

THE CANADIAN UNION CATALOGUE IN LIBRARY AND  
INFORMATION NETWORK DESIGN (LE CATALOGUE  
COLLECTIF CANADIEN ET L'ORGANISATION D'UN  
RESEAU DE BIBLIOTHEQUE ET D'INFORMATIQUE)

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ABSTRACT

The following paper is intended to provide information scientists with a better understanding of some of the problems involved in creating and maintaining library networks in particular and information centre networks in general. It is basically concerned with the development of union catalogues, both manual and computerized, and attempts to show not only the advantages accrued from union catalogues but also a few of the problems involved in their establishment and proper maintenance. Finally, the paper will describe how individual networks can be integrated into a National scheme. At the presentation the author will expand on some of the peculiarities involved. (L'exposé qui suit a pour but de donner aux spécialistes de l'information une meilleure connaissance de quelques-uns des problèmes que comportent la création et l'organisation des réseaux de bibliothèques en particulier, et des réseaux de centres d'information en général. Ce texte traite surtout de la mise sur pied des catalogues collectifs, tant manuels qu'automatisés, et vise à montrer non seulement les avantages que ces catalogues apportent mais aussi quelque-uns des problèmes qui se posent. Enfin, l'exposé décrit comment des réseaux individuels peuvent être intégrés sur le plan national. Lorsque l'auteur présentera sa communication il s'attardera sur quelques aspects particuliers. )

In recent years much progress has been made in merging the fields of information retrieval and computerization. For example, Selective Dissemination of Information (SDI) is today a profit making concern. But, for the most part SDI services provide "clues" about the information. Very often the user finds this sufficient. If it is not then the entire document is required. If it is not in his own library, the user can request that the material be borrowed for him on Interlibrary Loan (ILL). There now commences a process which has been refined over many years. It is a cooperative scheme amongst libraries through-out the world. In Canada it is used mostly to borrow from other Canadian libraries. One way the system works is as follows.

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Library A, which is in need of a particular document, transmits bibliographic information about the item (called a Location Request) to the National Library of Canada (in 1973-74, almost 130,000 such requests were received). There it is checked against a file of 3" x 5" cards. This file represents the cumulated records of over 13,000,000 cards representing more than 3,500,000 unique documents (i.e., unduplicated) which are owned by some three hundred Canadian libraries. Each card contains a symbol or group of symbols denoting which libraries have, or to use the jargon "hold", a particular item. When the request from library A is received it is searched in the above mentioned file and the libraries holding the document are noted. This information is then relayed back to library A which in turn sends out a special, standardized request form to the holding library. There are many variations to the above process which will not be discussed at the present time because this paper was designed to describe the file of cards mentioned above. This file is properly known as the Union Catalogue of Books (UCB) and as can be readily seen, is the real heart of the entire ILL system.

Therefore, it would seem natural that a short description of its characteristics would be valuable. The UCB was begun in 1951 when selected Canadian libraries agreed to contribute duplicate records for each book catalogued in their library. These records, which were either on 3" x 5" slips of paper or on 3" x 5" cards were then sent to the National Library in Ottawa where they were filed alphabetically by main entry Heading, i.e., by that access point other than subject which was determined by "standard" cataloguing rules to be the most appropriate. (The difficulties involved in this approach will be discussed below.) Over the years the number of cards or slips, known as accession reports, sent to Ottawa have increased tremendously until the tide peaked in 1972 when, 1,635,887 accession reports were received (see table). This means

YEAR	ACCESSION REPORTS RECEIVED	INCREASE OVER PREVIOUS YEAR	% INCREASE OVER PREVIOUS YEAR
1968-69	1,072,172	178,450	20%
1969-70	1,211,583	139,411	13%
1970-71	1,405,888	194,305	16%
1971-72	1,635,887	229,999	16%
1972-73	1,540,299	-95,588	-6%
1973-74	1,610,416	70,117	5%
ACCESSION REPORTS TO THE UCB			TABLE I

that there are about 6,000 reports arriving each day which must be interfiled amongst over 13,000,000 other cards. The sheer numbers alone make this a difficult and tedious operation. However, because cataloguing, i.e., describing in words the physical appearance of a book as well as its contents, in a very subjective task, it often happens that the main entry chosen by one library is not the same as that chosen by another. The task of matching the document when it has been recorded differently by various libraries requires professional skill because of the fact that

