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ABSTRACT

       The nine papers presented in this report attempt to discuss and describe Canadian library networks and systems as they exist today and as they are being planned for future development at the local, provincial, regional, and national levels. The first report provides, as an example, an overview of library systems and networking in Britain as they have developed since the passage of the Public Libraries and Museum Act of 1964. Other presentations summarize cooperative activities at various levels in Canada: those of the National Library, the National Science Library, and of single provinces or multiprovince regions across the country. In the concluding paper it is pointed out that all of the existing cooperative activity does not yet add up to a Canadian library network, which will not be realized without commitment and five major prerequisites: agreement on objectives, on a plan and on standards, plus money and legislation. (SL)

Canadian Library Systems and Networks

Their planning and development

Papers presented at a symposium
on library systems and networks
at the Canadian Library Association
Conference, Winnipeg, 25 June 1974

Canadian Library Association
1974

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Jack E. Brown
National Science Library

One of the major problems in organizing the Theme Program for the CLA's 29th Annual Conference was not the finding of well qualified and knowledgeable people to talk on the theme topic but rather in determining what the subject to be discussed really was. The root of the difficulty lay, like so many of the world's problems, in terminology and semantics.

What is meant when we talk of library networks and systems or information networks and communication networks? During the past few years many papers have been written discussing the future of international networks, national networks, provincial networks, regional networks, etc., but as yet there appears to be no generally accepted definition of a library network. Joseph Becker, in a paper written back in 1968, defined a network as "an inter-connection of things, systems, or organizations."* Adding to this definition the word "information," he then goes on to describe the ideal information network as exhibiting such characteristics as formal organization, a communications system. bi-directional operation, a directory look-up system to identify the unit that must be able to respond to a query, and a switching capability to determine optimum routes.

* Becker. Joseph, and Olsen, Wallace C "Information Networks " In Carlos A. Cuadra, ed , Annual Review of Information Science and Technology. Vol 3 Chicago Encyclopaedia Britannica, 1968, pp 289 90

Based on this definition, it is evident that a single library can be shown to be an information network for its staff and users. The library has a formal organization governed by established policies and procedures, the staff is grouped into divisions with distinct functions. The interfaces among divisions through individual staff members using common files, and the interaction of staff and files with users constitute the communications system. The directory look-up is provided by the bibliographic control apparatus which comprises all the main files for locating items in the library collection. The main catalogue affords the most complete coverage; some of the other files are tangential to it; the contents of others overlap.

Despite such an interpretation, the popular concept of a library or information network still appears to be that of a system wherein vast quantities of data and information are stored in electronic memories, manipulated by computers, and transmitted and switched by telecommunication gadgetry. In actual practice, these are simply new techniques which are and will be used increasingly to facilitate the development of networks. Library networks are essential: a form of co-operation in which libraries attempt to make the greatest possible use of available information resources by sharing them through arrangements of varying degrees of formality. These networks have been in existence in Canada and elsewhere almost since the first libraries were established.

Recognizing this potential source of confusion, it was agreed in the early stages of theme program planning, that the speakers when talking of library networks and systems would be referring to any technique or procedure which links together for the mutual benefit of a large community of users, the resources and services of a group of libraries, and that the use of computers and other electronic equipment was one way of facilitating this linking process. This broad concept is reflected in the following papers which discuss and describe Canadian library networks and systems as they exist today and as they are being planned for future development at the local, provincial, regional and national levels.

THE ORGANIZATION OF LIBRARY SYSTEMS AND NETWORKS — THE EXAMPLE OF BRITAIN

H. T. Hookway
Executive Director, The British Library

The past ten years have seen remarkable progress in
the development of library services in Britain. The
Public Libraries and Museums Act of 1964 placed
public library services under the supervision of the
Secretary of State for Education, and made it
compulsory for all local authorities to provide a
comprehensive and efficient service; the Parry
Report on university libraries was issued in 1967 and
its recommendations have had a significant effect
on the operations of these libraries; in 1969 the
National Libraries Committee reported; in 1971 the
Government issued a White Paper announcing its
intention to set up a new national library, the
British Library Act followed in 1972 and the new
library was set up in July 1973; and further striking
changes in public library organization took place
in April of this year as a result of the re-organization
of local Government.

Although much planning, discussion and action
had of course taken place in earlier years, I propose
to take 1964 as the starting point for my talk
because in my view it is over the past decade that
the foundations of a modern national library system
have been laid.

National Planning

It will, I think, be generally agreed that libraries of
all kinds, together with information services, are an
essential part of the infrastructure needed to sustain
and nourish civilized society; the libraries and infor-
mation services of a country, taken as a whole,
should aim to collect and store all information

likely to be needed, to provide access to it as
rapidly as necessary and to arrange its supply in the
most useful form where it may be most effectively
employed. This is no easy task, however, the
increasing quantity of materials in the form of
books, periodicals, tapes, microtexts, films, photo-
copies, prints, computer data banks and so on results
in storage becoming more expensive; retrieval more
difficult in many cases; and selection, acquisition,
and bibliographic processing become larger, more
expensive and more complicated operations.

To attempt to meet the national objective set out
in the preceding paragraph requires that the library
services satisfy a wide range of educational, recrea-
tional, scholarly, industrial, commercial and other
needs. If we assume that library materials are not
used much before the age of 5 years, then we are
talking about a British population of roughly 50
million individuals all of whom should require
access to a library service at one time or another.
Fortunately, not everyone needs the same material
at the same time, and, equally fortunately, humans
have only rarely solved problems by searching
enormous quantities of information exhaustively,
but nearly always by finding wa   of conducting
their investigations in a highly s ective manner.
Nevertheless, the range of interests developed as a
result of the provision of enhanced educational
opportunities; the stimulus of the media, especially
television; the growth of interest in environmental
problems and the quality of life; increased leisure;
and the increasing complexity of scientific, industrial
and commercial requirements place exceptionally
heavy demands on libraries which then need to
develop systems and networks to meet these demands.
Individual libraries or small groups of libraries no
longer find it possible to meet from their own re-
sources the increasingly sophisticated demands of
their users.

In Britain, as in Canada, school libraries, public
libraries, university libraries, the National Library
and a host of special libraries provide a wide range of
services designed to meet the needs of different
categories of user. The services have tended to grow
up piecemeal, with attempts to maximize the
effectiveness of their operations being made through
schemes of voluntary co-operation of various kinds.
To attempt to produce a detailed, comprehensive
and systematic plan for the development of all
these services to meet national goals for social,
economic, cultural and industrial advancement is to
face the planners with a complex multidimensional
problem of a kind familiar to social scientists, and
where forecasting and other techniques are notor-

ously inadequate. But in any case, a comprehensive
approach of this kind is not in my view either
necessary or desirable. Many activities are better
regulated in response to local needs rather than
within the constraints imposed by the operation of
a central plan. National planning should therefore
focus on a limited range of crucial issues so that a
flexible and responsive national system can evolve
naturally over a reasonable period of time. These
crucial issues are related mainly to the provision of
appropriate legislative, institutional and financial
structures; to the development of standards of all
kinds; and to manpower needs

In developing this theme, I propose to concen-
trate largely but not exclusively on two particular
aspects of recent developments in Britain — the
re-organization of the public library system, and the
creation of the British Library. To plan at all
requires the existence of planning machinery, and
developments in Britain have moved at an accelerated
pace since 1964 when appropriate arrangements
were made as a result of policy responsibility in
relation to all libraries in the public sector being
concentrated in the Department of Education and
Science, with the exception of special libraries
maintained by other Government departments.

The Public Library System
In 1964 also, the Public Libraries and Museums Act
came into effect. This Act had two most important
provisions: the public library service was placed on
a statutory basis with the Secretary of State charged
with the responsibility for supervising and promoting
the improvement of the library service provided by
local authorities in England and Wales, and a duty
was placed on every local authority that was a
library authority to provide a comprehensive and
efficient library service. In Britain, local authorities
are financed by Treasury grants, by loans, rents
and rates. Grants and loans are wholly controlled
by the Government. The rate is the only local tax;
it is levied on the annual value of property other
than agricultural land. At present the Government
contributes about 60 per cent of the total finance.
Thus both central and local government have a
direct concern in the financing and therefore the
development of the public library service. It is for
the local authority concerned to determine what
proportion of its revenue and capital expenditures
is devoted to libraries, but the statutory powers of
the Secretary of State provide safeguards to ensure
that the library service is not run down in hard
times and is not overlooked in times of growth, and
that individual authorities, as well as the service

taken as a whole, meet acceptable standards

However, it soon became apparent that the great
range of size of library authorities - from under
30,000 population to over a million - was resulting
in uneven growth of the service. With the best will
in the world, the small local authorities had not the
manpower or the financial resources to provide an
acceptable level of service to their users; forward
projections indicated that the situation would deter-
iorate further in the future. Significant changes in
the organization of local government were being
planned, and advantage was taken of this to provide
for further development of the public library service
and to increase the size of library authorities with a
corresponding decrease in the number of separate
authorities. The Local Government Act of 1972
provided for the creation in April 1974, outside
Greater London - where the existing arrangements
are unchanged - of 75 library authorities in England
compared with 314 at present and 8 authorities in
Wales compared with 37 at present. Thus, from
April of this year there has been a dramatic reduc-
tion in the number of library authorities. Scotland
is following suit, though with variations from the
pattern set in England and Wales, and Northern
Ireland has also reduced substantially the number
of library authorities. The overall effect has been to
reduce by about two thirds the number of authorities
with library powers in Britain. The new authorities,
with a very few exceptions, have populations ranging
from at least 100,000 to well over 1,000,000. Before
April 1974 there were only 10 authorities with
populations of more than a quarter of a million
outside Greater London, now there are 56.

The creation of these library authorities with
larger total resources is intended to facilitate the
development of library services over wider areas than
hitherto. The new authorities will be better able to
meet the needs for comprehensive facilities of the
communities they serve. They will also be able to
deploy specialist staff more effectively and econo-
mically and to make full use of computers, photo-
copying, audio visual equipment, telex and other
library aids.

I mentioned earlier the complex inter-relation-
ships between library objectives and other elements
in the national infrastructure, such as education. An
important feature of the new legislation is that the
library authorities are coterminous with the author-
ities for education, health and social services. It thus
becomes much easier to develop a whole range of
cost effective support services for these sectors. For
example, services for schools can include the
provision of loan collections of books, centralized

facilities for book ordering and processing and multimedia collections. When the location of public library service points is under consideration, the fact that the education and library services are coterminous makes it much easier to establish dual purpose libraries serving both the general public and pupils of a particular school. Such use can result in a significant improvement in both the staffing and the bookstock available to a school.

The increased resources available to the new authorities also make it possible for them to provide more extensive and effective services to local industry, commercial organizations and so forth. The authorities are also able to deploy much greater resources for the support and stimulation of local cultural activities by providing space and equipment for exhibitions, meetings, lectures, concerts, plays, films and audio-visual presentations of various kinds.

Thus, in this case, the development of the appropriate legislative structure, a shared basis for financing, and the creation of the appropriate institutional arrangements — a small number of large library authorities — have been the crucial planning issues to be settled in order to create a remodelled public library system. However, although substantial resources are devoted to sustaining these activities (about 95 million pounds sterling in 1973) and large scale though the operations may be (aside from reference and information activities, well over 600 million books were lent), the system is not self-sufficient. It has to rely on other systems to provide some at least of the total supply of books and information it must provide. For example, foreign material, advanced material for studies in depth, and much technological and scientific material will usually need to be sought elsewhere.

The British Library

A variety of techniques using regional catalogues and inter-library lending have of course been used for many years to obtain material not in stock, but their inadequacies and the confused and wasteful arrangements at the national level for reference, lending and bibliographical services led the Government in 1967 to set up a National Libraries Committee to examine the functions and organization of the British Museum Library, the National Central Library, the National Lending Library for Science and Technology and the Science Museum Library in providing national library facilities and to consider whether in the interests of efficiency and economy such facilities should be brought into a unified framework. The Committee recommended in 1969 that the first three organizations, together with the

British National Bibliography Ltd., and the Office for Scientific and Technical Information should be brought together under a new statutory authority, and the Government accepted the recommendation. Much detailed planning followed and in 1972 the British Library Act received Royal Assent, followed by the establishment of the statutory authority in 1973. The resources at the disposal of the new body are, by British standards, substantial: for the current financial year, expenditure is estimated at over 12 million pounds sterling, and there is a staff of 1700. I do not propose to describe in detail the activities of the British Library, but rather to identify some of the key problems the Library is intended to resolve, to demonstrate how its activities serve to make existing services elsewhere more efficient, and to indicate how these activities can help the development of a national library system.

I stressed earlier the impor- -e of planning to create appropriate legislativ. .eworks; and in this context the British Library Act is worth studying for a variety of reasons, of which I have chosen three. First, the Act specifies that the Library is to consist of a comprehensive collection of books, manuscripts, periodicals, films and other recorded matter, whether printed or otherwise; therefore the Library has to be concerned with the whole range of non-book material, and the Government in determining the level of resources to be made available to the Library has to bear in mind this broad remit. Second, the Library is to be managed as a national centre for reference, study and bibliographical and other information services in relation both to scientific and technological matters and to the humanities: two important principles are therefore established — the Library's activities cover information services of all kinds and it is to cover all subject fields. The third point is that it is within the functions of the Board, so far as they think it expedient for achieving the objects of the Act and generally for contributing to the efficient management of other libraries and information services, to carry out and sponsor research; and to contribute to the expenses of library authorities or others providing library facilities, whether for members of the public or otherwise. It will be seen, therefore, that not only is the British Library well equipped to provide central services for other libraries in the country, but it also has the legal powers to act as an agent of the Government in promoting the growth of more efficient and cost-effective library and information systems. The Library has been planned deliberately to be at the hub, rather than the apex, of the nation's library services. The apex of a hierarchically structured

system is often remote, difficult of access and somewhat divorced from the operational and policy problems of those lower in the hierarchy. By contrast, the hub should be sensitive and immediately responsive to the stresses and strains elsewhere in the system. The Library functions have been grouped in three operational divisions – reference, lending and bibliographic services – together with a central administration and a research and development department. The British Library Board is the Statutory Authority charged with managing the Library: it has a part time Chairman, a full time Chief Executive who is also Deputy Chairman, three other full time members who have charge, as executives responsible to the Chief Executive, for the three operational divisions and nine part time members. An extensive system of advisory committees is about to be set up to help ensure the Library is responsive to the needs of its users.

Interlibrary Lending Networks
Interlibrary lending in the United Kingdom is now a very large activity. It is estimated that around 3 million loan requests are made every year, of which some 2 million are sent direct to the British Library's Lending Division. The regional library bureaux – of which there are nine, mainly servicing public libraries, account for about half a million requests and about another half a million are requested direct from other libraries without going through either the national or the regional interlending networks. Universities, institutes of further education, and special libraries of all kinds are more dependent on interlending than the public libraries, although as I have pointed out earlier the public library system is not self sufficient. Demand on the British Library is currently growing at the rate of 15 per cent per annum, whereas demand on the regional network has been slackening. The main factors accounting for the growth of demand on the central facilities are the acquisition programme of the Library – which now aims to acquire all significant serials and reports in all languages together with English language monographs – and the speed with which loan requests are met. The categories of material collected account for about 95 per cent of all interlending in Britain and the Library's Lending Division meets about 83 per cent of the demands made on it by direct loan from the central stock. The main burden of interlibrary lending has therefore been lifted from individual libraries who are free to adapt their acquisitions and stock holding procedures accordingly. From the national viewpoint, the interlending process is not only quicker

and more efficient; it is also cheaper. The cost of dealing centrally with a loan request is about one third that of dealing with the request through a dispersed network based on union catalogues.

Although the central lending collection is large it has to be supplemented by the resources of other libraries, and therefore it has been important to ensure that an appropriate network of co-operating libraries is set up to meet the deficiencies in the central stock. Aside from the great resources of the British Library, we have chosen to rely mainly, though not entirely, on a limited number of large libraries to provide the back up service. The number of requests made is fairly substantial, the cost of dealing with the requests is not negligible, and there is need for rapid response. We therefore make use of the provisions of the British Library Act, and pay these large co-operating libraries for their services so as to ensure they can deploy adequate resources to meet our requirements.

