is printed. Even during the heyday of the printed book catalog, it seemed wasteful to discard outdated supplements and reaccumulations. Present paper costs have exacerbated this problem.

Rules for Organization and Access Points

The second dynamic variable, i.e. the organization of the cataloging information and the access points, has not been greatly affected by the change from card to book catalog. The cataloging rules followed were the same and the number of access points was probably increased slightly. In divided book catalogs, certain entries appear which would not appear in a dictionary catalog, e.g., subject entries which duplicate title or author entries. The more complex issue which had to be addressed, however, was the arrangement of catalog entries. The computer is at its best and at its most ignorant in its literalness. Traditional filing in card catalogs involves exceptions and special routines for special entries. Even the abridged ALA filing rules is a book-length document.4 It is virtually impossible, if not totally uneconomical, to try to get the computer to duplicate the traditional filing rules followed in manually maintained card catalogs. On the other hand, large catalogs organized by the IBM sort package would violate many important library cataloging principles, such as the disregard of initial articles for filing purposes; consequently, the adaptations are interesting. One library took the approach of creating filing forms for every entry. The net effect was, for example, the appearance of an entry in the catalog in the form “1984,” but filed as if it were “Nineteen eighty-four” through the cataloger’s input of the preferred filing form. (Computers can automatically create most of the filing forms, but for problems like 1984, the cataloger must submit a substitute which overrides the computer-generated form.) This capability is one key element of the NYPL authority control system. The Library of Congress represents another point of view in its eighth edition of subject headings. Rather than manually constructing filing forms for the difficult cases or having the computer create them by comparisons of entries with elaborate tables, LC chose to simplify the rules to adhere more closely to IBM’s filing routines. In LC practice, numbers are filed in small-to-large order, regardless of whether they represent quantities, dates or other numeric information.

Other than by filing, the book catalog is not especially affected by the organization of data and the number of access points. It is easier and cheaper to add and change access points in a computer-generated book catalog than in a manually created and maintained card catalog. Unit cards have to be created, handled in some way to indicate access point, and filed—a great deal of work, and one of the reasons underlying the parsimony which runs throughout descriptive and subject cataloging practices. With book
catalogs, authority changes are easy because the entire catalog is reprinted and whole files can be maintained automatically. This is virtually impossible with the card catalog except by using guide cards, an inelegant approach.

**The Display Medium**

The third dynamic variable identified was the display medium. Each display medium has its own unique strengths and weaknesses, some theoretical and others practical. For example, card catalogs are theoretically more up to date than book catalogs because the card catalog is continuously updated, while the book catalog is current only to the moment input ceased for the most recently printed volume(s). It is safe to assume that with a bimonthly printing process, the catalog is at least eleven to thirteen weeks out of date. In reality, one large research library was recently two years behind in filing subject cards, and many other libraries are regularly behind in filing. Although in principle the book catalog should be much less current than the card catalog, in practice it is frequently more current. More important, economic considerations make the outdated-ness of the book catalog acceptable because of the elimination of the time-consuming and expensive process of arranging, filing and revising cards for new titles. At libraries as large as LC, arranging and filing are actually separate, full-time jobs! Of course, computerized arrangement and printing in the book catalog eliminate these card-related functions and can result in substantial savings.

The cumulation process is a display problem, and as such is perhaps the most differently treated variable of book catalog production. In his article, "Optimization of Publication Schedules for an Automated Book Catalog," Michael Malinconico provides an analysis of and formulas for establishing publication schedules. The drawback of the publication process mentioned earlier—that is, that volatile files regularly render expensive printed catalog supplements useless—creates a cost predicament which, at best, is a compromise optimized according to the Malinconico formulas. For example, the files of NYPL's branch system undergo continuous reaccumulation, a process which involves cumulation of all entries for one-sixth of the alphabet on a bimonthly basis, and a bimonthly cumulative supplement for everything not included in extant reaccumulations. Adding 35,000 titles per year, as the NYPL branch system does, necessitates this more elaborate process, with the result that every 2 months, more than 300 copies of 6 or more volumes become obsolete and are discarded.

