DOCUMENT RESUME

ED 119 743 95 IR 003 250

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TITLE Access to Nonprint Media: What Is and What May Be.
INSTITUTION Stanford Univ., Calif. ERIC Clearinghouse on Information Resources.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE 31 Mar 76
CONTRACT NIE-C-74-0027
NOTE 14p.; Paper presented at the Association for Communications and Technology Annual Meeting (Anaheim, California, March 31, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS *Audiovisual Aids; Audiovisual Centers; Cataloging; *Information Networks; Instructional Materials Centers; Instructional Media; *National Programs; School Libraries; Speeches
IDENTIFIERS AECT 76; Machine Readable Cataloging; MARC; National Information Center for Educational Media; National Instructional Materials Information Syst

ABSTRACT

The increasing number of nonprint holdings in libraries and media centers throughout the country emphasizes the need for a network approach to the control of nonprint media. Programs such as the Library of Congress' MARC (Machine Readable Cataloging) have provided a common machine readable record of book and monographic holdings, resulting in a number of resource sharing networks among libraries. A similar standardized record to nonprint media should be developed and used. Programs such as the University of Southern California's National Information Center for Educational Media (NICEM) indexes and the National Center for Educational Media and Materials for the Handicapped's NIMIS (National Institutional Materials Information System) have started to develop the standardized data necessary to a network. Library media professionals should make themselves aware of the standards and techniques used in networking and should become familiar with computer technology so that when a nonprint media network is developed and implemented school libraries and media centers will be able to make use of the advantages of the network. (JY)

ACCESS TO NONPRINT MEDIA: WHAT IS & WHAT MAY BE

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Paper presented at Association for Educational Communications and Technology, Anaheim, March 31, 1976

The National Center for Educational Statistics, DHEW, has released two tabulations from a comprehensive statistical survey on school libraries and media centers. These statistics will not come as any surprise to the members of this audience, but they service to underline the reason for the topic of this presentation. The summary data taken from these tabulations shows that a total of 74,625 schools in the United States now have library/media centers. These centers reported an expenditure of $1,182,284,882: 69% went for salaries, 14% for books, 2% for periodicals, and 6% ($71,379,882) for audiovisual materials, exclusive of equipment. Total number of audiovisual holdings in library/media centers in 1974 added up to 68,023,961.

It is a widely held belief that all things are cyclical in nature. The statistics quoted above bring to mind the fact that the earliest attempts to communicate information between humans, other than face to face, were the pictographic and ideographic forms used in the Middle East from about 3,500 B.C. on--perhaps the audiovisual precursor of the book. I recently heard that a professor on a state college campus complained that his graduates would have to be given their diplomas in audiocassette form, since it was questionable whether some of them would read a printed version.

In all seriousness, however, it is easy to observe in our own media centers that the number of nonprint materials produced and purchased has been steadily increasing. This factor alone would provide sufficient impetus for a major discussion of the need for a new look at managing

nonprint media. At the same time, there are other trends in the library/media field that make such a discussion not only timely, but necessary.