Bibliographic Networks
An effective and economical bibliographic network is necessary if libraries are to function at optimum efficiency. The high cost of providing bibliographic access to materials has prompted the development of co-operative and centralized arrangements for the services required. Computer based services are obviously attractive in this context because they enable us to process much larger quantities of information than could be done by manual means; the costs of handling these ever larger workloads are stabilized – for, unlike manual system costs, machine costs do not rise linearly with the workload; and new products and services can readily be generated. Effective use of these services is fundamentally related to the adoption by all concerned of appropriate standards. We regard standardization as such an important factor in the development and use of our centrally produced computer services that we have set up a Bibliographic Standards Office in the Library to act as a national focus for discussion on the internal and external standards to be used.

The general approach of the British Library towards servicing the library community is that it should act mainly as a channel of communication and transfer between national bibliographic data banks, including of course the British data banks, and the requirements of the U.K. library community.

In following this line, the central services provided now by the British Library, and those to be provided in 1975 and later years, should lead to rapid growth of computer based networks in Britain. At present, the Library's MARC tapes service can

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provide for, current cataloguing, a bibliographic listing, catalogue cards and machine readable cataloguing input. The machine readable input can be processed directly by an individual library, a library authority — where the central library would presumably do the job, by a region, or by the British Library, which is prepared to offer a selective service of catalogue records covering the additions to stock of individual libraries and merging its MARC records with records produced by libraries of books added to stock which are not covered by MARC tapes. The balance of advantage as between these various approaches depends on the resources of the library or library system involved. The terms on which the tapes or individual records are made available have been designed to ensure the maximum local utilization of the centrally generated system, which maintains enough control to avoid the creation of many competing quasi or para-national files.

A further step has been to convert the British National Bibliography, back to its beginning in 1950, to machine readable form in MARC compatible format. This new data bank will be of particular value to the new library authorities who face the task of building catalogues of the combined holdings of the former authorities, and whose stocks of material consist largely of items listed in the National Bibliography.

By the end of the year all the regions will be operating a system first set up, with Government development support, by the London and South East Region (LASER) for recording accessions in numerical form by International Standard Book Number (ISBN), with coded library locations, and sorting by computer. The ISBN — location lists are output on COM and can be used for interlending in two ways; either libraries apply to regional headquarters, which supplies them with a location, or they can buy the microfilm catalogues and borrow direct from one another. The system is both cheap and efficient, and the British Library does the processing centrally at no charge to the regions. It is possible therefore to integrate all the records to make a comprehensive ISBN catalogue for the intake of public libraries in the country. This will be important both at the national and the local level for determining acquisitions policy, as well as increasing the efficiency of interlending.

From 1975, the machine based current cataloguing

activities will be extended to all British Library intake. It will then be possible to provide a range of new services covering the areas of British Library intake that are not part of the MARC service provided at present. On line access within the Library is being provided for on an experimental basis and may be available to other users, but in the immediate future the relatively high telecommunications costs in Britain may inhibit rapid growth of use outside the Library. We shall have to make a decision soon on whether to convert the existing manually produced catalogues. The cost will be high, but the benefits are likely to be great for libraries throughout the world. We should be able to decide what to do later this year, when our analyses of the problems and costs are complete. These developments are likely to be of particular value to university and other research libraries since they will be able to redeploy their own resources more effectively if they accept the new central services and adopt the same standards.

International Networks
National systems can no longer flourish on their own, and it is important to achieve the maximum practical level of international standardization so that records and information can be shared without difficulty. It is for this reason that the British Library has adopted the Anglo-American cataloguing rules and, for machine based activities, the MARC format. Looking to the future, unless more national telecommunications authorities can be persuaded to meet the challenge of providing cheap on line access to data banks, we shall not realize the full potential of international networking.

Conclusions
I hope I have persuaded you that concentration on a limited number of crucial issues — legislation, organization, finance and standards — has resulted in positive progress towards the development of a British Library system. Although I concentrated deliberately on a few examples, and made little or no mention of university or special libraries, or information services in general, nevertheless I hope that these examples have shown how interdependent on each other are the various categories of libraries, and how their services are now starting to develop in a co-ordinated, rather than competitive way.

NOT THE
LAST SPIKE YET

Guy Sylvestre
National Librarian of Canada

The last time it was my privilege to address your association was four years ago, almost to the day, in Hamilton. It seems like yesterday. The progress report then presented to you was entitled "The Prime Mover the Role of the National Library." There is no need for me to repeat now what I said at the time. Some of you may remember that I talked about the magnitude and complexity of the problems facing us as a result of the current information explosion, as well as about some of the initiatives taken with a view to meeting the challenge successfully.

The main points mentioned at the time were the completion of the Systems Development Study which recommended the development of an integrated information system throughout the National Library; the then recent invitational conference on cataloguing standards; the adoption of the new National Library Act in 1969; the cabinet directive of the same year instructing the National Research Council to develop, under the general direction of the National Librarian and in concert with existing information organizations, a national scientific and technical information network; the creation of a Research and Planning Branch within the National Library, charged with the responsibility of conducting research and planning work for the future development both of the National Library itself and of national and international library network .; the strengthening of the operational branches made necessary by the constantly increased demand of services made on the Library; the creation of the

Music Division, the first subject division established in the Reference Branch; the negotiation of exchange agreements with Britain, West Germany, Belgium and the State of New York; the improvements to the national bibliography, *Canadiana*, and the submission by the National Librarian to AUCC of a preliminary proposal for "a co-operative acquisition plan for Canada." These were the main elements of the progress report submitted to the Association in 1970, two years after I had taken office.

What you expect from me at this time is not, I am sure, a philosophical or theoretical statement about networking, but a further progress report about the National Library's recent activities aimed at developing a better integrated nation-wide library network. Others will be speaking about parallel efforts at other levels; there will be no need for me accordingly to trespass on their preserves. There would be no time for me to do so in the time allotted to me, for as I stand again before you this morning four years later, I have a great deal more to report, and less time to do so. All that is possible is to give you a bird's eye view of our most significant programmes, of our current studies and plans, and some idea of what we would like to do next, provided the required human and financial resources are available. The human and financial resources authorized in order to implement the National Library programme have increased from 246 man-years and $2,600,000 at the time of my last address to 449 man-years and $7,278,000 this year, and I expect to be requesting supplementary estimates in a few months in order to make both ends meet. Substantially increased funds were appropriated these last four years in order to make it possible for the National Library not only to meet the increased demand made on existing services, but also, and even more so, with a view to initiating and developing new programmes and to introducing new techniques to attempt to cope more efficiently with the tasks ahead of us. I naturally welcome this opportunity to participate in this programme. The information explosion is such a challenge to us all that the only solution is in sharing through networks. I need not philosophize much longer; our chairman Jack Brown has already said all that needed to be said in this respect. What my remarks will make clear, I hope, is that all the significant initiatives taken by the National Library were taken with a view not to developing it into a big institution operating in splendid isolation, but to making it the central node of a constantly-evolving nation wide network with international interfaces. This is the basic philosophy which commands the efforts we

make in order to improve our collections, our services and our systems. To report to you chronologically on these developments would lead only to confusion. I accordingly propose to divide my remarks into three general areas: (1) collections development and rationalization of research collections; (2) lending and reference services; and (3) development of systems and networks.

Collections

On the subject of collections I shall be brief. The Book Purchase Account has grown from $200,000 four years ago to $639,000 this year. This is still a very modest sum. However, together with the legal deposit regulations and a number of exchange agreements, our book budget makes it possible to expand our acquisitions programme especially in literature, music, history, economics and political science (incidentally, we are acquiring the Goldsmith-Kress Library of Economic Literature), government documents both in the original and in microforms, sound recordings and, on a limited scale, manuscripts and literary papers. Our membership in the Shastri Indo-Canadian Institute brings thousands of Indian titles every year, and thanks to the generosity of the Canadian Jewry, we are acquiring a substantial collection of microfilms of ancient Hebraic manuscripts held in libraries in the USSR and other Eastern European countries. Special purchases and other gifts are too many to be mentioned here; information about them may be found both in my annual reports and in the National Library News. More detailed information on our acquisitions will be available eventually when the Collections Development Branch publishes a quarterly review in which our most important acquisitions will be reported, described and analyzed.

Now that the original bibliographic centre has grown into a true library, the Branch is currently involved in reviewing the guidelines for the development of our collections and these will be published as soon as they are approved; it is essential indeed that Canadian libraries be aware of the direction in which the National Library will develop its collections. It was, and still is, difficult for the National Library to establish a sound, comprehensive acquisitions policy which would ensure that the limited funds available are used to meet priority needs. Until now, except for Canadian material and bibliographic tools which we collect comprehensively, our practice has been to attempt to fill the most obvious gaps; we have succeeded reasonably well if you consider that of the 125,000 items which we were asked to locate through the Canadian union catalogue last

year, we were able to lend from our collection one in four. This is still unsatisfactory, but the percentage increases every year and we are gradually relieving other Canadian libraries of an increasing percentage of the costly interlibrary loan burden. I shall discuss later the desirability of a more ambitious national lending service. For the time being, the National Library collection grows at the annual rate of more than 35,000 monographs and more than 100,000 government documents, not counting a substantial number of microforms. Four years ago, the National Library was subscribing to 2,623 periodicals; it now receives more than 10,000, including most periodicals covered by the tape services scanned by CAN/SDI. This is necessary back-up to this current awareness service which we have extended to the humanities and the social sciences last year. I will have more to say about it in a moment.

With a view to defining our acquisitions policy and hopefully, to making it easier for other libraries to do so, we initiated a series of surveys of collections in order to determine where and what were the strengths, the weaknesses and the gaps. As you know, we have published a substantial quantitative analysis of Research Collections in Canadian Libraries, starting with university libraries whose collections were analyzed in five volumes to be complemented by a sixth which is in press. In press also is a survey of collections in federal government libraries, which was a part of the general survey of federal libraries to which I shall revert later. We also published a special study on Theatre Resources in Canadian Libraries conducted by Miss Heather McCallum, and we propose to conduct future surveys and publish special reports on collections in various disciplines rather than on categories of libraries. We are now examining law collections, with the assistance of Mrs Viola Bird and an advisory committee of CALL. The report will present the actual state of law resources and, we hope, contain a guide for the development of law collections and possible recommendations regarding the role the National Library may play in the future in the field of law. We propose to compile and publish surveys of collections in all fields; music, exchanges, Canadian, foreign and international official publications in research libraries in Canada will come next.

These surveys do not only facilitate the use of collections by those who need them, they should also make it easier for many libraries to write and to better rationalize their acquisitions policies. Canada is still a book-poor country where there are few strong research collections in the humanities and the social sciences; as in most countries, our libraries

hold only a fraction of the literature covered by the millions of citations found in thousands of bibliographic tools of all sorts. The analysis of inter-library loans traffic will also provide us with valuable information of the most serious gaps which exist in relation to actual needs. In any case, it would appear that in a country so poor in books, so large in size and so small in population, nothing short of a nation-wide plan could go very far in meeting the challenge of the information explosion. When the whole country can acquire only a part of the research material required by Canadian users, how could a province afford to go it alone?

As you know, this is not a new topic, several reports on the problem exist, which contain sound recommendations; but there are many more who are in favour of rationalization than are prepared to be rationalized, which in some cases would mean: to be rationalized out of existence. There is nothing spectacular to report as yet in this respect, but there is apparently a growing realization of the need for some sort of co-operative plan in order to avoid the unnecessary duplication of little-used material and, as a consequence, to permit the acquisition of more diversified collections. It is my opinion, when I compare the world-wide explosion of research and information with the limited human and financial resources available to us all, that the only form of insurance we can afford to buy against possible demand is a form of group insurance. This is even more critical when budgets are frozen and prices soar, as they now do. It is also my opinion that governments at all levels should increase the moneys they appropriate to libraries, as they did in the late sixties; but my view is that such additional support is more likely to be forthcoming if libraries clearly demonstrate through concrete action that they are making every effort possible with a view to developing co-operative acquisitions plans, as well as compatible systems.

I very much hope that, in respect of collections rationalization, the recently-established Collections Development Branch will exercise the necessary leadership, it now combines, under one Director, Mr Preibish, (1) the selection and acquisitions operations, (2) the gifts and exchange office, (3) the resources survey division, and (4) the recently-organized Canadian Book Exchange Centre which receives, lists and redistributes hundreds of thousands of surplus items every year. The Centre is now moving to a separate building, and is improving its procedures. Incidentally, the head of the Centre, Mr Camioglu, is attending the Annual Meeting and will be glad to answer queries.

To conclude this part of my remarks, may I say that network planning includes, or should include, determination of what is to be placed on the network, and this poses clearly the problem of collections rationalization. Well, so much for collections.

Lending and Reference Services
As to our lending and reference services, they naturally increase and improve as our collections grow and as our catalogues become more comprehensive and are better maintained. Libraries are not museums and they should be judged principally by the quality of the service they provide. We still have growing pains, but the growth of our services over the past four years has been quite phenomenal. Loans have increased from 69,000 to 110,000; location requests, from 100,000 to 129,000; reference questions, from 11,000 to 59,000. The number of libraries using Telex to communicate with us and with one another has doubled: from 78 to 176, which shows the importance of fast communication. Interestingly enough, some 80 per cent of the titles requested are located in the Canadian union catalogue and are held in Canada, which indicates that if Canadian collections are weak in absolute terms, they may not fall as short of actual needs as some say they do. (I say: "may" for we have no information as yet (we will within a year) on the degree to which Canadian libraries go directly to U.S. libraries for items located in the National Union Catalogue of L.C. without coming to the Canadian union catalogue at all.) The Canadian union catalogue has grown tremendously — more than 6,000,000 cards were received during the last four years — and, as you know, a national task group was appointed to advise on the future of the growingly unmanageable monster, to which I will come back when I discuss systems and networks more specifically later in my paper. Suffice it to say for now that, conceived and developed as a location tool, it has provided for years an indispensable key to the resources of some 300 libraries and has facilitated their use by all who need them anywhere in Canada. Networking is the very essence of union catalogues, as it is of published union lists. I very much regret to have to say that the outdated union list of periodicals published six years ago will not likely be replaced by a full up-dated list for another two to three years. However, owing to our participation in CONSER, a North American programme aimed at creating a comprehensive data base on serials held by large libraries on this continent, we should be able to produce the revised union list according to accepted international standards more efficiently

and more economically. In the meantime we propose to issue such partial lists as the recently published *Union List of Serials Indexed by Social Sciences Citation Index Held by Canadian Libraries*. We are also working on a *Union List of Canadian Newspapers* and a *Union List of Foreign Newspapers*, all tools which will be kept up to date at all times. I am also seeking funds to compile a union list of indexing and abstracting services in Canada, a union catalogue of microform masters, and a register of translations of unpublished reports. All could form the basis of co-operative programmes which I propose to promote as soon as the necessary human resources are available. We cannot do everything at once and I propose to discuss the feasibility of a co-operative plan for indexing Canadian serials with Mr Peter Greig when he returns from Britain.

Now that we have consolidated most of our general services, the time has come to create special divisions, headed by subject specialists, in order to provide more sophisticated services in certain fields. I already mentioned the Music Division which in four years has developed one of the best music collections in the country. More recently, a Library Documentation Centre was established to acquire, analyze and distribute published and unpublished reports on libraries and information science; the Centre also puts out directories, such as the recent *Federal Government Libraries* and the *Directory of Library Associations in Canada*. More are in preparation. The Centre is also the Canadian correspondent for UNESCO's ISORID (International System on Research in Documentation) and the clearing-house for IFLA papers.

In addition to traditional lending and reference services, the Public Services Branch (recently renamed the Reference Branch) now offers a current awareness service in the humanities and the social sciences, which is an integral part of the CAN/SDI service developed at the National Science Library. Using the software developed by the NSL to access a variety of data bases in the field of science and technology, our service now alerts subscribers to recent publications covered by three tape services: LC's MARC, ERIC and SSCI. Soon will be added *Canadiana* and *Psychological Abstracts*. Plans are also under way to institute an on-line retrieval service which will permit computer-assisted dialogue, via a CRT terminal, with this central system. This is probably the best answer found so far to the needs of individuals or groups who conduct either basic disciplinary, or problem solving multi-disciplinary, research alike.

