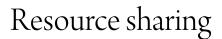School of Library and Information Science Faculty
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RESOURCE SHARING

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Ernest Hemingway took the title of his novel *For Whom the Bell Tolls* from John Donne, the early 17th century English poet and clergyman. Donne wrote: "No man is an island, entire of itself; every man is a piece of the continent, a part of the main . . . any man's death diminishes me, because I am involved in mankind; And therefore never send to know for whom the bell tolls; It tolls for thee." The same can be said of libraries. No library is an island, entire of itself.

No library – not even the largest – contains a society's entire stock of recorded knowledge. Money is limited, space is limited, staff are limited. Within these constraints, each library tries to serve the needs of its particular population of users as best it can. But no library can acquire everything. The only way libraries can serve the information needs of their users as fully as possible is to share resources.

As recently as five or six years ago a society's usable stock of recorded knowledge could still be pretty well defined in terms of the collective holdings of that society's libraries. Today, with the continuing explosion of Internet resources, a society's stock of knowledge is harder to define. Yet the role of the library remains fundamental. The library is the primary institution by means of which a literate society retains contact with and control over its accumulated stock of recorded knowledge. Internet resources can be here today and gone tomorrow. Only libraries have the institutional responsibility of preserving information through time.

Resource sharing operates at several levels. Resource sharing logically begins at the level of acquisitions and collection development. If a society's usable stock of recorded knowledge can be defined in terms of the collective holdings of its libraries, and if no library can collect everything, it makes sense for libraries to limit duplication of collections, especially in terms of materials that support advanced research. It would be endlessly frustrating if resources that are used every day were available in only one or two libraries. But if a group of libraries in a region

or country divides responsibility for collection development in specialized research areas, the stock of recorded knowledge available to the society as a whole can be significantly enhanced. I am not going to talk further about resource sharing at the collection development level, except to say that there are numerous examples of libraries that cooperate in collection development. Some of these cooperative arrangements are highly formalized while others are relatively informal.

Resource sharing cannot work if we have no effective way of finding out where needed resources are located. Nor can it work if we have no effective way of making resources in one library available to users in other libraries. These are the issues I want to focus on today. I will be talking about library catalogs and about interlibrary lending, with particular emphasis on how computer-based systems have revolutionized resource sharing.

Catalogs

In the Middle Ages, a monk who needed a book that wasn't in the library of his own monastery would write to friends in other abbeys hoping to locate a copy. Much of the surviving correspondence of medieval scholars consists of inquiries about the whereabouts of books that were reputed to exist somewhere. If, after months or years of searching, the monk finally located the book, additional correspondence would be necessary. Initially he might ask if the book could be borrowed or a copy could be made for him. In the end the monk usually had to travel to a distant monastery to copy the book himself. Today locating materials in other libraries and gaining access to them is somewhat easier than it was in the Middle Ages.

For several centuries the best way of finding out if a library had a needed book was to consult the library's printed book catalog. Early libraries often maintained handwritten

inventories of their holdings, but these could only be used in the library itself. Library catalogs in printed form became popular in the early decades of the 17th century, and printed book catalogs remained the most common form of library catalog until the advent of the card catalog around the turn of the 20th century. Printed library catalogs had significant advantages over the card catalog. Like other printed books, printed book catalogs were reproduced in multiple copies. A printed book catalog could be consulted in multiple locations within and without the library. Schools and other libraries in a town could have their own copies of the catalog; regular users of the library could buy copies to use at home. Libraries in different cities could exchange copies of their catalogs, making it possible to locate books in libraries throughout a region or across national boundaries. The primary disadvantage of printed book catalogs was that they did not include recent acquisitions. Years could go by between the publication of supplements or new editions. But knowledge did not grow as fast in the 19th century, so this was less of a problem than it would be now. In the early 1880s only about 2,000 books a year were published in the United States, compared to more than 50,000 a year today.

Card catalogs began to replace printed book catalogs in the closing years of the 19th century. The great advantage of the card catalog was that it could be kept continually up to date. New cards could be filed in the catalog weekly or even daily. Card catalogs also made it easier to provide multiple access points for each item in the collection. Access points were restricted in printed book catalogs to save space. But if a library wanted to provide multiple access points in its card catalog – under titles, editors, translators, or multiple subject headings, for example – all it had to do was file additional cards in the catalog. But the card catalog was bulky and could not easily be reproduced in multiple copies. If you wanted to consult a library's card catalog, you

usually had to go the library itself and use the catalog there. In this respect card catalogs were like the handwritten inventory lists that libraries maintained in the Middle Ages.