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The information reported is not always as complete as it should be and the librarian must know how to track down the pieces of information required to make a proper comparison. The difficulty in this procedure is that there is only one access point (i.e., way of searching the file) to the UCB. For instance, Figure 1 is a representation of the correct form entry

<p>(1) Colloque de Dijon, 3d, 1962</p> <p>(2) Le Rôle extra-militaire de l'armée dans le Tiersmonde. Entretiens de Dijon [10-11 mars 1962] publiés sous la direction de (3) Léo Hamon ... Paris, Presses Universitaires de France, 1966.</p> <p>xxii, 459 p. 23 cm (4) (Publications du Centre d'études des relations politiques, Université de Dijon) 18F</p> <p>(F 66-8284)</p> <p>Illustrated cover.</p> <p>Bibliographical footnotes.</p> <p>(5) 1. Armed Forces--Political activity--Congresses. 1. Hamon, Léo, ed. 11. Title. (6) series: Dijon. Université. Centre d'études des relations politiques. Publications)</p> <p>(7) 67-91233</p> <p>FIG. 1</p>
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according to the standard specify rules of cataloguing, i.e. according to the Anglo-American Cataloguing Rules. (1)

It also contains the following additional information:

- (2) the title
- (3) the editor
- (4) the series statement
- (5) the subject headings
- (6) the series added entry
- (7) the LC card number

<p>(3) Hamon, Léo, 1908- <u>éd.</u></p> <p>(2) Le rôle extra-militaire de l'armée dans le tiers monde. Entretiens de Dijon. Paris, Presses universitaires de France, 1966.</p> <p>xi, 457 p. 23 cm. (4) (Publications du Centre d'études des relations politiques, Université de Dijon)</p> <p>FIG. 2</p>
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From Figure 2, it can be seen that this library has requested the document under the editor's name (3). It has also provided the title (2) and the series statement (4). Unfortunately the main entry (1) is not given.

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Thus, the librarian is required to identify the main entry by using other reference tools or sometimes, when all else fails, through educated guess work. Figure 3 and 4 below are variations on them with the latter being an perfect example of a poorly formatted request.

(2) Le rôle extra-militaire de l'armée dans le tiers monde. Entretiens de Dijon, publ. sous la direction de (3) Léo Hamon. Paris, Presses universitaires de France, 1966.

xi, 457 p. (4) (Dijon. Université. Centre d'études des relations politiques. Publications)

FIG. 3

Collection Authorship (2) le Rôle Extra-Militaire de l'Armée Dans Le Tiers Monde. Paris, 1966. Les Presses Universitaires de France.

FIG. 4

Were other access points available, such as standard numbers like the ISBN (International Standard Book Number), the LC (Library of Congress) card number, additional authors, titles or subjects, such a match would be made easier. But to do so in a manual system would be an enormous undertaking for it would mean that the alphabetic file would have to be multiplied by a factor of more than three, and there would have to be at least two more numeric files, none of which exist currently. To be more specific, for each unique record there would be not only a card under the main entry but also one under the title, one under each additional entry, and at least one for each subject, thus adding at least three extra cards to the unique record. In the example given in Figure 1 above, there would be an additional card required for the title, the editor, the subject heading, the series added entry, and the LC card number. The first four would each be filed in a different part of the UCB. The LC card number card would be filed in a separate numeric file. However, since not every record will require so many additions, let the assumption be made that on the average at least three extra cards would be generated for the alphabetical file. Thus instead of the 14 million cards would be three times as many, or 42 million, which would have to be interfiled and housed. Furthermore, let us say, for the sake of argument, that only 25% of all the unique records have an ISBN and that only 50% have a LC card number. This would mean creating two numerical files, one almost a million cards in size, and the second almost three million cards large. The combined size of the three files would be 46 million cards. Obviously such a file would not be workable in a manual environment. Even at its present size the UCB it is becoming unmanageable. One solution to the problem is to automate the process. However, before discussing that subject, I would like to discuss the role of a union catalogue in a library or information network.