The Branch now comprises also a Rare Books and Manuscripts Division and it established a central file of unpublished bibliographies, which permits us to avoid much unnecessary duplication of efforts. More recently, I decided that the time had come to examine the possible role of the National Library in the area of services for the visually and physically handicapped. I formed a task group which is examining existing services, strengths, weaknesses and gaps and will submit a report with recommendations aimed at improving existing services, creating new ones and co-ordinating them all. I expect that the National Library's involvement will be principally (1) the development of standards, (2) the creation of a union catalogue, and (3) the production of Canadian books on tape. This is another good example, I think, of our efforts to build networks for the benefit of all concerned. The position of Chief of this new service has been advertised, as has that of the Children's Literature Librarian/Consultant.

In order to be able to develop existing programmes and to launch new ones, the Public Services Branch, the largest in the Library, was completely reorganized and three senior co-ordinators were appointed, one for reference and lending services, one for union catalogues, and one for special services, who assist the Director, Miss Flora Patterson.

Supplementing these services, the National Library's contribution to the Federal Multicultural Programme, the Multilingual Biblioservice will soon make available to ethnic groups, through public and regional libraries in all provinces, collections of books in non-official languages both for educational and entertainment purposes. The head of this new service, Mrs Zielinska, is also in Winnipeg this week and will be happy to answer your queries.

Finally, may I say that I propose to extend the opening hours of the Public Services Branch later this year with a view to making our resources and services more readily accessible both to local readers and to those served through their local libraries anywhere in Canada, from St John's to Victoria. The Reading Rooms are already open 24 hours a day; reference services will be available from 8 o'clock in the morning till 9 o'clock in the evening (that is from 9:00 a.m., Atlantic time to 6:00 p.m., Pacific time), and Saturdays from 9.00 a.m. to 5:00 p.m.

May I mention that many Canadian libraries do not make as full use of the reference services available to them as they could in order to assist their own readers; this seems to be true especially of public libraries whose staff do not seem to avail themselves of the back-up services provided by the National Library, as much as research libraries do. There are regional disparities in the library field too,

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as you all know only too well, and our services are in a way a form of equalization payment available on request. Let me make it clear to all here that our services are equally available to all categories of libraries anywhere in Canada.

This is equally true of the bibliographic services provided by the Cataloguing Branch. You already know, I am sure, that priority was given in our auto-mation programme to *Canadiana* with a view to making it possible for the National Library to make her full contribution to UBC (Universal Bibliogra-phic Control) for the benefit of Canadians and foreigners alike. I shall discuss *Canadiana* under "systems and networks" in a moment, but before doing so, let me mention briefly the annual inven-tories of theses accepted by Canadian universities and the cumulation just published which covers the years 1947-1960 and lists 14,971 theses. Another service is the publication of Canadian theses on microfilm initiated in 1965, which was just conver-ted to microfiche. At present, 24 universities participate in the programme on a regular basis; the microreproduced theses are listed in *Canadiana* and will this form an important part of the *Canadiana* data base which will be searched by CAN/SDI and put to other uses too.

To sum up, we attempt to develop our services in such a way that they do not duplicate those of other libraries and that they occupy their proper place in the Canadian network of libraries

Systems and Networks
Let me now come to systems and networks as such.

I said earlier that, with complementary collec-tions and compatible systems, we could share much better the collective resources which we acquire with our limited means. Since participants in a communi-cations network require a common language, and since the National Library should be the central node in such a network, it was essential to co-ordinate as fully as possible the development of our systems with those of other libraries. I referred earlier to the Systems Study Report and to the national conference on cataloguing standards, which were initial steps in that direction As you know, I subsequently appointed two task groups, one on cataloguing standards, the other on a Canadian MARC format Their recommendations, contained in two excellent reports, are known to you and they have been, or are being, implemented, at least as far as the National Library is concerned. Detailed statements on these two reports may be found in the *Canadian Library Journal* of May - ne 1973 and in the *National Library News* of

July-August 1973, respectively.

Those of you who may have examined recent issues of *Canadiana* would have noted that virtually all the basic recommendations of the two reports have been translated into action, and without much delay. Recommendations regarding the revision of the classification schedules F5000 and PS8000, the development of a KE (Canadian law) schedule, the development of a list of Canadian subject headings in English and the adoption of the Laval list for subject headings in French were all acted upon. The latter is a perfect example of the kind of co-operation I heartily welcome between the Nation-al Library and other institutions with a view to avoiding unnecessary duplication of work. Negotia-tions with Laval were successful, a joint editorial committee was established and all French subject headings used in *Canadiana* are now taken from Laval's list. New subject headings are adopted jointly. As to the English list of Canadian subject headings, it is being compiled under contract by Mrs Gerda Ferrington and Mrs Mildred Linton and it is expected to be completed by next summer. The classification schemes for Canadian literature and history were similarly revised by Mr T. R. McCloy and I hope that they will be released soon. The Canadian law classification is also being developed, this time by the Library of Congress with the participation of one of our staff, Mrs Ann Rae who is posted in Washington.

Cataloguing entries for French publications are now prepared according to the *Régles de catalogage anglo-américaines,* the French version of the North-American text published by ACBLF (now ASTED). Steps were also taken to ensure more consistency in the application of the Dewey Decimal Classification, through consultation between LC, BNB, the Austra-lian National Bibliography and the National Library of Canada.

Although Canadian researchers in many discipli-nes depend heavily on information generated abroad – and this is especially true for the natural sciences – it was essential that a high priority be given to *Canadiana*. This was done. As you may know, this programme was divided into three phases. The Canadian MARC format for monographs was designed and is used for the processing of mono-graphs and theses. This Phase I became fully opera-tional early in 1974, and computer-produced cards, tape services and printed copy for Parts I and II of *Canadiana* are available for distribution; all are produced from machine readable cataloguing (MARC) records: the printed copy for the text and index is produced by photocomposition techniques. In order

to test the format, a Canadian MARC Tape Pilot Project was initiated in November 1973, with 11 participants, for a one-year experimental period. The tape service will be available for general subscription late in 1974 or in January 1975. The proof services for Parts I and II, are now in the improved format of catalogue cards rather than reproductions of varityped copy previously available. We had difficulties in the early stages of the programme and unfortunate delays occurred in the publication of *Canadiana*. We are making substantial efforts and, barring unforeseen difficulties, the programme should be on the rails again soon. The system is also used for the creation of machine-readable bibliographic records and the production of catalogue cards for our internal catalogues.

Work on Phase II, Serials and Official Publications (Parts III, VII and VIII of *Canadiana*), is progressing satisfactorily. The serials format has been prepared in draft form, programming has started, and the MARC Editor's Manual for Serials is being prepared. All parts, except for audio-visual material, will be automated as of January 1975. The design of an automated authority file is being undertaken also as part of Phase II. Phase III, scheduled for implementation in 1976, will cover audio-visual materials, at which time *Canadiana* and all its by-products will be fully computerized.

In another co-operative agreement between the National Library and the Canadian Film Institute, the latter now provides the Library with data on Canadian film production; documentation is provided on a continual basis and is used in Part VI of *Canadiana*, films, filmstrips, etc. The success of this contract is evident in the substantial increase in the number of films included in *Canadiana* in recent months.

With a view to establishing the complete bibliographic control of Canadian publications which came out before the national bibliography was instituted less than 25 years ago, I recently created in the Cataloguing Branch a new division, the Retrospective National Bibliography Division, charged with the responsibility for the eventual publication of a definitive national register of all publications from the introduction of printing in Canada in 1752. This should probably be a co-operative effort and we are now examining the recommendations of the recent National Conference on the State of Bibliography in Canada It is too early to discuss them here. May I say, however, that the suggested clearing-house could easily be established within the National Library and that the proposed Advisory Council on

Bibliography in my opinion should probably not be the independent body recommended but a committee of the National Library Advisory Board with which I shall discuss this when it meets next fall.

Last year, the National Library was named as the official International Serials Data System (ISDS) National Centre for Canada. Planning for the first stage of implementation followed, and ISDS Canada became operational in January 1974. Present operations are manual, but planning and systems design for an integrated automated system combining the requirements of ISDS Canada with those of *Canadiana* are nearly completed. The integrated system will cover both *Canadiana* and ISDS Canada requirements, providing the regular *Canadiana* outputs, printed volumes, proof services and MARC tapes, plus a separate ISDS Canada tape covering the required data elements for the ISDS international serials data base located in Paris. At present, Canadian ISSNs (International Standard Serial Numbers) are being assigned by the Centre, and publishers are being notified of this assignment. ISDS Canada plans to publish lists of Canadian serial titles to which numbers have been assigned in the near future. We are currently examining the advisability of accepting the responsibility for assigning ISBNs (International Standard Book Numbers) and of introducing CIP (Cataloguing in Publication) in Canada.

All these modifications and developments are in keeping with the recommendations of the Canadian Task Groups on Cataloguing Standards and on a Canadian MARC, which groups did such good work that I am pleased to acknowledge their contribution once more here. I think that I can say, without being accused of complacency, that the National Library of Canada is now well prepared to play its role for UBC (Universal Bibliographic Control). In this respect, I am pleased to say that Dr Hookway and I had interesting and fruitful talks last week in Ottawa, that we are in agreement on priorities which should be assigned to international programmes concerned with UBC and that we are both determined to press for their implementation with all the energy at our command. Two early opportunities to do so will be the forthcoming UNESCO Intergovernmental Conference on the Infrastructures for Library, Documentation and Archives Services to be held in Paris next September and the meeting to which I have invited directors of national libraries and which will be held in Ottawa in November to discuss my proposal to create an international association or council of national libraries. This proposal has received immediate and enthusias-

tic support from my colleagues everywhere. As nations grow more and more interdependent in the use of each other's information services, it is no less imperative to work at the development of international networks than to build national ones. With the means at its disposal, the National Library of Canada attempts to do both.

With a view to ensuring a better co-ordination of domestic efforts in the fields of standards and a continuing, consistent and more positive Canadian input into international endeavours, I decided to create an Office of Library Standards and appointed one of the world experts in the field, Dr Lunn, as its first Director. Her main responsibility is to co-ordinate the work of the Canadian Cataloguing Committee, which she also chairs, with that conducted by IFLA and ISO. The Office also provides the secretariat for the new WG6 of ISO TC 46 on bibliography, whose chairman is Mr Eric Clyde, of N.S.L.

Having received, considered and acted upon the recommendations of the task groups on cataloguing standards and on a Canadian MARC format respectively, it was possible — we could not do everything at once — to establish the Task Group on the Canadian Union Catalogue, which I did in the fall of 1972. As you know, it is chaired, and very ably, by Mr Basil Stuart-Stubbs. Its mandate is to investigate the nature, scope, maintenance and use of the catalogue on which a Canadian computer library network with international interfaces could be based. The Group was also asked to explore alternative methods of providing some of the services provided by the union catalogue, such as, for instance, the establishment of a national lending library, which, I must say, they have not done as yet. In October 1973, after a full year of studies, discussions and consultations, the Task Group submitted a series of interim recommendations which were published in a special issue of *National Library News* in January 1974, together with my reaction. The Group recommends to close off the existing manual catalogue, to publish in microform the existing file in order to provide locations of older material, and to establish and co-ordinate a Canadian union catalogue *system*, consisting of a central data base in Ottawa and a number of regional bibliographic centres, capable of providing information on holdings as well as cataloguing support services, and other services of bibliographic or managerial nature. The Group also recommends the rationalization of the production of union lists.

As I said, the National Library is in basic agreement with the main recommendations and through

contractual and internal studies is working towards their implementation. The principal studies in question are (1) the Serials Data Base Study contracted with York University and Mr Anable, which is at the origin of the CONSER project referred to earlier (we are naturally gratified to see that what was contemplated at first as a Canadian project has taken a North American dimension); (2) the National Bibliographic Data Base Study, directed by Mr Roderick Duchesne of the British Library and just completed, which describes a model illustrating the organization and content of the proposed central data bank of machine readable bibliographic records and the means by which this may interface with other national or international data bases and machine-readable tape services, as well as strategies which could be followed in the development of the system over the next five years; it also examines its possible use as a Canadian on-line cataloguing service based on a variety of tape services. (Incidentally, it is our hope that this may serve as a model for other nations which may wish to translate UBC into a practical domestic program); (3) an interlibrary loan study conducted by the other UBC, the University of British Columbia, will examine interlibrary loans as related to the development of a national information network: procedures, communications and delivery systems, national lending collections and distribution of costs. Naturally, we are aware of studies conducted in the US and elsewhere, and we are studying them and learning a lot in the exercise. We must, however, conduct our own studies in Canada where the resources are so much smaller and distributed differently on a geographical and institutional basis, where the needs differ, and so on; (4) a study for the rationalization of reporting entries to the CUC based on actual needs and use; (5) a study contracted to Western Ontario and Guelph Universities related to the feasibility of using co-operatively the Guelph Documents System, a simplified digital alphanumerical code which permits retrieval of documents by author (personal or corporate), title, series or subject; (the report was received last week, the conclusions are positive and will be studied upon our return to Ottawa); (6) a study, also conducted by the same universities, to examine the interface between a library using an automated system and a library using a manual one, and the interface between two automated systems, one using a full MARC record, the other a simplified one; (7) a study to determine the best method of closing off and editing the existing manual file, and (8) a study of the minimum elements to be included in the new

automated union catalogue, which resulted in the development of the mini-MARC.

Those who are sometimes impatient with us may not be fully aware of the amount of planning and development now under way, as may be seen from the list just given of studies related to the union catalogue alone. I wonder how many of you know that in the past four years I received, let alone suggestions from my staff and from visiting librarians and scholars, more than 300 recommendations of all types. They could obviously not be all implemented at once and to those of you who are especially interested in some of them and wonder why we have not acted as yet on these and show some impatience, may I say that our recent record shows that we have acted on a great many others. Those interested will find a much more detailed report in the paper given Saturday last at the CACUL Workshop on Automated Systems by Miss Hope Clement, the Director of our Research and Planning Branch, who together with her staff is co-ordinating all these projects and to whom I should like to pay tribute for the expertise, dedication and imagination she and they show in the performance of a very demanding and complex mission.

Several other studies are under way, many to improve our housekeeping operations, and there is no time to describe them here. May I mention one, however, which was completed recently and which recommends the integration of the processing of federal government documents by Information Canada and the National Library so that their lists and our bibliographies could be by-products of the same data base. I am now discussing this with Mr d'Avignon, the Director of Information Canada, and we both hope to arrive soon at a mutually satisfactory system.

We will hear later to-day about efforts made at other levels to build regional or provincial networks and co-operative systems. May I say right away that any such system which would not take into account the configurations of the National Library system is, or would be, to use Burton Adkinson's expression, "parochial and potentially schismatic." Good-will exists, no doubt, but to be candid, may I say that the national union catalogue *system* proposed by the task group will not be easy to develop and maintain. I need not go here into the difficulties now encountered by groups of libraries who attempt to develop co-operative schemes; may I say, however, that the problems they now face confirm in my own mind the need for the large amount of planning and research now under way before we initiate the development of such a major data bank

as the proposed computerized Canadian union catalogue. It is too early in my opinion to lock ourselves in a closed system and, for the moment, I have no choice but to leave all options open, both as to the level of data reported and as to the possible use of the data bank for cataloguing support services. As I already announced elsewhere, the National Library will investigate soon the best means of providing cataloguing support to federal libraries; this will take the form of either centralized or shared cataloguing, and it would be up to other libraries in the country to decide whether they wish to participate or not. This option will remain open until it is rejected or proved redundant.

I referred earlier to the establishment of standards and communications formats, as well as to the rationalization of collections to be placed on the network. My view, based on recent experience, is that the most difficult problems ahead of us are not technical, they are social, political, legal, financial and administrative in nature; a great deal remains to be done before we reach agreement on network organization and operation, on the clarification of network participation by institutions operating under various jurisdiction — municipal, provincial or federal, not to say anything of the private sector. All of this requires a great deal of planning, a great deal of patience and a great deal of determination on the part of many. Technological progress does not create networks automatically, and I hope that the human factor will be forthcoming. As Don Redmond likes to remind us from time to time, let us hang together if we do not want to hang separately. It is in this spirit, and in this hope, that we have proceeded in the study of major programmes with the assistance of nation-wide task groups. The *Canadiana* data base is meant to be used by all and had to be developed according to the needs of its users; this is also true of the Canadian union catalogue, where the difficulty is compounded by the fact that it is the by-product of the work done in many libraries and that agreement here must be achieved in respect of both input and output procedures. All reports published in the last fifteen years dealing with national library services recommended the computerization of the Canadian union catalogue (they all repeated one another); not one told us how it could be done. We are learning the hard way, bear with us a little longer, please.