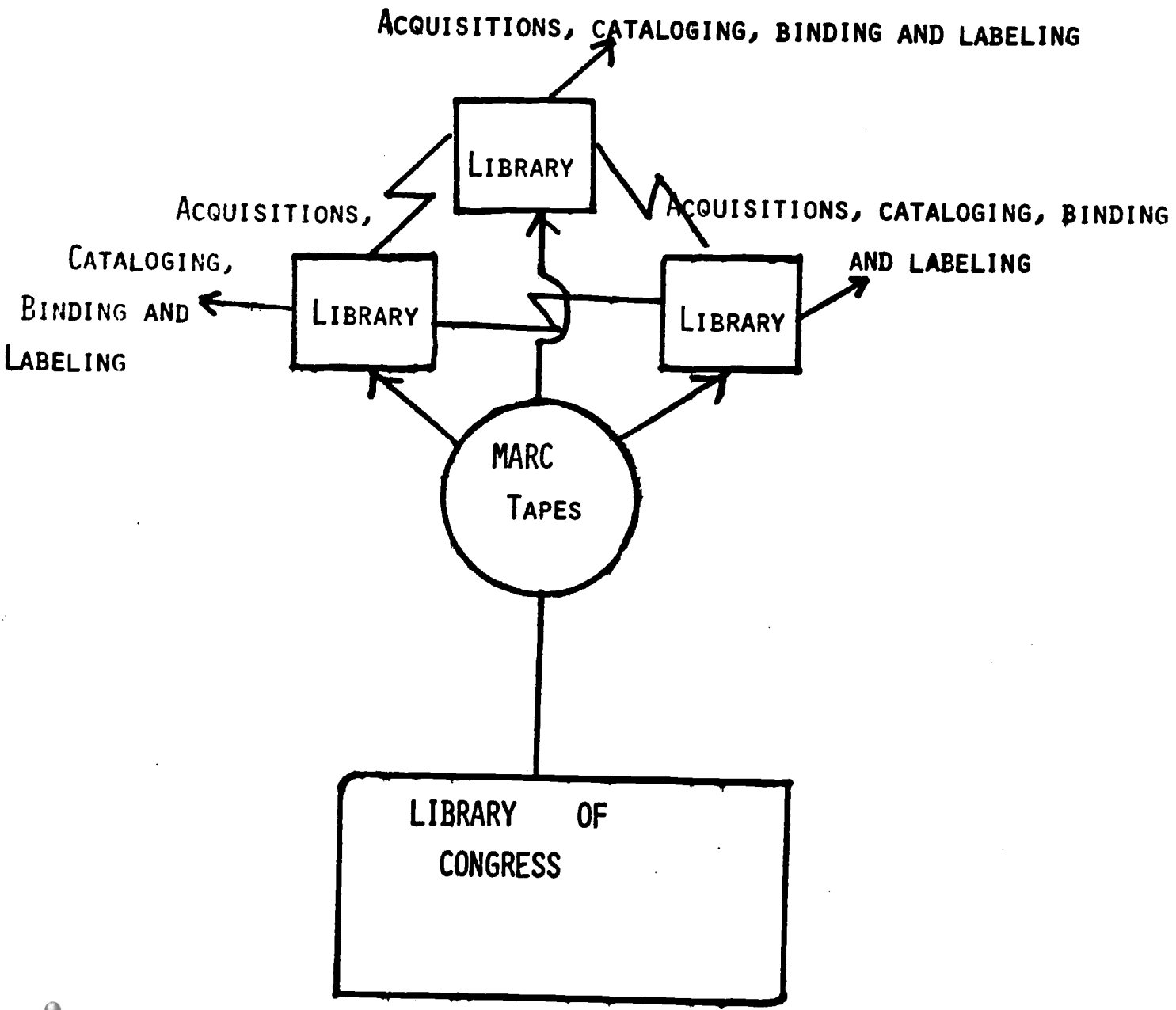
SOLINET, NELINET, PALINET, BALLOTS, OCLC, FEDNET, ILLINET, MIDLNET, SALINET, PLAN, SLICE, VALNET, and so on are familiar additions to the list of acronyms coined to give a catchy title to the otherwise jaw-breaking names of the growing numbers of library networks. BALLOTS, for instance, stands for Bibliographic Automation of Large Library Operations using a Time Sharing System. Networks such as these represent an attempt by libraries to systematically share resources of various kinds--books, serials, computing resources, and library technical processing. They conform to the standard definition of a network: component libraries are each connected to the others in such a way that information and resources can be systematically exchanged. The aim is to institute common, or at least compatible, procedures while at the same time making available to individual component members the resources of the whole.

At the present time the network organizations are mostly concerned with common housekeeping operations, but as communication costs go down and the use of on-line processing becomes more common, a pooling of resources will undoubtedly help to eliminate unnecessary duplicate holdings and help libraries keep up with inflation.

These networks rely in large part on the long tradition of standardized methods of cataloging and classifying the print materials held in libraries. The prevalence of the Dewey Decimal System and the Library of Congress system has promoted the development of union catalog, interlibrary loans, and automated cataloging projects.

Each librarian is trained to catalog using these systems and is readily able to either do the work in-house or to understand the cataloging done by outside suppliers.

A SIMPLIFIED MODEL OF A LIBRARY NETWORK



The single biggest supplier of automated cataloging information in the United States is the Library of Congress' Machine Readable Cataloging program--called MARC. This service currently covers monographic titles for English language materials. MARC started in 1966 as an experiment to determine if it was feasible to produce a standardized machine-readable catalog record that can be manipulated and reformatted in local installations to serve local practices and needs. The MARC magnetic tapes contain complete bibliographic information for each work, an abbreviated author title record, and subject and descriptive cross references.

MARC records have provided the nucleus of many of the first library networks. Both the BALLOTS system and the Ohio College Library Center (OCLC) program rely on the existence of MARC records.

Just how does MARC work in a network setting? Typically a group of libraries has access to the MARC tapes via a centralized computer service. The centralized computer service not only makes the tapes available, but also has developed a sophisticated software package to aid librarians in performing many of the functions that fall under the general heading of library technical processing. The librarian compares incoming tapes with previously known cataloging information needs and identifies matching records. Matching records are used to generate catalog cards, spine labels, acquisions lists, and even book catalogs. Most systems provide the librarian with the option of creating a MARC-like record for material that is so localized in nature that it is never likely to have a Library of Congress-produced record.