For smaller collections, which have fewer additions, optimization is a seemingly simpler process. The individual library can weigh the cost and service elements of the publication process to determine a balance satisfactory for its unique circumstances. If 6,000 titles are added each year, it would seem extravagant to have monthly photocomposed and printed cumulative
supplements, because there would be only 500 new titles added. For this reason, the juvenile catalog at NYPL follows a publication cycle totally different from the aforementioned branch adult catalog. The complete reaccumulation of the entries in the basic volumes and supplements should also involve the balancing of service and cost considerations. Many reaccumulate everything annually; others do so irregularly.

Assuming that the library has adequate financial resources, computer technology allows decisions about cumulation and supplementation to be wholly discretionary. Because of the costs and slowness of the printing process, however, the printed book catalog again faces diminution, and perhaps extinction, as a catalog display medium. The advent of COM and the letterpress-quality photocomposed microfilm soon to be implemented are factors which, in combination with the expense and slowness of the printing process, are prompting predictions of doom for the printed book catalog.

I would like to mention two problems with the computerized microform catalog which moderate any positive feelings I have about it. First, there is the capitalization of the microform equipment, a problem serious enough to have kept us from installing readers in NYPL’s eighty-two branches. Although this is a one-time cost which can be amortized over a period of several years, it remains a significant problem. The second (and far more serious) problem is the state of the art of the display devices. There is no comparison between the quality of the printed page and that of the display of today’s microform viewers. In all other respects, the microform catalog is superior to the book catalog.

If the book catalog is to maintain a level of service at least comparable to that of the card catalog, there must be sufficient copies of the book catalog to insure that the user has the same ease of access to the record in the book catalog as in the card catalog. We have regressed if the reader frequently must wait to use the desired volume of the catalog. Local analysis of the size of the card catalog and the number of users will determine the number of copies needed to replace the card catalog.

Before considering the costs of the elements comprising the actual book catalog itself (paper, binding, etc.), the quantity to be produced must be considered. Because the book catalog is reproducible, extra copies of the catalog can give net increases in the quality of service. For example, placing a copy of the catalog in locations such as bookstacks, circulation desks, community centers, schools, and dormitories brings the catalog to the library user, rather than requiring the user to go to the traditional single-site catalog. Requiring users to “go to the mountain” is at least an inconvenience, and an effective deterrent to use at worst. Additional copies provide better service for library staff, as well. Reference librarians, catalogers and other staff who have
the catalog at their fingertips save the time of a walk to the catalog to find the
information they need. The catalog is more likely to be used if it is near at
hand, and may not be if its use requires extra time and effort.

Costs can be defrayed by selling copies of the catalog. Of course, the price
of the volumes for sale must include overhead and all indirect costs of sales, as
well as the actual cost of printing the added copies. I believe it is nearly
impossible to recoup cataloging, conversion, and data processing costs (not
to mention the research and development costs) through the sale of catalogs.

Other factors affecting the cost of printing entries in the book catalog are
the decisions about where to truncate the data appearing with added entries
and whether to print tracings with the main entry and/or added entries. Because we are no longer dealing with computerized catalog cards, these
options are real. For cards, the duplication process usually involves some
form of one-to-one copying of the unit entry by xerography, offset, etc. Given
the fact that individual physical entries in a book catalog are constructed for
each issue, one may choose—assuming the software permits—between the
conflicting factors of increased printing costs and the added information
which might benefit the catalog user. I have found that people who are
experienced in the use of the card catalog want the full unit entry for each
traced occurrence in the book catalog. I do not, however, know of any studies
which actually have dealt with the need for full information. As a library
user, I know that seeing all of the subject headings has often aided me in
determining the utility of a given citation. Printing the tracings and truncating
the added entries are two costs which can be controlled by the librarian.

Display costs are also affected by the density of entries on a page and the
size of type used for printing. The use of photocomposed 6- and 7-point type
will yield more data per page and offer greater legibility than the line-
printer/offset output, which has no proportional spacing and only one size of
type font.