It is not going to be easy to develop an integrated library network *even* at the federal level where I have statutory authority. A Canadian Govern-

ment Library Committee was appointed to obtain the advice of federal colleagues, and a Government Libraries Liaison Office established. The first main task was to conduct a comprehensive survey of federal government libraries in order to determine what is to be co-ordinated. The survey, conducted under the direction of Mr Paul Kitchen with the assistance of teams made up of government librarians as well as of outside experts, was recently concluded. I just received the four final reports which total some 1,100 pages and make no less than 156 recommendations directed at the National Library, other central agencies, and federal libraries across Canada. These recommendations relate to (1) the rationalization and co-ordination of collecting activities throughout the government library system; (2) the major legislation, regulations and procedures affecting the recruitment, employment, classification, training of professional librarians in the public service; (3) the whole range of library services and the means by which they are offered, the different kinds of information sources and services found outside the library, for example computerized data banks, information analysis centres, and clipping services, all elements of an information system that can be co-ordinated for optimum use, through greater co-operation in processing and resource sharing among federal libraries; and (4) the existing organization and administration of the federal library service both in the National Capital area and in the regions. The Report makes a number of fundamental recommendations which, when implemented, will, I hope, make for a highly efficient network for the benefit of all. You will appreciate that there is no time to discuss them in any detail here

I must mention, however, that the federal government has examined recently the use and misuse of computers in and by departments and agencies and has adopted a new policy which provides for the establishment and operation of a few dedicated government wide E D P centres, one of them for libraries and informational retrieval services whose Custodian is to be the National Librarian. We are currently working out a program for the translation of this policy into action with the assistance of Mr L. A. Côte of the National Research Council and my hope is that the Centre will be operational early next year. It will be an effective tool to standardize library operations and to permit the maximum sharing of information resources at the federal level. It may possibly serve as a model for other co operative systems, it will in any case be a major component of the larger nation-wide network and, as I indicated earlier, it may welcome the participation of other libraries too at least in some of its

programmes.

The second major component of the federal library is, of course, the National Science Library and it is the largest and most important library whose services it is my statutory responsibility to co-ordinate as part of the federal system. As you know, several years ago it was agreed that the services provided by the library of the National Research Council would-not be duplicated by the National Library and that the excellence of that library would be built upon towards even greater excellence in science and technology. As Dr Brown mentioned, it is an information transfer agency — and so is the National Library — but it is also a library whose resources are also designed to supplement local information services and not to supplant or replace them. As you know, it has now moved into its new building, which will make it a great deal easier to further develop its services and collections. Although it is, in my opinion, under-staffed (and I have made representations to Treasury officials in this respect), it is considered to be one of the best centres of scientific and technical information that may be found anywhere in the world to-day.

Its location within the National Research Council led the Science Council to recommend, and the cabinet to direct, that NRC develop, under the general direction of the National Librarian, a nation-wide STI network, as was mentioned at the beginning of my remarks. Speaking for myself only, may I say that the present division of responsibilities and the present institutional arrangements are not in my opinion as effective as they should be and that my hope is that a better integrated federal library structure will be created, which would facilitate the planning of policies, the co-ordination of programmes and the development of a general purpose national information network. I am not at liberty to say more about this for the moment.

I recalled at the beginning that, four years ago, when I addressed the CLA Hamilton Conference, I adopted for my title Ken Humphreys' reference to the "Prime Mover" role of a national library. In bringing this 1974 address towards its close, I would like to develop the analogy a little further. In his roster of national dreams, Sir John A. included a national library, and a lot of other Canadians since have done likewise, but the last spike of the CPR was driven long before the National Library building took shape in Ottawa. To-day, we are attempting collectively to build another type of communications network, and I am tempted to liken the National Library as a Prime Mover to the big locomotive of a transcontinental train. Just as important as the loco-

motive is what stands beh nd The network should be designed, however, to carrₐ all sorts of trains, big and small, made up of a variety of cars if we are to deliver a variety of goods to users who have different needs (this is our rationalization of collections); it is no less essential to make sure that the gauge of the tracks are the same, that the couplings are compatible so that cars can be shifted from one train to another, and so on (this is our standardization of systems). This network is still a national dream, one which is shared by most and at which many are working, although, unlike the CPR's it is one whose last spike will never be driven. Since I addressed the Hamilton conference, the National Library has, with your active and invaluable assistance, come a long way. We have done much to identify the things which have to be delivered, to whom and in what kind of time; and, as well, we have developed the standards both for interconnection and communication which are essential to any network: railway or library, national or international. We have faced and solved thorny problems in a dynamic, changing world, and will no doubt face others as yet unforeseen.

Nevertheless, I trust that before another four year period ends, whatever difficulties may crop up, the systems we have been and are developing will be operational and our second generation library network, a working reality.

A NATIONAL STI SYSTEM FOR CANADA

Jack E. Brown
National Science Library

I, like all of you who have worked for many years in the information field, have had no difficulty in recognizing that there is a vital relationship between the industrial, economic, and social development of a country and the ability of that country to channel relevant information to the right person at the right time. I have, therefore, been constantly amazed that the countries of the world have been so slow to develop mechanisms whereby these goals can be achieved. Indeed, we have procrastinated so long in dealing with this problem that the job of processing the mass of existing information and the flow of new information has become a task of gigantic proportions.

Canada has been just as remiss in tackling this problem as other countries of the world. However, in December 1969, and as the result of a series of studies dealing with the establishment of science information policies, the federal government took steps to make up for lost time and laid down the ground rules for the development of a national scientific and technical information system.

At the present time, the NSL is the major element or focal point for the existing STI system. Its resources have been and are continually being developed in close co-operation with all the major libraries in Canada. These resources and services are designed to complement and supplement local resources and also to provide the essential backup to the information services provided by the NSL's staff of information specialists and those of NRC's Technical Information Service.

In other words, the NSL is responsible for ensuring that scientists, engineers, technologists, research workers and managers have ready access to any scientific and technical information required in their day-to-day work regardless of whether this information or these publications are held by the NSL or some other agency in Canada.

It is important to note that the NSL is not a "library" in the conventional sense of the word, but rather an information transferal agency. It has no depository or archival responsibilities and its literature resources are acquired solely because they contain STI essential to the development of science and technology in Canada. Also, unlike most other major libraries, except for mechanizing the recording and listing of serials held by the NSL and related bibliographic services, the NSL has done little to mechanize its internal processing operations. Our prime concern has been to develop and implement new techniques to expedite and facilitate the retrieval and dissemination of STI in Canada. It is correct to say that the NSL's total activities are user-oriented.

The national STI system as it now exists links and makes available nationally the major literature and information resources of a variety of agencies. This linking is accomplished by means of three basic networks.

1) A network of 245 university, federal, provincial and industrial libraries which, through a variety of informal co-operative agreements, makes their resources available nationally by means of loans and photocopies. The libraries holding files of scientific and technical journals are linked by Telex and by the National Science Library's computer-based "Union List of Scientific Serials in Canadian Libraries." The fifth edition of this list, published last month, records 46,000 individual titles. Since journals account for at least 80 per cent of scientific and technical literature, this means that Canadian scientists and engineers have, through the NSL or their local library, access to the major portion of the world's scientific and technical literature.

Purchasers of this 5th edition received without charge a second copy in microfiche form. If this format is acceptable, we can issue up-dated versions of the List at quarterly intervals, at a cost of only $10 compared to $60 for the printed volume. We can also continue to produce the printed volume annually, to be supplemented quarterly by the microfiche edition.

2) The second network within this national system is the Canadian Selective Dissemination of Information Program, CAN/SDI. CAN/SDI is a computer-

based current awareness service which alerts subscribers to the existence of recent papers covering their specific fields of interest as published in the world's scientific and technical literature At present, 1860 user profiles are searched against 14 data basis, to serve approximately 6,000 end users.

CAN.SDI, which was developed by the National Science Library, became operational as a national service in April 1969, after three years of experimentation and testing. The program has been described in a variety of published papers, so there is no need for me to repeat what is available elsewhere. However, I would like to outline several features of the program which have led to its success and wide acceptance by users:

a) The 14 data bases now being used, each incompatible with the other as far as format is concerned, and often with respect to the hardware required, are converted to a common Library of Congress MARC-like format. This technique enables the user to access any of the source tapes with one interest profile, to switch from one tape to another, and to tap the information content of several tapes without major changes in the search terms or search logic.

b) Users are guided by a common CAN/SDI Profile Design Manual which is updated continuously as new data bases are added.

c) The NSL attempts to ensure that all papers cited on the tapes are available either at the NSL or other readily accessible centres in Canada, and provides photocopies of cited papers not available through local sources.

This action means that the NSL now receives currently over 12,000 different journals, bringing its total holdings of journals to 18,500 titles. The advent of CAN/SDI has also had a direct impact on the operations of the NSL's Interlibrary Loan Section: for example, last month during a period of 22 days, the staff processed 9,166 requests for loans and photocopies. This is a daily average of 417 transactions.

d) The service is a decentralized one wherein search editors located in all parts of Canada serve as an interface between the CAN/SDI services and the ultimate user. To date, the NSL has trained 500 of these search editors located in industrial firms, universities, government departments, and research centres These search editors are completely familiar

with the CAN/SDI techniques, and are knowledgeable in the subject fields of the clientele.

e) To further strengthen this decentralized support, the NSL has designated three agencies as output centres for the CAN/SDI service. The Library of the Canadian Geological Survey, using the GEOREF tapes, is responsible for interfacing with the geoscience community; the Library of the Department of Agriculture, using the CAIN tapes, extends SDI services to the agricultural community; and the National Library, using such tapes as MARC II, ERIC and the SSCI tapes, covers selected fields of the social sciences. In each case, the NSL is responsible for all technical details relating to computer processing and negotiations with tape suppliers. The designated agencies are responsible for construction of interest profiles and the meeting of users' needs.

3) The third network in this national STI system is the CAN/OLE (Canadian On-Line Enquiry) system, a computerized system for the interactive searching of large bibliographic files. Unlike a batch system such as CAN/SDI, a conversational mode of operation permits a user to query directly, via a computer communications terminal, one or more data bases. A user may modify his literature search dynamically in response to replies received from the system until the search strategy produces potentially relevant citations. The main advantages are speed, direct user control, easy access to a variety of bibliographical files through one device and one system.

CAN/OLE, which became operational in February of this year, is at present an experimental project to test the validity and feasibility of accessing large data bases via remote terminals. We wish to know, for example, if there are a sufficient number of potential users who require rapid access to information and who are willing to pay the relatively high costs of this type of service. Also, why develop a Canadian on-line system when Canadians can have access to a large number of data bases via Systems Development Corporation's ORBIT or Lockheed's DIALOGUE? Do use and costs justify a national on-line system?

As with CAN/SDI, before starting the experimental phase of the system, a limited market survey was carried out to determine the extend of interest in such a system. The results of the survey indicated a keen interest in the service These findings, together with a variety of other factors, prompted our decision to proceed with the imple-

mentation of CAN OLE. Major factors were:

a) Communication costs for low speed digital data transmission had been reduced by up to 90 per cent with the introduction of DATAROUTE and INFODAT. DATAROUTE is a digital data network operated by Trans Canada Telephone System; INFODAT is operated by CN/CP Telecommunications.

b) The NRC has successfully operated computer time sharing services over the last three years.

c) The NSL has developed substantial expertise in the utilization and marketing of commercially available tape services.

d) The NSL has acquired over the last four years, in machine-readable form, over 4,000,000 references in all fields of science and technology.

e) It was felt that Canadians should be given an effective alternative to similar developments in the U.S with the ultimate goal of developing a strong national bibliographic network designed to meet present and future requirements.

Because of staff limitations and the heavy use of NRC computer facilities by NRC scientists, initial participation has been limited to 15 centres. Each centre pays a membership fee of $700 per month. This base fee covers all computer storage costs, literature file creation costs, and provides up to 15 hours of unlimited searching time. When 15 hours of use have been exceeded, a charge of $12 per connect hour is applied. In addition to these charges, each centre is responsible for acquiring the appropriate equipment and paying the communication costs. The centres are, of course, free to establish user charges in order to recover their operating costs.

At present, only four data bases are available for searching: COMPENDEX, 1969-73; INSPEC, 1970-73; BA PREVIEWS, 1973-74; and CA CONDENSATES, 1973-74. These data bases are accessed in an alternating fashion. On Mondays, Wednesdays and Fridays, COMPENDEX and INSPEC (covering engineering and technology) are available, while on Tuesdays and Thursdays, BA PREVIEWS and CA CONDENSATES (covering the life and chemical sciences) are available. The NSL has completed the training of staff at these 15 centres which stretch from Memorial University in Newfoundland to the University of Calgary in Alberta.

A fourth network, which is still in the planning and development stage, will consist of a series of regional referral centres. These centres will coordinate and make available the total information resources and subject expertise in a given region. Our intention is to develop not another NRC service, or even a federal information system, but rather a national network which links scientific and technical information services wherever they exist. Looking further into the future, it is our hope that through the close co-operation and joint action of the NSL and NL, Canada will ultimately have a national information system which can be accessed by anyone in Canada, regardless of their subject needs and interests.

Until recently, the expansion of National Science Library services has been severely hampered by inadequate working quarters. However, as of February of this year, these space difficulties have been alleviated by the completion of an ultra modern building which now houses the National Science Library and the Technical Information Service. This building, 12 years in the planning and 2-1/2 years in construction, has been designed to house two million volumes and to utilize the latest mechanized techniques for processing and disseminating information. May I take this opportunity to invite all of you, during your next trip to Ottawa, to come and visit what we feel is one of the most beautiful and functional libraries or information processing centres in Canada. For those of you who attended the CACUL Building Institute on Saturday and Sunday, I hope Mr West's presentation on the NSL building will whet your appetite for an early visit.

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NETWORKS IN THE ATLANTIC REGION

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In order to present to this Theme Day an account of networks in the Atlantic Provinces I appealed to my colleagues for co-operation and they responded generously with information on activities and plans for their libraries and areas. In this we have accepted the term "network" in its broadest sense to mean any linking of library resources and services designed to meet the library needs of any user or group of users. I thank my colleagues for their assistance but absolve them from any responsibility for the conclusions I have drawn from their facts.

In the four Atlantic Provinces one of the first things we must face is that the Provincial boundaries act as barriers to the establishment of networks; a similar problem arises within each province where funding by different jurisdictions or agencies creates barriers. However, let us first look at what has been accomplished and is operational before we look at our problems.

In Prince Edward Island we have a network in miniature – as the Provincial Librarian states, "All services, including the Public Library, Legislative Reference Library, and the responsibility for development of school libraries, are centred in this office." The Public Library operates a Regional Library Service throughout the Island, the Legislative Library serves the Government officials but uses the centralized services of the Provincial Library, the school libraries are the responsibility of the local school units but recommendations on standards and levels of financing rest with the Provincial Library and a centralized purchasing, cataloguing and pro-

cessing system is being established. So here we have a small but functioning unit covering the whole province – but with one segment missing, the University component. Three years ago an attempt was made to include the University of Prince Edward Island in the overall system. This proposal met with a good response from the Librarians but foundered on the problem of getting the approval of two bureaucracies – provincial and university, and no formal arrangement could be made.

Our other island province presents a different problem because of its size and scattered population. Newfoundland also operates a regional library system in the public library area which provides service to urban areas and isolated communities alike – linked by telex for resource location and for reference service; and for the future is exploring the possibility of a computerized book catalogue for all public libraries. The Provincial Reference Library has an index of Newfoundland newspapers which is now being computerized in co-operation with the University of Guelph.

Memorial University Library links its own campuses, has a computerized serials listing in co-operation with the St Johns' Hospital libraries and the St Johns' Public Library; it also ties into outside networks in its use of CAN/SDI, Medline, the pilot project of CAN/OLE and its three year participation in the Shared Cataloguing Programme of the British Columbia University Libraries.

In New Brunswick a similar separation seems to be in existence between public/school systems and university systems.

A network of public and school libraries operates in five regions of New Brunswick comprising 30 libraries and 8 bookmobiles; this network has a union catalogue in Fredericton as well as centralized cataloguing for four of the regions. a centralized pay system, though staff members are selected and appointed regionally, uniform work conditions, benefits, bargaining rights and grievance procedures. The school libraries are tied into the system by a group of Extension Librarians working jointly with public and school libraries.