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The term network implies cooperation and sharing, particularly the sharing of technical skills, information, and physical resources. By the sharing of physical resources, each partner in the network agrees to send its documents to another member in the cooperative scheme as long as the document in question is not immediately needed by the owning library. Information sharing could include such areas as assistance in answering reference questions, establishing systems development projects, etc. The sharing of technical skills would result from the fact that such functions as ordering and cataloguing would be done once and only once for the members of the network thus saving the work which would result if each member had to create its own ordering or cataloguing records. This obviously means that everybody in the network must readily know that what everyone else has catalogued or ordered and that there be a centralized bank of this information. The creation and continued maintenance of a union catalogue can be an invaluable asset to the functions mentioned above.

However, as was pointed out earlier, in a manual system it would be extremely difficult and time consuming to keep a union catalogue up-to-date. Therefore we must look to automation for assistance. But if we are to use automation then it is essential that some standards be agreed upon, particularly for the input of the records. Such standards do exist and are known as Canadian MARC (Machine Readable Cataloguing) formats. Canadian MARC provides a very high standard of machine readable information for Canadian libraries which most find too rigid in their present state of development. Therefore, the Mini-MARC format which is less stringent in its requirements, was developed at the National Library. It is intended to provide for the minimum amount of information required to correctly match incoming accession reports and Location Requests with records which exist in a data bank. This minimum amount of information includes such basic mandatory fields as ISBN, Canadiana or LC Card number, Author, Title, Series Entry, and Added Entries. It is, of course, permissible to include more information but not less. This allows libraries, or information centres, at almost any but the basic stage of computerization to report their holdings to the National Library in machine-readable form. Also by accepting Canadian MARC, existing or planned library and information networks, have before them an acceptable range of standards for inputting records. Furthermore, the minimum standard was designed so that most of the access points mentioned earlier in this paper, Standard Numbers and added entries (such as corporate author or series statement) must be included. These fields are individually searchable making it easier to match records when the main entry is not the same. It should be noted, at this time, that the National Library's plans to automate its own Union catalogue in 1978.

The matching of records is important not only for cataloguing but for other purposes as well. In any collection of documents, some inevitably get lost, stolen, mutilated or discarded.

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It is important that the records for such items be withdrawn from the catalogue so that no false information about the collection is given out to the user. In a network, this is particularly true when incorrect information is multiplied by a factor of the number of participating centers. The Union Catalogue should be kept up to date so that the ILL function is not unnecessarily disrupted or made to malfunction. In order to prevent such breakdown, the withdrawal record is searched in the union catalogue and the holding centre's symbol (which was input in a specially designed filed at the record creation stage) is removed. Another advantage provided by the union catalogue, especially if subject analysis or indexing terms are provided at the input stage, is the provision of personalized bibliographies on demand. A further advantage, which will simply be mentioned because of its detailed nature, is management information, especially in the form of statistical analyses.

A union catalogue, particularly if it is automated, can therefore provide many advantages to the network which makes proper use of it. It will also form part of a cross-Canada Union Catalogue network in the sense that individual networks might feed information into regional centres which in turn would feed the national centre in Ottawa. Under such a system, Canadian libraries and information centres could develop policies which would help rationalize their acquisitions and cut down on the amount of unnecessary duplication in their collections, thereby providing more money to buy material from a greater number of sources. Through the use of an ILL system the documentary resources of the network and of the country would be made available to researchers and to students across Canada as quickly as communications and mailing systems allow. The actual transfer of the physical document from its place of residence to the place it is needed is still a problem in so far as convenience and cost are concerned but the increased use of microforms as the transfer media offers a partial solution to the difficulty.

So far only the UCB has been mentioned. There are, however other national union catalogues for serials, government documents and newspapers as well as those run by universities and other institutions. Unfortunately time does not allow for a proper discussion of them.

To summarize, union catalogue offer many advantages such as collection rationalization, improved ILL service, improved service to back up SDI programs, shared cataloguing projects, management information services and many others. Some of the projects which were unthinkable only a few short years ago are workable today as a result of the automated Union Catalogue. And its early stage of development means that there are certain to be areas of use which have not even been thought of as yet. In conclusion, then, both the present and the future of Union Catalogues looks bright and very workable.