Finally, the artifact itself has different variables. For example, the
University of California Union Catalog Supplement (UCUCS) is an archival-
quality printed and bound catalog. Nobody will soon be discarding the
approximately 50 volumes which contain 750,000 entries. On the other hand,
the variation in quality and stock for supplements to other catalogs is wide; I
have seen mimeographed and staple-bound supplements. Many libraries find
the best blend to be a plastic-impregnated paper cover (one brand name is
Kivar) for the annual volumes, and a cheaper grade of paper, e.g., sulphite,
for the supplements. Kivar is washable and largely resumes its shape when
bent or wrinkled. A well-produced, perfect-bound, Kivar-covered volume
will have all the endurance needed for even the most heavily used book
catalogs, assuming that these volumes (unlike UCUCS) will be replaced after
a year or two.
One further digression about sales might be noted in passing. The NYPL Research Libraries data base and book catalog system served as the basis for creating camera-ready copy for specific topical catalogs printed and sold by G.K. Hall. Usually a library cannot expect any significant income from the sale of its book catalog unless it is a national library.

The Throughput Process

As far as the economics of the book catalog is concerned, the throughput process is where the greatest variation in cost takes place. Gorman deals elsewhere in this volume with the cost of the conversion of the catalog record into machine-readable form and with the wide variety of methods and technologies available for that process.

In relation to the economics of book cataloging, it must be noted that the reason the conversion process is the most expensive (excepting, of course, the cataloger's labor) is that it is the most labor-intensive one. There must be keyboarding, and there usually is some kind of review, revision, or proofreading, depending on the method of conversion. Both hardware and people are required for this process, but these costs vary, depending again on the quantity and size of the records to be converted, the device used, and the degree of accuracy required. Some libraries contract out the conversion and computer processing, others do it all themselves, and still others have a mix of some work done in-house, and some outside the library.

Leaving aside the question of the quality of the labor and mistakes in design, software, and hardware selection, there remains a cost-quality relationship in the various kinds of catalogs. For example, a book catalog system such as NYPL's has in its design bibliographical or catalog control functions which usually are not found in other automated cataloging systems. Of course, both software and data processing costs of such a system are increased because of the added computer files which must be maintained and the increased CPU time required for manipulating and comparing the data in these various files. It should be noted that some of these costs are offset by significant savings in labor-intensive areas of searching and cataloging.

In other systems, data processing costs can be held down by the use of simplified procedures, filing rules, etc. All of the cataloging is done off-line, and the computer becomes more or less a catalog-printing device with minimized bibliographical control functions.

In selecting and evaluating book catalog costs, one must find the mean which is satisfactory between these different values. One should bear in mind that better quality (or in a less judgmental way, greater elaboration of detail and flexibility of operation) almost always involves greater cost. Unfortunately, the converse does not hold true: great expenditures do not necessarily buy quality.
A SPECIFIC BOOK CATALOG PROJECT

The Hennepin County (Minnesota) Library (HCL), my former employer, has had an extensive automation program. I will review some of the specific cost-benefit strategies in the production of the HCL book catalog.

There were essentially three different elements affecting the economics of HCL's decision to convert to the book catalog from the card catalog:

1. HCL was growing rapidly; a projected ten to fifteen new branches were to be opened in a 20-year period, most of them during the earlier years.
2. HCL had a full-time systems analyst and a full-time programmer, as well as access to the county's more than adequate computer (originally two 360/40 models and presently a 370/158). Furthermore, HCL management shared the belief that a complex set of MARC-based bibliographical programs developed at one institution could be transferred to and used at Hennepin with a minimum of out-of-pocket research and development cost.
3. The Hennepin County and Library boards were committed to responsible management practices and were willing to make substantial investments in order to achieve long-range and, in effect, deferred savings.

It actually worked out as follows. Several samples were made of arranging, filing and revision costs in existing branches and for the first of the new branch catalogs being created. Overall, it was estimated that it cost a little more than five cents to arrange, file and revise each catalog card. On the basis of this, a projection was made of the estimated cost for creating catalogs for new branches and maintaining existing ones for the coming ten years. According to our analysis it would cost $100,000 more to start new card catalogs and maintain the existing ones than to convert the entire shelflist and all new records to the MARC format and subsequently produce book catalogs. The largest outlay was the one-time cost of retrospective conversion, especially because it was based on getting virtually clean records. This meant that every printout would be proofread and that no data would be automatically accepted.