The University Libraries in New Brunswick join outside networks in such systems as CAN/SDI and CAN/OLE and have two networks within the province which are in co-operation with non-university libraries. One is the provision of Interlibrary Loan service including verification, location and borrowing by the University of New Brunswick Library for a group of seven institutions as diverse as the Atlantic Provinces Economic Council and the King's Landing Historical Village; the other is a project of five

libraries to co-ordinate and facilitate conservation, microfilming and use of New Brunswick material.

Nova Scotia again presents a picture of Public School networks which are better developed than those of the University/Special Library sector though the two groups are co-operating in some joint projects.

The Regional Library System functions as an integral part of the Cultural Services Section of the Provincial Department of Education which includes museums, libraries and audio-visual services. The network can be described in three main divisions:

    I Provincial Library
    II Regional Libraries
    III School Libraries

I The Provincial Library in Halifax is responsible for six basic sections which in addition to their primary responsibilities perform certain network support services which I shall describe:

a) Legislative Library has an extensive microfilming programme including provincial documents and newspaper files; it works with Nova Scotia Communication and Information Service on distribution of provincial documents; it compiles an annual checklist of provincial documents; and it maintains a Nova Scotiana Collection to serve all public libraries.

b) Public Libraries section provides administration of cost-sharing grants to municipalities; advice and guidance to Regional Library Boards and their chief administrative officers; keeps these Boards and their staff informed through a Newsletter; provides support staff for newly formed regional libraries; and encourages information exchange through regular meetings and workshops

c) Reference Services provides maintenance and servicing of the Nova Scotia Union Catalogue which is a main entry registry of holdings of all major library collections in the Province. This Union Catalogue also acts as a registry of items costing over $100 being ordered by co-operating libraries — a primitive method of collection rationalization. This section also provides Reference services to 11 regional libraries and the Nova Scotia Civil Service; and acts as Interlibrary Loan centre for the province with its Telex linkage and its verification service for smaller libraries. It builds a strong bibliographic collection, a library science collection, a specialized reference collection for all to draw on; and handles a centralized gift and exchange service.

d) School Libraries became a responsibility of the Provincial Library in 1960 with the Supervisor of School Libraries acting as a consultant approving

applications for School Library Materials Grants, and providing a specialized Teachers' Library

e) Technical Services Section does centralized cataloguing for ten regional libraries handling about 50,000 volumes per year.

f) A/V Services provides Film Service, Taping Service for Schools, a new Photography Service and an Equipment Repair Service.

II The Regional Library System consists of eleven regions with fifty branches, twenty-two bookmobiles and four island deposits which serve about 750,000 people. These libraries have interchangeable user cards, exchanges of specialized collections and standardization of bookmobiles.

III The School Library System is starting small geographical networks and encouraging expansion to a wider system.

In all of these divisions there are plans for expansion of the services provided and improved linking of the different areas.

The University/Special Library area in Nova Scotia includes nine universities and colleges, an embarrassment of riches in a small and not very affluent province! In addition, the Halifax-Dartmouth Metropolitan area has a large concentration of government and industrial research libraries which increase the duplication and overlapping. Almost all of these form part of the Nova Scotia Union Catalogue and make use of its services for locating material and most of them also use its registry of orders to check on duplication of more expensive items.

As in the other provinces there are ties with outside networks such as CAN/SDI and Medline and the proposed participation in the second phase of CAN/OLE project since only one Atlantic Province location was accepted for the pilot project. The Library of the Atlantic Regional Laboratory of the National Research Council has been designated as an entry point for inquiries in the NRC/STI network system. The Kellogg Health Sciences Library of Dalhousie University operates a regional loan service for practising health science professionals in the four Atlantic Provinces, linking the network by mail, telephone and telex with the subject search capability of Medline.

In the Halifax-Dartmouth area two new projects are being set up co-operatively by a varied group of libraries -- one is a daily truck delivery system linking the libraries and the other a series of subject oriented committees to explore the extent of duplication of resources and the possible ways of reducing such duplication. In a different approach Dalhousie University Library has for some years been making

two of its internal systems available on a service fee basis to other area libraries – one system is the computerized order/accounting system and the other a catalogue card production unit using the MT/ST machines. Some libraries have in fact contracted for a more complete service which includes everything from order (not selection) through fund allocation, receipt of books, payment of bills and all accounting, cataloguing (by their own staff but using Dalhousie facilities) production of cards, reporting to National and Provincial library, and end processing – but stopping short of the most important feature of actual shared cataloguing.

Before closing this factual account there is one area-wide group which should be mentioned – the Associated Atlantic Universities Librarians' Committee. Under the sponsorship of this group and with the financial support of the co-operating libraries a microfilming unit for the area has been set up at Nova Scotia Technical College Library and has been operating for eight years; the group st. :ted the first card production unit at St Mary's University which continues as a regional off-set and Xerox system and has been supplemented by an MT/ST operation at Dalhousie; it assisted in the creation of a local bindery and supported it in its early stages. More recently it supported an experimental year of opening Interlibrary Loan to all undergraduates in the Atlantic area and when it proved successful tried unsuccessfully to have it expanded to a national experiment. It is now starting a registry of orders similar to the one at the Nova Scotia Union Catalogue and hopes to integrate it with that system.

That gives you a brief and necessarily incomplete resumé of the varied ways in which co-operation has produced small local or regional networks in the Atlantic area and how some of these efforts reach out beyond our local boundaries to tie into broader networks. I have not mentioned the man hours spent on committees, task forces, formal and informal groups both locally and nationally by many of the Atlantic area librarians trying to push forward with network plans

"The Nova Scotia Council on Library Resources Report and Recommendations on Rationalization of Resources" a forty page report on present resources in seventeen libraries and a plan for a network; and "Proposal for a Regional Scientific and Technical Information Centre in the Halifax Dartmouth Area" published as an appendix to the *Special Study No. 8 of Scientific and Technical Information in Canada* are two detailed reports which show the interest in and work on networks in

the Atlantic area.

I now leave the area of factual information, as supplied by my colleagues, and turn to my own assessment of where we stand. I fear I must admit to discouragement – we talk systems, we write systems, heaven knows we read about systems – we have more technical knowledge and more money - but the accomplishments *that affect the user* are few and far between. We stand on the threshold and are afraid to go forward.

Let me give you a few examples taken from Nova Scotia because I know it best – but I'm sure similar ones exist in the rest of Canada. Some small ones first – we have set a system for information on planned purchases of over $100 – the mechanism is working but only went into effect with the provision that all it really guarantees is that when we duplicate an expensive set that our neighbour is purchasing we know we are doing so – but how many of us will face our user group and refuse to buy that set? When we check our serials lists with each other, how many cancellations do we achieve? Beilstein and Gemelien are essential tools, so our chemists tell us, but no way will we insist that we split the cost and put one in each library – since they are only five minutes walk apart and available to all users! This brings up not only conflict with our users but also jurisdictional disputes as one library is university and one government financed!

On a proposal for a daily truck delivery service – a basic need as agreed by seventeen libraries – only eight can find $300 over a six month period in their budget to do it as an experiment and then get their formal budgetary support.

On the larger scale I have mentioned two formal reports with recommendations for networks – one for a Metro-Halifax-Dartmouth scientific technical network and one for a general information network for Nova Scotia. Both of these were produced in 1969 and nothing has come of them. Not because librarians aren't in general agreement on them but because they involve money to be spent, jurisdictional boundaries to be crossed, some loss of individual library autonomy and libraries are too timid to chance their arm on what might be controversial.

We as librarians in the Atlantic Provinces are working hard in our individual libraries, we are talking networks and systems, but if I were asked to guess what will come out of this Theme Day presentation and discussion I would predict "more published papers, more committees, more studies and more reports." and what we need is concrete action at the local and regional level that can form the foundation for the larger networks we are all promising our users.

CANADIAN LIBRARY SYSTEMS AND NETWORKS: THEIR PLANNING AND DEVELOPMENT IN LA BELLE PROVINCE

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Introduction

The quiet revolution in Quebec librarianship, like the quiet revolution in Quebec politics, dates from the death of Duplessis in 1959. If we consider the era of Duplessis as the Dark Age of education and libraries in Quebec, then the period that began with Lesage's inauguration in 1960 has truly been an educational Renaissance.

Before sketching the developments of the last fifteen years in three main areas — university and college, public, and government libraries — from which we see a network pattern (or patchwork design) emerging more and more clearly I would like to remind you that around 1960 there existed almost as many self centred independent and uncommunicative strongholds as there were academic institutions. So in spite of the serious shortcomings which exist today, it is still quite amazing that such radical changes have occurred in such a short span of time, especially in the last five years or so.

University and College Libraries

One can trace the multifaceted education revolution which recently took place in l'Etat du Quebec to the famous 1960 Parent Report [1] As a result of this report's recommendations, a Department of Education proper was established although this measure had been opposed by the Catholic Church which feared educational laicization, and the loss of its autonomy The latter fear was justified as evidenced in the last decade by the history of the student movements, by the progressive lay adminis-

tration introduced into the governing bodies of private confessional academic institutions like Montreal and Laval universities, and more radically by the creation of a parallel system of public educational institutions — the CEGEPs [2] and l'Université du Québec with its proliferating branches. The CEGEP phenomenon is better known outside the province because of its similarity to the growth, in the 50's and 60's, of community colleges diversely called agricultural colleges, specialized institutes of technology or CAATS in Ontario [3]. This immense effort to democratize instruction — the main thrust of the Parent Report — has had the greatest impact at the CEGEP level, not at the university level because, despite all theories, higher education is a naturally selective process. Librarianship has been affected because, at the recommendation of the report, a new breed of library technician was produced by the community colleges. Their steady and sturdy invasion of the field induced professional librarians to organize themselves into a corporation, the only one of its kind in Canada, which protects the status of the professional librarian by public law.

Now, as if to lure everybody into the new deal, the Department of Education has injected millions of dollars into the construction of new or enlarged facilities, a building boom which indirectly profited libraries, with the most energetic ones growing apace and even assuming leadership in new directions as Laval did in automation [4]. At the same time the Department has gradually invaded all levels of education through increasingly rigid structures which have become almost oppressive in sheer size. Money became scarce beginning around 1969 and has remained so, thus forcing more and more co-operation among libraries. Yet, a difference between colleges and universities can be observed in this respect. Colleges, perhaps because of pressures from a variety of directions, seem less able to achieve free and easy co-operation than universities. This may explain the chaotic results in the case of the former and the more enduring outcome in the case of the latter; at the same time it is possible that such a conclusion is only a short-sighted one.

College libraries

On the college level, there are only two structures worth mentioning. They are: the "Centrale des bibliothèques" and the project "CIDBEQ."

Centrale des bibliothèques

La Centrale des bibliothèques or Centralized Library Service is similar in many ways to the Ontario

College Bibliocentre. It serves primarily an equiva-
lent clientele of community college libraries and
performs centralized processing for them. Never-
theless, it is very different both in its conception
and in the services it offers. Essentially it is a
centralized bibliographic centre responsible for the
best choice of literature (monographs, serials,
audio-visual material, etc.) for teaching libraries
from kindergarten to college. It is complemented by
a Technical Services Bureau which processes for
sale the titles chosen. By way of contrast, the
College Bibliocentre is a facility that processes the
actual acquisitions of participating institutions.

Established in September 1964 under the now
defunct Federation of Classical Colleges, la Centrale
was bought in 1967 by the Quebec government and
is presently part of the Department of Education's
Central Office for Teaching Aids (Service général
des moyens d'enseignement — SGME), which is the
main body responsible for promotion and co-
ordination of library services at all levels, including
university. In fact, that Office comprises four
divisions: one for elementary and secondary
education; one for college and university education;
a Bibliographic Centre; and a Technical Services
Bureau. The latter two are grouped into La
Centrale des bibliothèques which should then
normally serve all levels of libraries including
university ones. The Office is completed by a
Documentation Centre which conducts a research
and planning function; for example, it is currently
involved in audio-visual research, in a French
application of the British National Bibliography's
PRECIS (Preserved Context Index System), in
CAI (Computer-Assisted Instruction) programs, and
in a co-operative system for the transfer of educa-
tional information similar to ERIC.

It should be noted here, that for the purpose of
this essay, it would be inappropriate to describe in
detail the university dimension of the Office as well
as of La Centrale because it has not materialized
yet. The colleges pay an annual fee whether or not
they use it and they seem moderately satisfied with
its services. It is the elementary libraries who are
the neglected children in the family.

The shortcomings of this system are perhaps the
result of overly idealistic thinking, a good deal of
conservatism, and too much caution on the part of
management (for example, their lateness in consid-
ering the possibilities of automated processing to
accelerate the production flow). Nevertheless the
services offered are of an impressively high quality,
especially the bibliographic choices.

Here is a brief description of these services:
- Biblio Jeunes (kindergarten and elementary
  libraries) 3,500 entries with indexes. Annual
  supplement (fiche format)
- Choix (kindergarten and elementary libraries)
  monthly (fiche format)
- Choix (secondary and college libraries) bi-
  monthly (fiche format)
- Bulletin de bibliographie (college libraries)
  monthly
- Cahiers de bibliographie, CEGEP (subject biblio-
  graphies) irregular
- Répertoire 1964-1971 (Secondary and college
  libraries) 40,000 entries in Dewey order. 7 vols.
  May 1972. Vol. 7, separate author and title
  indexes. Annual supplement and five years
  cumulation. (fiche format)
- Periodex. Sept 1972 — 10 issues yearly, annual
  cumulation. Computerized analytical index to
  155 French language periodicals (supersedes in
  part l'Index analytique, 1966-72, issued jointly
  by Laval University Library and the Quebec
  Department of Education). Intended for
  secondary, college, and public libraries.
- Biblio-Troc (exchanges between libraries)
  monthly
- Catalogue cards: monographs, a.-v. material;
  Dewey (and L.C. call numbers for college
  level);card sets sold in 1972-73, a little more
  than a million for 11,767 titles catalogued.
- Subject headings list (name, topic, special list
  for kindergarten and elementary libraries,
  reference list) Quarterly supplement (fiche
  format).

Project COLBEQ

During the last four or five years, various attempts
to computerize college libraries [5] either started
independently or were subsidized by various
branches of the Department of Education. Of the
latter ones intended as model experiments, the
most promising were the short-lived GEMINI
supported on-line multimedia resource centre at
the brand new Montmorency College; the Marc-
oriented acquisition and cataloguing system at
André-Laurendeau College [6]; and Project
AUBICOO involving La Centrale des biblio-
thèques [7]. One has to realize that these efforts
were only a partial local manifestation of the
widespread enthusiasm for library automation
and the standardization of library practice which
took hold of the profession at the beginning of
the 70s. At the same time, other experimental
programmes were being conducted in university.

government and other libraries in the Province. Hoping to halt this proliferation of projects and co-ordinate the experiments, the SGME through La Centrale des bibliothèques, tried to focus all energies on one global project. Accordingly, in May 1973, it funded CIDBEQ (Centre d'informatique documentaire des bibliothèques d'enseignement du Québec [8]), a library automation bureau intended for all libraries under the jurisdiction of the Department of Education, but open as well to public, government and other libraries. All other library automation projects in colleges and CEGEPs were frozen indefinitely. CIDBEQ did not succeed in attracting university libraries which went on their own, as shall be explained later. A task force, organized late in 1973, made preliminary studies and recently proposed a series of short and long-term objectives for CIDBEQ in a progress report dated 24 April 1974. The more important recommendations concern the conversion of bibliographic processes of La Centrale to a Canadian MARC format and the acquisition of a Xerox Sigma computer to support the cataloguing operation. Hopefully, an on-line, shared cataloguing system will be operational on a limited basis at the college level by September 1975.

University Libraries

The Conference of Rectors and Principals of Quebec Universities (CRPUQ) is the chief promoter of co-operation and systems at the university level. Its Permanent Library Sub-Committee (first called Committee for Library Co-ordination) makes it equivalent to the Council of Ontario Universities (COU). A five-year plan of concerted action to co-ordinate services was outlined in a report by that committee which was accepted on 5 February 1970 [9]. The report was based on a voluminous study by two co-ordinators who compiled it the previous summer from visits to campuses, responses to a questionnaire, and from a joint meeting of the Quebec Committee with its counterpart, the Ontario Council of University Librarians (OCUL) on 6 October 1969. The main recommendations dealt with an in-depth inventory of collections, a union list of serials, the creation of a bibliographic centre taking into account the national centre in Ottawa, the computerization of services compatible with national and international standards, especially the MARC II format, and the establishment of an appropriate body to develop and co-ordinate a sound network of university libraries.