The widespread adoption of the card catalog meant that libraries became more insular than they had been in the era of the printed book catalog. Since libraries couldn't exchange duplicate copies of their card catalogs, it became more harder to ascertain the holdings of other libraries. It wasn't until the 1980s, when online catalogs began to come into common use, that we had a technology that combined the advantages of currency, improved searching techniques, *and* remote access. Today you can sit down at a terminal and search the online catalogs of libraries located throughout the world.

In some respects, however, the card catalog fostered cooperation among libraries. First, libraries no longer had to do original cataloging for each item added to the collection. Libraries with card catalogs had the option of buying printed cards from a centralized source and filing the printed cards in the local catalog. In the United States the Library of Congress became a centralized cataloging agency serving thousands of libraries. When the Library of Congress cataloged a book, printed cards were produced that were made available to other libraries. The Library of Congress began selling printed cards in 1901 and stopped selling them in 1997. These dates mark the effective beginning and end of the era of the card catalog in the United States.

Second, since libraries couldn't exchange copies of their card catalogs, they began to collaborate in the compilation of *union catalogs*, many of which were produced in printed form. A union catalog is a catalog that includes the holdings of a group of libraries. In the 20th century union catalogs became the chief means of locating books and serials in other libraries prior to the advent of bibliographic utilities like OCLC.

Many union catalogs were compiled at the state or local level. One of the first was the *List of Serials in Chicago*, published in 1901. The most important national union catalogs were compiled by the Library of Congress. In 1926 the Library of Congress published the *Union List of Serials*, containing 75,000 titles and representing the holdings of 225 libraries throughout the United States. A second edition published in 1943 contained 115,000 titles and represented the holdings of 650 libraries. But the most comprehensive project was the *National Union Catalog* (NUC). It began as a card catalog with cards contributed by the Library of Congress, other governmental libraries in Washington, D.C., and a few other major libraries, including the New York and Boston public libraries, Harvard University, and the University of Illinois. By 1954 the National Union Catalog contained cards for nearly 7 million titles and 13 million holdings submitted by more than 500 libraries. Since the catalog was in card form, the wealth of information it contained was not widely available outside the Library of Congress. Arrangements were eventually made to publish the information in book form, and the first volumes of the *National Union Catalog, Pre-1956 Imprints* appeared in 1968. The last of the 754 volumes appeared 14 years later. It is safe to say that no monumental book catalog of this scope will ever again be published in book form.

OCLC

Libraries were among the first organizations to embrace the computer revolution. The automation of library operations followed from the development of the MARC (machine-readable cataloging) format at the Library of Congress in the mid-1960s. The Library of Congress began working on a machine-readable cataloging format in 1964. The MARC format that (with a few modifications) remains in use today was perfected by 1968, when the Library of

Congress began the general distribution of cataloging records on magnetic tapes. The MARC record is the basis of online catalogs as well as automated acquisition and circulation systems. The MARC record also made possible the creation of online union catalogs that contain millions of MARC records and document the holdings of thousands of libraries throughout the world. And it was online union catalogs that made possible the revolution in interlibrary lending which has taken place over the past twenty-five years. In terms of facilitating access to information, the creation of the MARC format is one of the most significant developments of the twentieth century, second only perhaps to the invention of the computer and the advent of the Internet.

The potential of the MARC format in facilitating resource sharing and access to information has been most fully realized by organizations known as *bibliographic utilities*. A bibliographic utility makes bibliographic records and related services available to member libraries, much as traditional utilities supply electricity, gas, and water. The oldest and largest bibliographic utility is OCLC, founded in 1967 when the MARC format was being developed. OCLC originally stood for Ohio College Library Center; the name was later changed to Online Computer Library Center, but it is universally known as OCLC. I always have to stop and think what the acronym stands for.

OCLC was conceived and founded by Frederick Kilgour, a librarian of great prescience and vision who perceived the fundamental transformation of library operations that MARC records would make possible. The original purpose of OCLC was to facilitate cooperative cataloging by college libraries in the state of Ohio, but within a few years it was serving all kinds of libraries in all parts of the United States. Today there are about 37,000 member libraries, including many libraries in Europe and Asia. The OCLC database currently consists of nearly 45 million MARC records and is growing at the rate of 2,500,000 records a year.