At the present time the only nonprint materials that are cataloged by MARC are film based products and phonograph records.

Audiotapes, videotapes, cassettes, multimedia kits, and the like do not have a MARC record.

What a library gains from having access to the MARC tapes is swift, efficient processing of newly acquired materials and the assurance that the library's records of its holdings is in conformance with the records of other libraries. It can also use the system to become aware of books that meet client needs that are not in the library holdings. But most importantly, the library avoids the duplication of effort caused by having a book cataloged by 5 professionals in 5 libraries.

Having a shared set of machine readable records also sets the stage for sharing the library's resources with other network members. The production of a union catalog becomes much easier, interlibrary loans are facilitated, and branch libraries can concentrate on having multiple copies of popular titles with the assurance the network will provide the resources to answer patron requests for the more esoteric items.

What similar systems exist that deal with nonprint media? Other than the Library of Congress' limited processing of audiovisual media, no general machine readable cataloging project covers media exhaustively. The largest project that approximates MARC is the National Information Center for Educational Media (NICEM) at the University of Southern California. Approximately 15 years ago, USC began experimenting with various data processing techniques to solve the problem of cataloging and indexing information on Educational media. A feasibility study sponsored by the U.S. Office of Education resulted initially in a data bank of information about educational films and in computer programs and data processing procedures designed to produce indexes and catalogs from the data banks. Currently the

NICEM data base consists of about 400,000 main entries, each containing 900 to 1000 characters of information. NICEM uses this data bank to publish 14 indexes comprised of 18 volumes. Indexes exist to educational films, 35mm filmstrips, audiotapes, videotapes, records, 8mm motion cartridges, and educational slides. NICEM supplies the Library of Congress a Master Input Report Form to be used jointly by LC and NICEM. The media are cataloged according to the Standards for Cataloging Nonprint Materials (4th ed. from Association of Educational Communications & Technology) and the appropriate subsection of the Anglo American Cataloging Rules (ALA). The citations are indexed by subject and by producer and distributor. The indexes are updated every two years and are available in a microfiche format. NICEM tapes do not contain any evaluation data, their tapes are not yet available for computer searching, and NICEM does not rent, lend, or supply any of the audiovisual materials cited.

Two other systems exist that do not cover media nearly as extensively, but do offer some features not found in NICEM. AVLINE is sponsored by the National Library of Medicine and developed by the Association of American Medical Colleges. Using the NLM Medline as a prototype, the system seeks to provide information about existing high-quality audiovisual aids to be used in medical education. The materials must be nominated from the field rather than by the producer/distributor. It is appraised for content (subject matter), instructional design, and technical and physical quality. It is cataloged using the Anglo American Cataloging Rules and indexed by the MeSH (Medical Subject Headings) vocabulary. The system can be queried using Boolean operators to identify the materials needed, and abstracts of the contents are provided. In the future two other areas are to be developed: A needs

assessment plan for production of new materials and review of the problems and potential solutions related to distribution and retrieval of the actual materials by students and faculty members. At the present time there is no facility for using the machine readable record of AVLINE to facilitate and standardize the recordkeeping in medical library/media centers.

The NIMIS program (National Instructional Materials Information System) is being designed and implemented by the National Center on Educational Media and Materials for the Handicapped at Ohio State University in conjunction with the Area Learning Resource Centers and the Specialized Offices. It is funded by the Bureau of Education for the Handicapped. NIMIS is a computer based on-line interactive retrieval system, specifically developed for the purpose of locating information about instructional materials in the field of special education. Each NIMIS entry includes, if available, items of identification such as the following: author, title, publsiher, price, abstract/ description. By August 1976 it is expected that some 15,000 items will be stored in the NIMIS file. Material in the file includes child use materials and teacher training materials. In the future two additional types of materials will be included: measurement and evaluation materials and prototype materials. When NIMIS is in full operation it is expected that about half the entries will be for nonprint materials. The National Center coordinates the development of common standards and procedures for the ARLCs and the SOs to use in their preparation of entries into NIMIS. Five parameters are used to identify materials: disability or handicapping condition, educational level of materials needed, curricular area or general content area, specific concept or skills in that area and format of materials needed. Materials which

are identified but are not available from local, metropolitan, and state learning resource centers near the person who wants to use them will be made available on loan by the Specialized Office for materials distribution. The NIMIS system is available via OCLC network.
Each of these systems has a part of what is needed to develop a complete access network for nonprint media. What is meant by such a network? At the 1970 Conference on Interlibrary Communications and Information Networks sponsored by the American Library Association and the U.S. Office of Education, the Technology Working Group issued the following assumptions about a future national network of libraries and and information centers.