The many concrete actions which followed that report are in line with today's theme. Here are a few

examples: the launching of a provincial inter-university transit system for interlibrary loan activities called PEBUQUILL (Prêt entre bibliothèques des universités du Québec / Quebec Universities Interlibrary Loan), of which the National Library of Quebec is part and which is now linked with the Ontario IUTS (Inter-University Transit System); the standardization of library rules and regulations and the inter-university extension of loan privileges to faculty, graduate students and professional staff on demand; the distribution in October 1972 of a semi-automated union list of current serials [10] based on the Laval computerized list; the first steps towards the creation of regional data banks for maps and audio-visual materials again from Laval programmes [11] [12]; the full-time appointment of a research and planning officer to act as secretary to the Library Committee; and the establishment of regular task groups under the same committee for rationalization of collections, for technical services and for external services (currently these various groups are working on standardization of library statistics, on a warehouse project for less used collections, among other projects).

TELECAT. COOP., or OULCS Monograph Demonstration Project in Quebec universities
The most fundamental and far-reaching of all programmes undertaken so far is the on-line shared cataloguing project in which Ontario and Quebec universities are now engaged. Since previous speakers have already explained both the history and workings of this system, I will only add a few words to explain the Quebec side of the story.

Since the birth of MARC I at L.C., the potential of such a project was debated time and again (more often than not it was Guy Forget and myself who did the debating). But it had its real foundation laid in 1971 when the Directorate for Higher Education (DGES — Direction générale de l'enseignement supérieur) contracted about $200,000 to l'Université du Québec to develop within its branches a centralized automated cataloguing system intended to serve as a model for other universities. You must remember that l'U.Q. was then a member of CRPUQ. Mr Guy Forget, who had recently moved to l'UQAC (Université du Québec à Chicoutimi) as Vice-Rector for Communications, was the natural choice for chairman of the ad hoc task force then created. Unfortunately, various mishaps, not the least of which was an internal antagonism to the project by the promoters of an in-house data bank started

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earlier at l'UQAM (Université du Québec à Montréal), caused the proposal to fail after the presentation of a second progress report in March 1973 [13] Moreover, sometime in May, l'U.Q. decided to withdraw from the CRPUQ But at least Mr Forget and his group had had time to examine the OCLC system in the United States and the emerging OULCS project in Ontario and had recommended a trial linkage with one or the other [13].

During the Spring of 1973, university libraries were invited to join CIDBEQ which had the advantage of being already funded but the disadvantage of being mostly college oriented There was also the possibility that the university libraries would join an external system more standardized and better adapted to their needs. Unfortunately there was no money available for this. With the withdrawal of l'U.Q. their number was reduced to six. (In fact, CRPUQ was almost cut in half when l'U.Q. and all its constituencies withdrew). L'U.Q. was now inclined to stick to its own internal system called BADADUQ, (Banque de données en accès direct du l'Université du Québec) [14]. I know from my personal involvement in the whole process that this stage of the dream was like a nightmare. Things started to go right however, when the Conference of Rectors passed a resolution on 14 June 1973 to join the OULCS Monograph Demonstration Project. I was named chairman of a specially appointed task force of four and we held meetings in Toronto on 13 July and in Quebec City on 19 July. Things went quite smoothly from then on and I was able to submit a positive progress report in January 1974 [15]. At the present time, Laval and McGill Universities are directly involved and have been on-line with Toronto since March 1974. Other potential participants have been involved from the beginning as users through the Technical Services Task Group and we are confident that we will be able to extend the facility to them and to the National Library of Quebec by next August The Research and Planning Officer of the Conference of Rectors acts as secretary to the Task Force thereby greatly reducing the secretarial burden. The experiment is specially funded by the member libraries

I hope these few enlightening facts do not shed too crude a light on the historical truth and do not seem too biased to the external eye For those interested, the June 1974 issue of *Documentation et Bibliothèques* (ASTED, Montréal) will publish articles on CIDBEQ, TELECAT COOP [16], and BADADUQ

SDI and Data Banks

Quebec libraries (mainly university and special) are also participating more actively in larger bibliographic networks like CAN/SDI, CAN/OLE, MEDLINE, etc. For example, Laval University Library, (considered one of the three largest centres for CAN/SDI together with the University of Calgary and the University of Toronto), via its new specialized reference section called SDI/LAVAL, links off-line or on-line to some sixty different data bases in the Sciences and Humanities, of which a few are in French like PASCAL (Programme Appliqué à la Sélection et à la Compilation Automatiques de la Littérature) from CNRS, Paris, MODUL/Déploi on Quebec Statutes from Laval Law Faculty, and Reference 83 from Informatech France-Québec -- a potential competitor with CAN/SDI; Laval even created some data banks of its own like CARTOMATIQUE [11] on non-autonomous maps subsidized by the National Library of Canada, and will issue a manual on SDI in September 1974. McGill University acts as a regional centre for MEDLINE. The University of Montreal developed DATUM, a bilingual full text data base on jurisprudence, and a Word Bank. The University of Sherbrook broke through with its CRAR (Centre de recherche en aménagement urbain) and launched INFO-ESTRIE, a regional urban information system.

Hospital Libraries Network

Another interesting development now taking place, this time under the aegis of the Quebec Social Affairs Department, is the elaboration of service standards for hospital libraries by linking them to university medical faculties, and their organization into a network with the university medical libraries functioning as regional centres. Based on a field study prepared for Laval in 1971 [17], the plan is supported by special committees of the Canadian Medical Association (AMC -- Association médicale du Canada) and l'ASTED (ex -- ACBLF) [18]. Mr Louis Philippe Bonneau, of Laval, and also special assistant to the Minister, recently prepared a final draft on the project.

Public Libraries and BNQ (Bibliothèque du Québec)

It might seem strange to talk about the National Library of Quebec and the Public Library Board together The reason for doing so is that both are under the jurisdiction of the Department of Cultural Affairs For our purposes today, I would like to stress the enormous impact the creation of each has had on Quebec librarianship I also want to emphasize

that in each case the viability of the new creation represents the hard work, dedication and stubbornness of one man — Georges Cartier for the National Library of Quebec and Gerard Martine for the public libraries.

The BNQ (1967) was created to preserve the French-Canadian cultural heritage. I view the act which created it, the NLQ, as a Bill 22 for the written word. Just as Bill 22 will preserve the spoken word so will the NLQ preserve the written one. The new system provides both a basic and an exhaustive source for current and retrospective "Laurentiana" as exemplified in the "Bibliographie du Québec", RADAR (Répertoire analytique d'articles de reveus du Québec), the retrospective bibliographic project executed with pieces on hand, etc. It should be noted that most of these instruments are machine-produced and follow national and international standards.

The accomplishments of the Public Library Board (1960) are as impressive. To list just a few: it prepared the first Quebec public library act, started almost from scratch in establishing a network of public or municipal libraries, converted subsidies from some thousands into millions, established large regional systems called "bibliothèques centrales de prêt" (19), devised a plan for centralized processing and created a specialized documentation centre.

Other systems worth mentioning are the Montreal municipal library with its numerous branches, the centralized CECM (Commission des écoles catholiques de Montréal) system serving hundreds of libraries, and the automated program instituted at the North-Montreal Public Library by Mrs Anna Rovira (20), which might be considered a prototype for medium size public libraries.

Government Libraries
The long sought for co-ordination at the government level was hastened by the concentration of government buildings in the new parliamentary city during the past five or six years and by the appointment in November 1970 of an *ad hoc* study commission. Its terms of reference were to examine relations between the Legislative Library, the National Library of Quebec and other government libraries and to propose a plan to co-ordinate them. The chief proposal of the report issued in 1971 (21) concerned the grouping of libraries, (the Legislative Library, the BNQ and a few others excepted) into scientific and humanities sections under a co-ordinator responsible to a main division of the Department of Communications. It also recom-

mended a feasibility study for automation and the establishment of three centralized bibliographic centres, one for Laurentiana at the BNQ, one for scientific information at the new Science Building, and another for general information at the Legislative Library.

Three years later, the only practical results attained have been a partial grouping of libraries in buildings G and H, the very recent appointment of a co-ordinator for that group alone, a good beginning of a union file in the Legislative Library (some 700,000 cards representing about 500,000 documents in 30 libraries) and the publication of two issues in April and May 1974 of INTER-RESEAU (22), current awareness abstracts contributed from three libraries so far.

Prompted by these delays, the head librarians met on 23 April 1974 (23) under the chairmanship of Jacques Prémont, to reassess the value of the 1971 report. They recommended the continuation of the previous committee, or alternatively, the appointment of a new committee — hopefully permanent and more representative of departmental libraries. On the same occasion, participants were informed of various projects such as cataloguing in publication for Quebec official publications, continuation of the union catalogue for monographs with a hint at automation, and a computerized union list of serials. Finally, it seems a special committee will be created to develop an administrative plan for government libraries based on model libraries at the Department of Lands and Forests and the Department of Natural Resources headed respectively by Mrs Kathleen Mennie de Varennes and Denys Munger.

Conclusion
In its report to the National Library Canadian Union Catalogue Task Group, the Quebec Work Group on Regional Bibliographic Centres states: "We believe that the regional centre for Laurentiana must be situated at the BNQ which has the specific obligation of ensuring processing and conservation of this material. We believe also that the responsibility for bibliographic processing of non-Quebec origin library materials and location services for all materials (including Laurentiana) in Quebec libraries should be entrusted, at least provisionally, to the Quebec Conference of University Rectors and Principals (CRPUQ) through its Library Committee. Eventually, another organization, such as an independent corporation, could take over. We believe that the CRPUQ must assume full responsibility for the regional bibliographic centre: for it is very important that only one communication network be

created in Quebec."

Confronting that opinion with what appears to be the avowed line of thought of governmental authorities, it looks like, with the exception of Laurentiana, we will again be faced with conflicting interests and policies, another nightmare in the long dream. This is nothing to be overly pessimistic about; rather it is another challenge requiring practical and sound solutions which will pave the way towards a workable Quebec library network. I am quite confident Quebec librarianship can meet this challenge.

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THE ONTARIO UNIVERSITIES' LIBRARY CO-OPERATIVE SYSTEM, AND IMPLICATIONS FOR REGIONAL AND NATIONAL NETWORKS

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Introduction

The Ontario Universities' Library Co-operative System (OULCS) was approved by the Council of Ontario Universities (COU) in June 1973. The guidelines for the establishment of such a System were provided by a joint meeting of the Council of Ontario Universities and the Ontario Committee on University Affairs in 1968. These guidelines specified that (1) each university be prepared to commit itself to participate in an Ontario Universities' Library System; (2) each university library be essentially self-sufficient in the provision of service for undergraduates and be effectively interdependent in the provision of service for research and graduate use; (3) there be appropriate co-ordination and centralization of technical processes; (4) automation be introduced where appropriate; (5) there be appropriate centralized storage of less frequently used library materials.

The proposal for the establishment of OULCS, developed by COU's Board for Library Co-ordination, encompasses all of the COU-CUA principles:
1) shared automated library systems;
2) the development of union files to be used to rationalize collections development and maximize the sharing of research resources;
3) develop and implement a provincial collection development policy for 15 universities;
4) conduct a survey to determine the need for and feasibility of establishing a depository library or libraries in the Province.

The formal structure of the OULCS is designed to include and utilize appropriate expertise (both library and faculty) in order to reach the goals and objectives. It is believed that success in planning and implementing library systems and programmes depends very much on the acceptance, assistance and support of the faculty and administration of the universities.

Sharing Library Systems

The sharing of library systems in the Ontario university library community began early in 1971 on an informal basis. Two university libraries concluded, after considering the co-operative use of the Guelph Documents System, that benefits for each library could be realized. The benefits anticipated were (1) provide users with access to a larger number of documents; (2) rationalize the collection of documents by the two libraries; (3) share workloads related to listing documents and maintaining automated programmes and files. The benefits became a reality and other libraries asked if they could participate also.

Today there are six shared library systems:
1. *The Guelph Documents System.*

Development in this project has been particularly exciting. Each participant ships local tapes to McMaster University once a month, to be merged for the union file. The union file has been produced in hard copy for the past year, but switches to COM file (fiche) in June, 1974.

Studies have been done which indicate that more than 80 per cent of a documents collection are issued as series or serial. This fact means that assignment of coding responsibilities for the remaining 20 per cent of the documents has greatly reduced the amount of original coding done at each library. The development of an alternate document code field has increased the flexibility of the system, making the inclusion of complete retrospective files much simpler.

With union lists or supplements produced monthly, and with each participant meeting local documents access needs through the variety of indexes — personal or corporate author, title, series, serial title or subject (KWOC) — which the Guelph system provides, the project group is now moving toward the ultimate development: on-line.

2. *Co-operative Union Serials System. (CUSS)*

Nine university libraries as well as the Toronto Metro Public Library participate in the CUSS project. A union serials list is already into its second edition, and is extensively used for inter-library loan and collection development purposes. Agreement to accept the CUSS union list as adequate verification

has reduced interlibrary loan processing time in the nine participating libraries.

The most interesting development in the CUSS project was that it initiated the Ad Hoc Discussion Group on Serials Data Bases, chaired by R. Anable, (first chairman of CUSS) This group is now international and has received funding from the Council of Library Resources to develop a common format for serial records

3. Subject Authority System

Four university libraries participate in this project. An agreement with the University of California, Berkeley, has been reached with the objective of developing the subject authority system so that it can be used in conjunction with on-line catalogue support systems.

At present the system has Library of Congress subject headings in machine readable form and has been used to print out subject guide cards and cross references for public catalogues. When the cards are filed, the library provides input to the machine file re: which subject headings were used, and also inputs those headings used in the catalogue that are not in the machine readable file. In this way, the individual library's authority file is developed. The file must be maintained, i.e., updated when new subject headings are used.

4. Map project

Five university libraries are participants at present, although this project is still in the development stage. OULCS is working with Laval University, hoping that a compatible system for the university libraries of both provinces can be developed. A report by Ralph Daehn, University of Guelph, analyzing the philosophy and formats of three systems (Laval, Guelph, CAN/MARC) will form the basis for the establishment of the OULCS system, tied closely to the French language system developed by Yves Tessier, at Laval. (CARTESS)

5. Inter-university borrowing project.

Agreement of principles for an inter-university direct borrowing system for graduate students and faculty members has been accepted by the Board for Library Co-ordination, and the project should begin operation in September 1974. Each participating university must have an acceptable sanctions policy in operation at its own university, and agree to support any claims made by another university, should one of its own borrowers abuse the system

Transaction forms, borrowing cards, regulations and procedures have all been established, and at least four libraries are ready to begin the experiment with the beginning of the fall semester

6 Catalogue support project

The biggest project — both in scope and financial committments, is the Catalogue Support System. Five of the Ontario University Libraries (Brock, Guelph, McMaster, Western, York) and two of the Quebec University Libraries (Laval and McGill) compose the users of this system for the first year and a half. The National Library of Canada has also asked for membership, since its participation would be invaluable in the development of the national network.

The Board for Library Co-ordination's proposal recommended that an on-line cataloguing support system be mounted as a demonstration project in order to test the feasibility of such a system. The Ministry of Colleges and Universities was asked for $386,000 as seed money to mount the project. The Ministry approved the request.

Several principles were followed in the preparation of the proposal for the cataloguing support system.

1) the development of a union file of holdings is essential for the collections development work that must be done;

2) the adherence to bibliographic standards is essential for the development of compatible records useful for cataloguing support and collections rationalization;

3) the cataloguing support system should be expandable to public and college libraries;

4) the bibliographic standards should be as closely aligned with Canadian standards as possible in order that the system and its products will support National Library development.

The Board's sub-committee, which developed the on-line cataloguing support system portion of the proposal, investigated both the University of Toronto Library Automated Systems (UTLAS) facility and OCLC in order to determine their capability to support the cataloguing system planned. Several factors had to be considered in the selection and/or design of the automated systems support system:

1) there was a strong desire to have the automated systems support at home, i.e., in Canada;

2) funds available for developing systems support from "scratch" were non-existent;

3) the hardware-software component had to be flexible enough to meet the requirements of the OULCS cataloguing support system.

Agreement was reached with the University of Toronto in April, 1973, that the on-line system developed by UTLAS could be expanded and modified to form the basis of the OULCS co-operative catalogue support service concept

This project is, of course, a demonstration and

mary ideas are being experimented with for the first time, certainly in Canada. The first six months of the project were spent in developing standards, formats, manuals, etc., and in choosing support equipment which would be required.