OCLC is not a cataloging agency. The records in the OCLC database are created by others. Many of the records in the database come from the Library of Congress and other national libraries, including the British Library and the National Library of Canada. Others are created by OCLC member libraries. This is how it works.

When a new acquisition (a book, sound recording, video recording, computer file, etc.) arrives at an OCLC library, a member of the library staff sits down at a terminal and searches for it in the OCLC database. In most cases a MARC record for the item is already in the database. The member library tells OCLC to make a copy of the MARC record and add it to the archival tape that OCLC maintains for each of its member libraries. The archival tape of MARC records is the basis of each member library's online catalog. Before the MARC record is added to the member library's tape, however, it is edited to reflect the needs of the individual library. Two different classification systems are in widespread use in the United States, the Dewey Decimal Classification and the Library of Congress Classification. The member library has to indicate the classification number it wants to use, and it may have to indicate the location within the library where the item can be found. At Wayne State University, for example, books are shelved in the Main Library, the Science and Technology Library, the Undergraduate Library, the Law Library, and the Medical Library. Each of these libraries occupies a separate building. There are also different collections within each library where a book may be located. Most books are shelved in the library's general stacks; reference books may be in non-circulating reference collections; those that are required reading for classes are in a reserve collection where the loan period ranges from two to twenty-four hours. Other changes in the MARC record may be necessary as well. The changes are made on the screen of the computer terminal. When the record has been edited to suit the member library's needs it is sent electronically to OCLC's headquarters in Ohio,

where it is added to the member library's archive tape. The master record in the OCLC database is unaffected by the edits made by member libraries.

What happens if a library doesn't find a MARC record in the OCLC database and for the newly acquired item? In that case the library has two options. The first option is to do original cataloging for the item, calling up a skeleton MARC record on the screen and filling in the necessary coding and cataloging data. The newly created MARC record is sent electronically to OCLC where it becomes part of the OCLC database and is also added to the member library's archive tape. The newly created record thus becomes available to the next member library that searches for the item. Original cataloging by one OCLC member library becomes available to every other member library. Many records in the OCLC database are input by member libraries themselves. The second option is for the library to put the item back on the shelf and search for it again a week or two later. By that time a MARC record for the item may have been added to the database, perhaps representing original cataloging by another OCLC library.

The OCLC database includes MARC records for publications from all historical periods, not just materials published since 1968 when the MARC format was introduced. When online catalogs began to replace card catalogs in the early 1980s, they included records for everything previously included in the card catalog. No one would have been interested in online catalogs if they only included materials published since 1968! Where did the MARC records for pre-1968 imprints come from? Every library that brought up an online catalog had to convert the manual records in its card catalog to machine-readable form. This process is known as *retrospective conversion*. Retrospective conversion is a huge undertaking. It's labor intensive and very expensive; many libraries received special funding for retrospective conversion projects.

Retrospective conversion is similar to cataloging new acquisitions, except that the staff

member usually has a catalog card in hand rather than the item itself. You search OCLC and

hope that a MARC record for the item is already in the database. If it isn't, you call up a skeleton

MARC record and fill in the necessary coding and cataloging data. The first library that

converted a card catalog to machine-readable form had to create new MARC records for every

item in the collection published before 1968. Those MARC records were added to the OCLC

database and were available to the second library that undertook a retrospective conversion

project. As time went on the OCLC database included more and more records for pre-1968

imprints. The databases of OCLC and other bibliographic utilities now include MARC records

for most of the publications held by member libraries. Today when a library catalogs a collection

of rare or unique materials, it is not only the library's local users that benefit but also libraries

and users throughout the world. Special funding from governmental and other sources has

helped libraries catalog hundreds of specialized collections, ranging from political pamphlets

from the period of the French Revolution to original blues recordings from the 1920s, 1930s, and

1940s. MARC records for materials like these are an important part of the databases of OCLC

and other bibliographic utilities.

Interlibrary lending

One of the most important features of bibliographic utilities like OCLC remains to be discussed.

When a member library catalogs an item through OCLC, the library's location symbol is attached

to the master record in the OCLC database. When you call up a MARC record on OCLC you

can ask the system to display holdings. You then get a display showing the location symbol of

every member library that has cataloged the item through OCLC. Nearly 750 million locations

are currently attached to the records in the OCLC database – an average of almost 20 location symbols per record. The database thus serves as a universal union catalog, showing the holdings of member libraries throughout the world. OCLC calls its bibliographic database the Online Union Catalog or WorldCat.