1. The network will be national, regional and local in scope.
2. It will include all types of libraries, data and information analysis centers, instructional media centers, and so forth.
3. It will facilitate the exchange of bibliographic data, mediation of reference inquiries, and distribution of library and audiovisual instruction.
4. It will have no geographic restraints.
5. It will make maximum use of computer and communications technology.
6. It will provide timely access and response rates consistent with the user's need for information.
7. It will adopt a standard format for bibliographic interchange and establish other protocols and common practices.
8. It will supply incentives and evolve a financial structure to stimulate network use.
9. It will consist of a formal set of major nodes at the national and regional level, and individual access points within a reasonable radius of local nodes.

10. It will incorporate switching stations and directories for request and response referrals.

11. It will enable users connected to one node to have access to any other node.

It would seem that a network designed to improve access to nonprint media could do much worse than to adopt similar assumptions. Further, there should be a recognition of the need for three most important functions of a network: Provision of services and facilities to accomplish specific jobs for users of the network; physical movement of data from one place to another across the distances spanned by the network; and communication facilities providing for reliable, versatile, efficient communication between users and suppliers. The users service portion of the network can be taken to include the users of services, the suppliers of services, and the resources from which the services derive. The transmission network consists of a set of communication facilities by which machines can pass data to one another, such as the TWX machines used in libraries. The communication facilitation section would create and enforce standards, establish user protocols, perform centralized accounting and billing, furnish hardware and software, and provide communication services.

To reduce this seemingly formidable task of establishing a network to simpler proportions, the following steps might be taken--an immediate decision about the desirability of such a network and the services it could facilitate or perform. This implies that each of us must make ourselves aware of the practices now in use in such networks and must assess the adaptability of these practices to our potential network. We must look at our own facilities to see what we would need from the network and what we could contribute. If we find a network

desirable, we must use our professional organizations and regional groups to begin the concrete planning of the network.

We should devote some time to discussion with our peers about the design of an optimum network considering at least the following points: Who should design the network and what is known about the necessary elements? What systems already exist and how might they be adapted or expanded? What models exist in the field and how can they be adapted? How can the system be made compatible with other information/ resource networks? How can we plan ahead for ease of future modification? How can we make the network available to a wide variety of audiences? How can we best utilize our individual resources while providing for a fair access to others?

Obviously each of these points can be discussed at length and so they should be. It is not my hope here today to suggest that there is any simple method to accomplish the task, simply to point out that networks exist in other spheres and that they can and have had a significant effect on the ability of library/media center personnel to serve the teachers and students who rely on their services in a more professional, efficient, and cost effective manner.

While the network is being designed and implemented we can take some steps to help insure our readiness to utilize its services. We can become familiar with and expose our staffs to computer technology. This does not mean becoming a hotshot programmer, but rather a skillful user of the computer and all it offers, neither over-nor underestimating its capacity. This can be accomplished as simply as encouraging staff members to enroll in local community college courses on elementary computer use.

We can adopt and use the standard format of bibliographic recordkeeping and established protocols, standards, and practices. The latter is a sine qua non in a networking operation. Without a common bank of shared data and documentation, there is little possibilty of sharing resources. This standardization process is already the subject of debate in some form in many committees, both national and international. To mention only a few--committees of the American Library Association, the Canadian Library Association, the American Association of School Librarians, the Information Science and Automation Division, the Reference and Adult Services Division, the Public Library Association, and the International Federation of Library Associations.

Until these associations are able to agree on common standards, it is a good idea to use those well documented manuals that presently do exist, such as the Standards for Cataloging Nonprint Media, the Anglo American Cataloging Rules, the Specifications for Magnetic Tapes containing Records for Motion Pictures, Filmstrips, and Other Pictorial Media Intended for Projection, Handbook X--Educational Technology, A Handbook of Standard Terminology and a Guide for Recording and Reporting Information about Educational Technology.

It may be some time before we are able to work out all the problems associated with a network for nonprint media. Many prophets will probably come forward with THE SYSTEM--designed to solve all the problems, meet all the needs, and save thousands of dollars into the bargain. The rest of us will have to make do with a steady evolution toward a network that solves some of the problems, meets most of the needs, and is only a little more expensive than our old way of doing things. Still I guess I agree with James Thurber, who said, "It is better to know some of the questions than all of the answers."

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