Terminals

A Canadian made CRT terminal has been selected to be used in the Cataloguing Support System. Lektromedia in Montreal has developed the terminal to meet the specifications set by the Cataloguing Support System User Group and the UTLAS. The terminal has edit capability, an extended character set, and diacritics. A printer can be attached (a Texas Instruments printer has been selected).

Most of the present users are connected to the centre via Bell Canada's Data Route.

Standards

The first activity of the Cataloguing Support Project User Group was to decide on the bibliographic standards. These principles were agreed upon and used in developing the standards:

1) The OULCS Union File Standards were developed using the Canadian MARC Format for Monographs as the authority for the bibliographic content and tagging structure of the Standards.

2) The Anglo-American Cataloguing Rules, North American Edition, as applied by the Library of Congress, will be used by participants.

3) The International Standard Bibliographic Description -- Monographs recommendations as formulated in the revised Chapter 6 of AACR will be followed.

4) Cognizance of international standards issued by IFLA, LSO, etc., will be maintained. Inasmuch as the CAN/MARC Format for Monographs is the format authority and the National Library of Canada has pledged to follow international standards as closely as possible, the OULCS Union Catalogue Standards should not vary from such standards except through oversight or by design.

5) The users of the Cataloguing Support System will use American spelling of the English language when creating original or upgrading derived cataloguing. When words in the descriptive portion of a record being created are spelled in the material described in British spelling, e.g. colour, favour, etc., such spelling will not be changed.

The Group next determined the protocol to follow for using derived cataloguing records, e.g., Union File first, LC if the item being catalogued is not Canadian literature, history, law, or government publication, CAN/MARC if the material being catalogued is Canadian literature, history, law, or government publication, BNB if there is no record in the Union, LC or CAN/MARC data bases.

The final step in setting the bibliographic standards consisted of reviewing the CAN/MARC Format for Monographs and considering the importance of each tag, indicator, and subfield code. The following specification codes were assigned to each datum element, tag, indicator, or subfield code:

MAN — Mandatory
RIAP — Required if applicable
RIAV — Required if readily available
OPT — Optional
SOPT — Use of subfield code is optional; data must be input
SYST — The system will supply the data automatically
* — The tag, indicator, or subfield code is reserved at this time.

Source files

a) The System provides on-line access to cataloguing data available in LC, BNB, and CAN/MARC data bases converted to Standardized OULCS/MARC format* with as much ISBD punctuation added as is possible by machine recognition.

MARC source records will be kept active for 15 weeks following receipt. The most requested records will be maintained active for longer periods of time. Following the active period, each record will be put in indefinite passive storage, from which a user may recall it to active status for a limited period.

b) OULCS Union records will be held active for an indefinite period, until the User Group and the Office of Library Co-ordination determines otherwise.

c) A user's own records (local files) will remain active as long as specified by the user, at the user's expense. A user may specify that records be automatically stored in a passive file when catalogue records have been produced.

Access to national MARC records

Access Keys

a) LC card number — a record displayed unless there are multi sources in which case the user chooses the source according to the protocol developed by the User Group.

b) ISBN — record displayed with stipulation as above.

c) Author**— up and down Browser capability and record display if user wishes.

d) Title — up and down Browser capability and record display if user wishes.

e) Precise Title -- with leading non-filing characters omitted — ditto as 1 and 2.

* Standardized Format is a superset of OULCS record format
** Including access by Author and Title added entries

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Retrieval of data
Batch Mode
a) Printouts in edit list form.
b) On-line hard copy of data printed out immediately on the Texas Instrument printer attached to the CRT terminal if the record is in active storage.
Active/Passive Files
a) Active – immediate display
b) Passive – delayed display.

The system does not necessarily keep a requested record in an active state. When a record is requested and provided, the use of the system is recorded, and the record is provided to the user, (e.g., hard copy via the Texas printer, a print-out, or the record is edited on-line on the terminal.) When the record has been enriched to meet the User Group Bibliographic Union File Standards, it is put into the Union File and maintained active.

When a record is requested by LC card number or ISBN, but it is not present in the National data bases, a record of the request will be maintained. If a second or third, user asks for the same record, a queue of requestors will be developed. After a specific period of time has elapsed (two weeks), one of the requestors will be notified to catalogue the title originally. When the catalogue record has been put into the Union File, the other requestors will be notified that the record is available so that they may use it

Access to Union File records
Access Keys
a) LC card number – record displayed.
b) ISBN – record displayed.
c) System record number – record displayed.
d) Author – Browser capability and record display.
e) Title – Browser capability and record display.
f) Author-title combination – Browser capability and record display.

Retrieval of data
As in retrieval of National MARC records

Active/Passive Files
All Union File records will be kept in active storage for the Demonstration Year unless the number is more than anticipated

Access Protocol
If there is a Union File record a requestor will only have access to that record automatically. He may have access to the source file by keying in such a request. According to the User Bibliographic Standards, a Union File record may be enriched but no data in the record may be changed and/or deleted. The rules state that if a user enriches a Union File record and there is the discrepancy will be brought to

the attention of the User Group and/or the Director of the Office of Library Co-ordination for a decision on whether to change the Union File record or not.

Only one record for a unique bibliographic item may be in the Union File. The only exception to this will be a transliterated record where the French language and English language libraries use different transliteration tables.

In-putting a Cataloguing Record
The User Group Bibliographic Standards state that: "A user is obliged to upgrade a derived record or input an original record to minimum Union File bibliographic standards before he may deviate from the standard."

The following local use tags are provided for the user:

035	Local control number
090	Local call number
1XX	Name entry (replaces union entry)
5XX	Local notes, e.g., Library lacks, for holdings see . etc.
6XX	Subject added entries
7XX	Other added entries
8XX	Series added entries
9XX	Equivalencies in French or English.

If the user chooses to add more datum or alternate datum it may be added in the corresponding local use tags. The use of these tags will cost the user more money for file storage, however. If the user wishes, he may input a complete alternate record (alternate to the Union record), but he will have to pay extra for storage costs, and the deviant record must be input according to the rules specified by the User Group, i.e., a Union File record must be input first before a deviant record.

Displaying a User's Record
A user may call up a display of cataloguing record with his local data for the purpose of changing holdings information and/or altering local use tags. After changes are made, the user may wish to receive new catalogue cards. If he does, he will give this instruction to the system. Each user will have read-only access to other users' files. No privacy limit has been established by the User Group as yet.

Hard Copy Products
The system will provide the following hard copy
1) full and completed catalogue cards arranged in filing sequence in streams, i.e., shelf list, author, title, etc.
2) punched circulation cards prepared according to the user's profile
3) call number labels for spine and book labels
4) catalogued acquisitions lists based on the user's profile

Available on special order
1) current awareness listings based on the user's profile
2) subject bibliographies based on the user's profile
3) a tape of the user's transactions.

Statistical Data
The system will produce data useful for monitoring use of the system e.g., number of derived records, number of original records, number of records used by more than one user.

The system will also provide the use/cost data necessary for charging the user

Progress Report, Monograph System
In May, 1974, almost one year after the project began, 7 libraries — Brock, York, McMaster, Western, Guelph, Laval and McGill, are actively testing the system. Twenty-three (of a final twenty-six) terminals have been installed, and are being used for searching, editing, revising inputting, and the production of catalogue cards and associated products.

It would be unfair to state that there have not been many problems. The terminals did not arrive on time, and, initially, did not meet specifications. Program or system design breakdowns necessitated the lending of an experienced cataloguer to UTLAS to define, on the spot, OULCS library requirements. The local use tag, '090', had to be greatly expanded, for example, to handle the varied holding statements for universities with several campus libraries. The Xerox software used by UTLAS did not satisfy the extension of an on-line system with extensive edit/search activities, to such a large group of widely dispersed users.

Satisfaction, however, can also be reported, particularly with the original co-operative concept. The provision of original cataloguing copy in the union source file which is acceptable to all because of adherence to the OULCS standards has already reduced the work load in some of the participating libraries. It is to be hoped that by the end of the pilot project the same operating success can be reported in the OULCS monograph cataloguing support system as now obtains with respect to both documents and serials.

Collection Rationalization and Policy Development
In addition to the various operating projects, the Office and Board of Library Co-ordination are also responsible for collection rationalization. The initial emphasis within OULCS has been on development of union catalogues which will make such rationalization feasible. Limited rationalization has already been achieved through the union documents

catalogues and serials lists.

Concurrent with the production of union catalogues has been the development of uniform collection policies for each university library. These are linked to discipline assessments which are the responsibility of another COU group, the Advisory Committee on Academic Planning (ACAP). Appraisal of each graduate program in Ontario includes a review of the library collection in that discipline, and a collection policy statement must be included by the Library for assessment by the appraisors. A Committee of the Board, with representatives of both the library staff and faculty of each university, meets regularly to co-ordinate the development of these policies.

The objective of both the collection policies and rationalization is to reduce the duplication of little used material held in the Ontario universities. The need for this has become imperative because of the shortage of library building space. A study of a co-operative storage library is also high on the list of priorities for OULCS

Conclusion
One of the most exciting developments within OULCS has been the co-operation with university libraries in Quebec, and with the regional public library systems in Ontario. Both groups have observers or participants in most of the OULCS projects and all systems are being designed with the capability of expansion – either outside of Ontario or to other types of libraries within Ontario.

We also have been working closely with the National Library, and have received both encouragement and assistance. The Department of External Affairs Library, as a representative of the National Library, is a participant in the Documents Project, and the National Library, which is implementing the OULCS Documents System, is an observer. The National Library also acts as an observer or participant in the Monograph and Serials Projects and is kept informed about the Map Project development.

We thus have the nucleus for the national network envisaged by the Canadian Union Catalogue Task Force. The interim recommendations of this group concluded that:
"A Canadian union catalogue system, including inter library loan and location services, could be constructed out of a number of interprovincial or intraprovincial bibliographic centres linked to a national centre at the National Library of Canada ... Responsibility for any national bibliographic network would be shared among the federal and provincial governments, with clear distinctions being made in regard to specific areas of respon-

sibility."[1]

Further experience will be necessary before we can determine if Canada should ultimately have a centralized network or decentralized regional systems, centrally co-ordinated. In Ontario, we do not yet know if we should have one system encompassing all libraries, or compatible systems which are subsets within a provincial network. One thing, however, seems certain. Co-operative development as demonstrated by OULCS and shared with Quebec universities, the National Library, and the Ontario regional public library systems is a positive step in the direction of the national network that we are all working to achieve.

1. National Library News 9 no. 1 January, 1973 p.6

LIBRARY SYSTEMS AND
NETWORKS IN THE
PRAIRIE PROVINCES

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National Policies

Before examining the local, provincial and inter-provincial systems, let us briefly review the national policies to see how the efforts at the lower level might possibly dovetail with them.

As outlined by G. Sylvestre (2): "There is no single body in Canada . . . which has full authority for the development of a nationwide library policy which would govern all types of libraries." The principal co-ordination agency is the National Library with special responsibilities assigned to NSL through NRC as far as STI is concerned, and both must count on the voluntary co-operation of institutions operating under other levels of jurisdiction in order to develop further the kind of information networks which would meet more adequately the needs of all types of users. The National Librarian further states (2) 'We must rationalize our research collections, we must develop compatible systems as prominent goals along our way toward networking." A network should be understood to be a dynamic system since 'one should always remember that members of networks should not be merely passive, they should all contribute something to the system . . ."

In the field of Science Information, a small planning group was appointed in May, 1972 by the President of the NRC to examine the development of a national STI system. As a result of its study (3), the group made several recommendations relating primarily to the development of greater collaboration en the major information dissemination

centres, the identification of user needs, and the utilization of specialized information centers as nodes within the national system.

Local Developments

A meeting was held at the Library of the University of Calgary (7) on 13, 14 September 1973, to consider the possibility of establishing a centre in the Western Provinces as part of the national bibliographic network. The meeting was a response to the suggestion of the Canadian Union Catalogue Task Group of the National Library that an inquiry be made as to what co-operation already existed and what was planned for the future. Representatives of the various university and public libraries were in attendance and agreed that following further development of networks on a provincial basis there should be one regional centre for Western Canada.

The emerging Alberta Library Study is a recent example of activities to report on in this context. This major study of libraries in Alberta is being undertaken to explore the role libraries will play in the 1970s and 1980s. The reasoning behind this project is that no one library can offer all the services and materials needed by its users and therefore all libraries in Alberta can benefit from a closer co-ordination and co-operation.

Objectives set for this project have been spelled out in a proposal (8) based on the initial submissions by the Library Association of Alberta and the Alberta Trustees Association. The proposal calls for evaluation of the existing services, materials, and organization of libraries: identification of their role in relation to the needs of library users. A plan is to be prepared for the future development of library services as a result of this study.

The Alberta Library Study conducted public hearings in March and April 1974, with the need for increased funding and strong provincial government leadership to co-ordinate library services being recurrent themes in the 15 briefs presented. Most briefs recommended that a provincial library service centre be set up, pointing out that other provinces already have such centres. The Calgary Public Library proposed that the central library establish a communications network linking all libraries in the province and encouraging interlibrary co-operation and sharing of resources. A provincial bibliographic center, linked with regional and national bibliographic networks, would record holdings of every library in Alberta and would handle interlibrary loans.

Another example of an arrangement which pulls together resources for the mutual benefit of the

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participants and through them, for a large number of users, is the *AIRA* (Alberta Information Retrieval Association). This non profit organization, which was established in 1967, has, in the recent years, marketed its own services (Chemical Abst. Conden sates, CAIN, Gas Chromatography), along with the services of the University of Calgary, and has also acted as middle man to supply services available outside the Province of Alberta to its clients within the province. Early in 1974 AIRA concluded an agreement with the National Science Library whereby, the CAN OLE services were made access ible through AIRA to three partners (AIRA, the University of Alberta, and the University of Calgary) which could otherwise not have afforded to sub scribe. This information is being tapped via a Data route from Ottawa and the local partners access it by dialing a common port in Edmonton. For two this means a local number but for the University of Calgary it is a long distance call. Contributions from the other two partners partly correct this disparity.

This particular example shows how by co operative arrangements additional services may be obtained which are beyond the financial capability of individual institutions.

In the remainder of this decade it is hoped that improved computer services in higher education will be made available to library and information services in Alberta. In 1970, a Steering Committee on Computer Development was established by the Universities Commission, the Colleges Commission was also invited to participate. This Committee appointed a co ordinating Sub committee and five Task Forces to enquire into various alternatives to meet the ever increasing computing needs in the area of education. This sub committee has investigated six possible solutions and made a recommendation which appears to the Sub committee as the most viable one under given circumstances. It is evident that any improvement in provincial computing services will directly relate to library and informa tion services, especially if it enables the parties to share hardware and software over efficient tele communication lines.

In 1969 the *IPCUR* (Interprovincial Committee on University Rationalization) authorized a study to be conducted by a team of four experts consul tants headed by Dr R. Shank. This team submitted their report in March 1970. (It was amended in February 1971). The general objectives of the study were to investigate co operative automated library systems in the Western Provinces from the point of view of collections development, sharing of library

resources, and in relation to national computerized catalogues and other national services, as well as other co-operative systems.

The report resulting from this study [4] recom mended that the Western Provinces of Canada moved toward a "megasystem organization" during the next ten years to maximize the benefits available to the universities of the region. There was no immediate urgency to initiate work on a computer sub-system, but there was an immediate need for clarification of the design elements, systems of governance and essential limitations of the presumed resource-management subsystems. Each university, it noted, should develop internally and formalize at its highest levels a clear and detailed statement of the quality levels it requires for library and related informational services.

This project took 16 months to complete, the bulk of it in 1969 and 1970. Although at that time, large projects such as the Ohio College Library Centre, NELINET, etc. were not yet fully imple mented and the MARC distribution was only in its initial stage, some ideas propounded by the report were remarkably farsighted (such as the proposal to establish a Library System Development and Service Office reporting to the IPCUR, and endow it with considerable authority and powers) even though never implemented. Many statements are of a general nature but carry advice and warnings that should be heeded. The report maintains that "large scale, widespread systems that encompass all IPCUR schools will best be advanced at present through growth based on expansion of the most successful small scale systems." It did not recommend centralized technical processing for all IPCUR schools at that time. Interestingly, it did mention the work of the University of Calgary and AIRA in the field of current-awareness and suggested their continuation with as little duplication of effort as possible.