This feature has revolutionized resource sharing. Before the creation of OCLC and other bibliographic utilities, there was no way to find out which libraries had copies of which books. The National Union Catalog and other printed catalogs identified the holdings of only a small number of major research libraries. There was rarely any way of finding out if a library in a nearby community had an item being sought. Interlibrary lending was cumbersome and inefficient. Requests were often directed blindly to larger libraries in the hope that they *might* have the item. Interlibrary loan requests were commonly directed to one library after another, without ever knowing if the potential lender actually owned the item being sought. Today when interlibrary loan requests are made, they are directed to libraries that are known to have cataloged the materials being sought. The implications of this are not limited to interlibrary lending. There are also benefits for resource sharing at the level of collection development. A library considering a purchase may do a quick check to see if other libraries in the area have the item. If it is already available, the library may decide to purchase something else.

OCLC established its Interlibrary Loan Subsystem in 1979. Before 1979 libraries used the OCLC database to find out where materials were located but then had to transmit interlibrary loan requests by mail or telephone. For the past 21 years interlibrary loan communications have been transmitted through the OCLC network itself. When interlibrary loan personnel sit down at their terminals each morning they find interlibrary loan requests that have arrived through the OCLC Interlibrary Loan Subsystem. The requested items are checked for availability, and

responses to the requests are transmitted through the subsystem. If an item can be supplied the requesting library is informed that it is on its way. Books are checked out to the interlibrary loan office and shipped to the requesting library; journal articles are usually photocopied and either mailed or faxed. If a requested item is circulating, the requesting library is told when it will be available. If the library doesn't want to wait it redirects the loan request to another library. Sometimes the requested item is not available. It may be shelved in a non-circulating area such as reference or special collections, it may be missing, or it may have been weeded and discarded. If this is the case the requesting library is informed and it redirects its request elsewhere.

The current OCLC system is designed to accommodate electronic document delivery, but at this point the Interlibrary Loan Subsystem is used primarily for communication between interlibrary loan offices. Electronic document delivery is growing quickly, but most of this activity is commercial. Libraries receive electronic documents from publishers and vendors and in turn supply them to authorized users, but contractual agreements with the vendors do not permit them to share the documents with other libraries.

There has been a huge increase in interlibrary lending over the past twenty years, largely due to the creation of library networks and bibliographic utilities such as OCLC, with its Online Union Catalog and its Interlibrary Loan Subsystem. Interlibrary lending increased 99 percent between 1986 and 1994 alone. Earlier this summer the total number of interlibrary loan requests processed by the OCLC Interlibrary Loan Subsystem reached the landmark figure of 100 million.

Authority records

I want to conclude by saying a few words about authority records and the OCLC Authority File. Authority records are created for persons, corporate bodies, geographic names, uniform titles,

and subject headings. Catalogers try to link all bibliographic records for works by a given person, regardless of name changes, variant spellings, and pseudonyms the person may have used. Mark Twain and Samuel Clemens are the same person, as are Isak Dinesen and Karen Blixen; so are James Morris and Jan Morris, a British author who had a sex change operation in mid-career. There are also links between the various names a corporate body may have used at different periods of its history. Variant spellings and name changes of geographic names are linked. Sacred texts such as the Bible, anonymous classics such as the Arabian Nights, and musical compositions such as Beethoven's Moonlight Sonata that are known under various titles are also linked. Tracking down and documenting the various names under which persons, corporate bodies, geographic areas, and musical or literary works are known can involve extensive and time-consuming detective work. The results of such detective work are recorded in authority records. Cross references in the catalog are based on information in authority records. The whole process is known as *authority control*. Searching library catalogs would be far more difficult without authority control.

Authority records are different from bibliographic records. The OCLC Authority File is completely separate from OCLC's database of bibliographic records, the Online Union Catalog. Most of the authority records in the OCLC Authority File are created by the Library of Congress or major research libraries working under the supervision of the Library of Congress. Since all libraries have access to the same authority records, library catalogs throughout the United States can use compatible headings for personal names, corporate bodies, geographic names, uniform titles, and subjects. This makes resource sharing far easier than it would be if different libraries entered the same work under different headings. It also means that local libraries don't have to replicate time-consuming authority work that has already been done elsewhere.

The OCLC Authority File is also an extremely useful tool for reference work. If you want authoritative information about a person's names, such as Madonna (the singer and actress) or President Clinton, you can find it easily in the OCLC Authority File. Information about geographic name changes, the history of corporate bodies, and much else is also readily available in the OCLC Authority File.

End