With respect to the software transfer, details of the use of the UCUCS and NYPL software have been provided elsewhere. Omitted from the other accounts, however, was the fact that HCL, with its small data base in comparison to the combined NYPL catalog output, negotiated photocomposition, printing and binding costs identical to those received by NYPL and in effect based on NYPL's volume. This meant that in 1972, HCL paid approximately $0.70 per photocomposed page while catalogs for other libraries were being produced at prices ranging from three to six dollars per
page—not unreasonable prices either. In terms of mistakes, the projected printing and binding costs were the worst estimates. Hardbound and sewn catalogs had been planned and the cost of them had been greatly underestimated. The final printing and binding charges for the Kivar perfect-bound, 5-volume set were just covered by the printing budget, and were covered because of NYPL's volume. Thanks to the printer's quality of binding, these softbound volumes provided the same or better service than the buckram ones would have. Because of their colorfulness and general appearance, I believe they seemed more approachable to the reader than a set of casebound tomes would have.

Some particular items which might be of interest regarding the planning and execution of the original Hennepin County Library book catalogs follow.

1. As with every automation project, almost all but the last date given was blown. Unlike many, the initial cost estimates were not exceeded.

2. Input costs were reduced by hiring keyboarders to work a second shift. This meant that fewer MTSTs, the conversion devices, had to be leased and that the output capacity was virtually doubled at no extra hardware cost. Library school students and graduates, all of whom had taken at least one cataloging course, were paid at intermediate clerk salaries to do the proofreading. Incidentally, the book catalog editing unit served as a valuable recruiting ground for HCL's professional openings and produced a quality of proofreading which would have been difficult to achieve with nonprofessionals. Conversion costs were further reduced and the quality increased by using the typists who regularly typed catalog cards and pockets. They were already familiar with the complexities of bibliographic records and did conversion keyboarding as part of their week's activity. One reason the typewriter MTST was selected was that typists, who are essentially trained to work with alphabetic data, would generally perform better than keypunchers who worked primarily with numeric data. The combination of these factors tended to hold down conversion costs for the particular strategy employed.

3. As to the display medium variable, we plunged. We printed 600 basic sets, 100 of which we over-optimistically thought we could sell. The branches were encouraged to have as many sets of the catalog as they thought they could reasonably use. It is interesting to note that photocopying of book catalog pages at the library's expense was encouraged to avoid ripped-out pages and to permit, in effect, the minibibliographies under some headings to be used in different contexts and not just to locate books in HCL's collection.

Overall library service was revolutionized at Hennepin. The reader at the smallest reading center was given catalog access to 1 million books and
100,000 titles; before that, he or she was only given cataloging information pertaining to 3,000 books. The most important change other than the creation of the comprehensive book catalog was the creation of a request/reserve/delivery system. A truck and driver went daily to the thirteen largest branches and searched their shelves for the previous day's reserves. At the end of the day, items found were delivered to the branch at which the reserve originated. Two staggering statistics emerged as a result of the change to the book catalog and the creation of the request/reserve/delivery system. The first change was that the number of reserves doubled each of the first two years—the result of giving catalog access to the total system's resources. Second, 75 percent of all of the reserves were found by the driver on his first trip, most of them being delivered to the branch of origin within forty-eight hours of the time the request was originally submitted!

In closing, we should understand that the prolonged existence of the current computerized book catalog is limited at best. Entire COM catalogs can be generated and duplicated overnight. Many libraries will find it less expensive to reaccumulate the whole catalog continuously rather than get into a main-catalog-plus-cumulative-supplement process. Microfilm and microfiche are trivially inexpensive in relationship to printed catalogs and the turnaround time for COM is incomparably faster. The cost and speed of computer-based microform catalogs will continually reduce the number of locally produced hard-copy book catalogs in existence in this country. And the primary factor is cost. My parting admonition, however, is not to confuse cost with quality—there is no necessary correlation between the two. The printed book catalog is far superior to its alternative as an artifact to peruse, but it is certainly more expensive and is much more out of date. I would welcome a prediction from any futurologist about when and in what form the hard-copy book catalog will rise from its phoenix-cum-microform ashes.

REFERENCES

2. Ibid., p. 196.


ADDITIONAL REFERENCE