An example of the sharing of a library system is provided by the *TESA* system (developed and made available by the University of Saskatoon) now being implemented at the University of Calgary to handle acquisitions and cataloguing. Under an agreement being negotiated with the SAIT (Southern Alberta Institute of Technology) and with the Medicine Hat College the University of Calgary would provide these institutions with printed MARC records as required thus saving the cost of cataloguing. The most convenient way of supplying the card numbers to the system remains to be determined.

The acquisition by the University of Calgary of the TESA (Technical Services Automation) system

and the nominal fee charged by the University of Saskatoon is evidence of a good spirit of co-operation between these libraries. This has been made possible by the existence of the COPUL [7] (Council of Prairie University Libraries) which consists of the Chief Librarians of the university libraries in Alberta, Saskatchewan and Manitoba. Among other matters. the COPUL discusses possibilities of sharing automation developments. As a result of this, the University of Alberta in Edmonton is linked with the MEDLINE operation at the University of Calgary. Yet another positive achievement of the COPUL is the co-operative publication of a Union List of Newspapers held by Prairie University Libraries.

Under the auspices of the Department of Education in Edmonton (Alberta) an informal committee has been set up to investigate the possibilities of joint co-operation in the development of a computer based system for the identification, evaluation, selection and distribution of learning resources throughout the province. This project substantiates the idea that sharing resources applies to non-print holdings in much the same way as it does to print resources; the full array of media materials is included (16mm, 8mm, Super-8 and 35mm film, videotapes, filmstrips, slides, audiotapes, kits, models, realia, transparencies) to enable integration of educational materials into the learning program. The data bank which will result from this project is to serve all school systems in the province.

A very interesting experiment is being planned by the Western Canada Post Secondary Co-ordinating Committee under the joint sponsorship of the Alberta Educational Communications Corporation and corresponding institutions in other Western Provinces.

This experiment is concerned with the ineffecient use of educational resources, among them library holdings, in the universities and colleges of Western Canada, and specifically with increased sharing and pooling of these resources. The CTS satellite to be launched by the Department of Communications in October 1975, will be used as at least part of the telecommunications system. While this satellite is only capable of providing a link from one point to another, the subsequent satellite (1977) should be capable of transmitting a signal over all of Western Canada.

This common venture is intended to create interest in co-operative sharing of educational, and among them library-type, resources and demonstrate the impact of the new technology and its usefulness. Specifically, this project will present the potential of information retrieval to a remote and even unso-

phisticated user. The data bases installed presently at the University of Calgary and searched in the batch mode, will be made available in the conversational mode by an on-line system. Three portable terminals with both typewriter and video display facility are envisaged for this purpose and will be moved from one prairie province to another. Besides the terminals, three television monitors will be supplied to support television instruction preceding each session. Hard copies will be obtained from typewriter, printer or by mail, although telefacsimile is also under consideration.

Although this experiment is limited in duration, it should enable us to determine whether more permanent linkages of similar types (with any content) would be practical and/or desirable.

The closed-circuit teleprinter network established in the Fall of 1972 at the University of Saskatchewan -- Regina Campus [6] clearly falls into the catagory of systems and networks under review in this paper. The University, functioning as the resource centre, is tied in to the network with the Public Library and the Provincial Library and through the latter, indirectly with various Regional Libraries in the Provincial Library System; interlibrary loans and reference information are the primary function of this network. The University Library also provides for Telex transmission linkage between the other two libraries and the National Library. The Saskatchewan University Library (Regina Campus) will be functioning as a resource centre in yet another network; the network of hospital libraries which is in the planning stage and is to provide cataloguing services[6].

Whether Local or National

These activities are all isolated; they are either on a small scale with a limited scope or they are only in the planning stage. When sophisticated technology is used (e.g. CTS Satellite project) it is generally only for a short-term experiment, the outcome of which has yet to be evaluated and recommendations made; or, as in the case of the AIRA, there are financing problems. Summing up, although these projects alone do not bring about any significant change in the everyday pattern of processing and obtaining information in the Prairie Provinces, there is nevertheless some element of benefit and progress to be recognized in the local venture.

A strong argument for local efforts is the fostering of expertise in libraries and information centres. The absence of expertise would be a serious obstacle even for a centralized networking effort to overcome, and it is difficult to imagine that national services would supply experts along with their packages. Therefore, local people knowledgeable

in the field will be invaluable in installing, running and promoting both local and national services. Local efforts also have the beneficial effect of creating and keeping up interest in systems and networks among users, professionals, administrators of institutions in question, and even granting agencies. Along with increased interest there is increased communication which should be mentioned separately from the development of expertise. Unless people are completely involved no system will work properly and the more intelligent the discussion before adopting a system the more meaningful will be the results.

Another benefit that may be derived from locally designed systems is their being tailored to meet real needs in a real environment, due to their closeness to the "grass roots." The policy of transplanting systems has to be watched carefully (it would be equally harmful to reject this idea completely since there are situations where existing systems may be applied with advantage). By "real" needs we mean that a local system may be expected to be directed more towards solving acute problems if the priorities are established equitably. Contact

with ultimate users is also easier locally, even though all big networks have incorporated some means of feedback.

The direct involvement (administrative, legal, and financial) of those forming a network may be quoted in support of a local (provincial, regional) undertaking.

On the negative side, one serious objection may be raised against an uncontrolled growth of local (provincial, regional) networks and systems: Whereas, at present, planners of provincial networks are faced with the problem of similar libraries, the future planners of comprehensive (interprovincial, regional or national) networks will be confronted with a multitude of different networks and systems which it will be difficult, if not impossible, to bring to a common denominator due to their vast diversity and lack of common standards, and, of course, due also to the huge investments in hardware, software, etc.

Table I illustrates suggestions as to what may be done at various levels.

1. SUGGESTED RESPONSIBILITIES IN LIBRARY SYSTEMS & NETWORKS

Systems or Network Activity	Level					Objective	Note
	National	Regional (Interprovincial)	Provincial	Consortium of Libraries	Individual Library		
Production of National Bibliography (also machine readable)	X					National bibliography including books, pamphlets, microforms, films, phonograph records, government publications. Local production of catalogue cards, subject bibliographies as locally requested. Local SDI service possible	CANADIANA in the Marc Format. Co-operation of lower levels required for proper implementation and operation.
Union Catalogues	X					To show location of publications to facilitate interlibrary loans	Canadian Union Catalogue (encompasses holdings of over 300 libraries) (NL). Union List of Serials in the Humanities and the Social Sciences (NL); Union List of Non Canadian News papers (NL); Canadian Theses accepted by Canadian universities (NL); Union List of Scientific Serials in Canadian Libraries (NSL)

Systems or Network Activity	Level					Objectives	Note
	National	Regional interprovincial	Provincial	Consortium of Libraries	Individual Library		
Interlibrary Loans	X	X				To channel published items to individual users on request through local library	Machine Readable Union Catalogues could serve to locate items. Either a central or regional on line system should handle request slips, shipping and billing. Telecommunications should be replacing mail—computer network plus image transmission.
Standards Development	X					To bring about compatibility. Unified internal procedures lend themselves to standard automation systems. Standard terminology, record format, user interface, systems, etc.	This should precede any computerization. National standards should take into account international standards where available and honour local interests. Computerization calls for standardization of procedures. This has been largely neglected.
Collection Policies						To determine what should be the trend in building up collections in individual libraries. Specialization in subjects and/or forms.	Applies to all libraries but coordination is highly desirable at any level. Computerized tools may be created to facilitate decision making.
Referral Centres	X	X	X			To refer any user to the source that will meet his needs.	This service may be most efficiently provided by centres appointed from among the established ones. "Provincial", e.g., means that it would serve users from a province but referral would be to any centre across the country. Methodical guidance might be from one focal point
Serials				X	X	Ordering, accounting, check in, claiming, binding, production of lists and catalogues, of serials.	Mostly a local venture but with proper planning and design might be usable for union catalogue at a higher level.
Reference Services					X	Refer a requester to printed sources of information, using directories, year books, encyclopaedias, dictionaries, reference books, but also special subject bibliographies and catalogues. "Dial-Access Libraries" provide access to brief summaries on tape by telephone, the tape having been selected from a printed catalogue distributed beforehand	Usually restricted to one library, as opposed to information retrieval which is not limited to any specific holdings. It should be possible to widen the scope to other libraries which would call for improved ILLO within a network

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Systems or Network Activity	Level					Objectives	Notes
	National	Regional (interprovincial)	Provincial	Consortium of Libraries	Individual Library		
Production of Catalogue Cards			X	X		To share the Marc database and the required computer program and to eliminate costly cataloguing in participating libraries.	On-line or batch made, or a hybrid system where search of the Marc system is performed on-line and the print is conducted in batch mode.
Technical Services Acquisitions and Cataloguing				X	X	The Marc file is used to create computer-printed purchase orders and other acquisition processing forms, together with additional information entered on-line or keypunched in cards. System contains records of books on order, cancels orders, issues claims, supplies sets of catalogue cards and spine labels. The catalogue data file may be updated and maintained.	Usually limited to individual libraries; could be shared by a group of libraries given standard procedures. Batch, on-line or hybrid.
Circulation				X	X	To answer questions as to whether a book has been charged out, who is the borrower, to make reserves, to print recalls and overdue notices, fine notices, to furnish statistics for selection of additional copies, elimination of useless books; also useful for collection development policies.	Batch process or on-line (deferred or real time). Circulation systems usually operate within a library or in the framework of an organization having more than one library.
Selective Dissemination of Information	X	X	X	X	X	To supply patrons automatically, on the basis of their profiles, with relevant information from one or more data bases in regular time intervals.	Mostly in batch made local or remote. On-line systems include SDI as special feature. Optimally there should be some plan established so we can process all available tapes without duplication (or with minimum of it). SDI may work at any level either processing or search editing, promotion and feedback only. Division of labour should be the leading principle.
Retrospective Searching	X	X	X	X	X	To search entire data base, or a major portion of it, against a one-time query	Batch mode or on-line. The same applies as above for SDI. Identical tapes may be used after having been merged.

How these library systems could meaningfully evolve and gradually transform into local, provincial and regional networks, is shown in Fig. 1.

They should be moving in the direction of narrowing down and finally closing the gap between local and central endeavours. The graph is a combination of

the slight observable trend intelligent forecast and wishful thinking

Summary and Conclusions

The development in the area of systems and net works as defined in the Introduction, proceeds locally, at the provincial as well as national level Most of the work is being done spontaneously without any co ordination. In order to avoid the situation where individual systems become incompatible, a concentrated standardization effort should be initiated immediately in all areas of concern. There should be no undue delay in establishing referral centres.
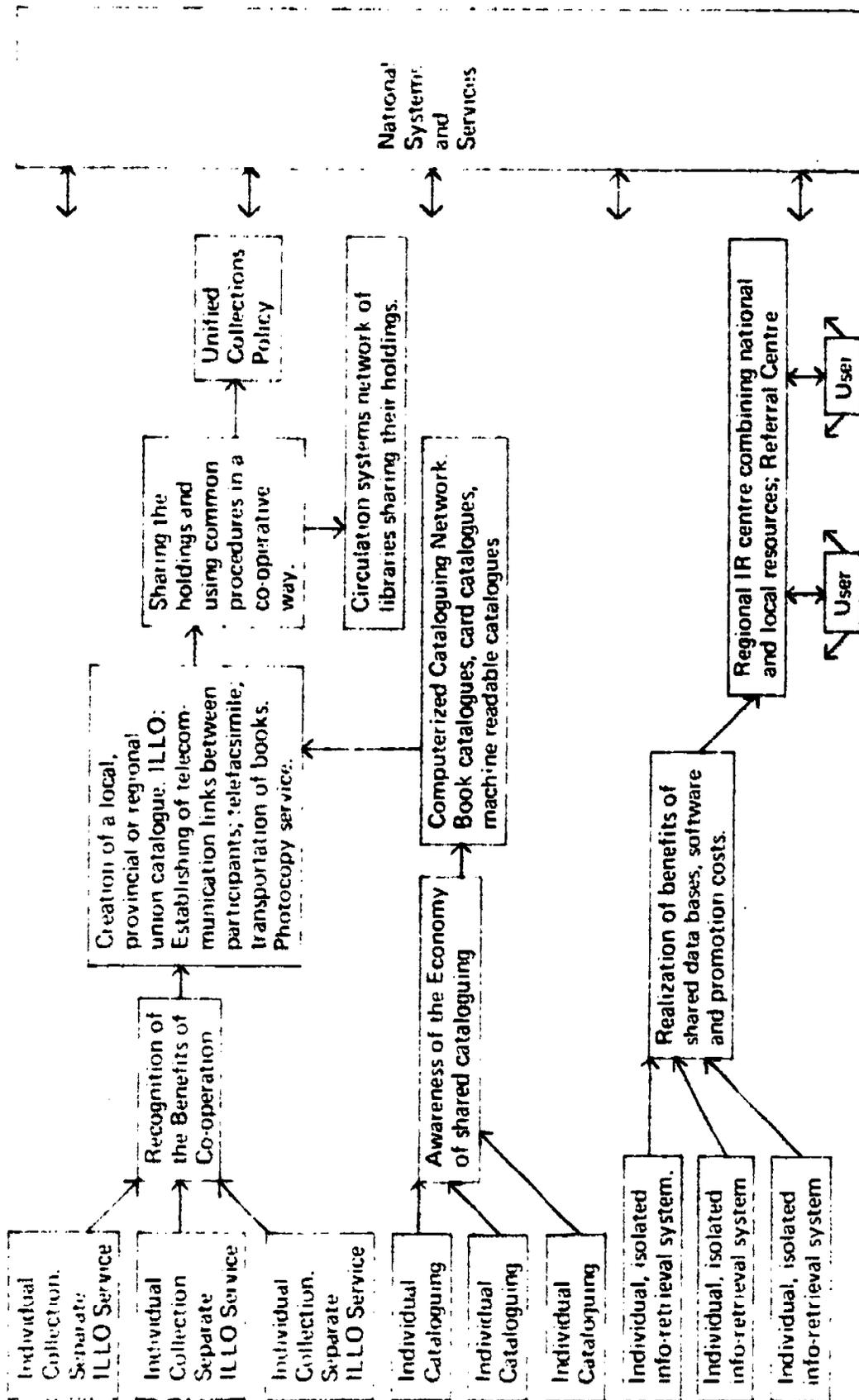
The material presented from the prairie provinces illustrates how both information suppliers and information consumers, have become aware that it is time to utilize the untapped resources made possible through co operation and co-ordination Given modern technology this presents a real challenge [5]. The existence of the Dataroute telecommunications link will enable central information services to be put to use. The development of a provincial computer network will promote the use of local data bases, on line. Data bases have been used co operatively for five years, even though on a limited scale. The proposals mentioned above, under Local Achievements, if implemented, would be directed towards creating a Provincial Union Catalogue, serving interlibrary loans in accordance with regional and national networks; if such a network were properly conceived, it would expedite interlibrary loans, foster the idea of shared holdings, and might even lead to the formulation of unified collections policies. Cataloguing services are another field where interest has been shown in the prairie provinces, besides appreciable saving of effort, this type of co operation will demonstrate the utility of using a common, standard record format for information transfer If and when libraries begin to share their collections, and pending establishment of an efficient ILLO service, circulation systems could possibly enter the sphere of co operative systems; the same applies to the technical services (acquisitions, and cataloguing)

The most efficient method of ensuring increased nationwide co operation between libraries would appear to be through the use of a series of three to five regional centres to provide an effective interface between the national centre on the one hand and local and provincial efforts on the other These regional centres might help to direct feedback to the national centre, promote services (local and central), train users, act as consulting centres to assist in selection and implementation of standard compatible systems, and function as referral centres; they could also be helpful in developing policies and standards.

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Fig. 1 THE WAY LIBRARY SYSTEMS MIGHT EVOLVE AND TRANSMUTE INTO NETWORKS

National Systems and Services

Individual Collection. Separate ILLO Service

Individual Collection Separate ILLO Service

Individual Collection. Separate ILLO Service

Recognition of the Benefits of Co-operation

Creation of a local, provincial or regional union catalogue. ILLO: Establishing of telecommunication links between participants; telefacsimile, transportation of books. Photocopy service.

Sharing the holdings and using common procedures in a co-operative way.

Unified Collections Policy

Circulation systems network of libraries sharing their holdings.

Individual Cataloguing

Individual Cataloguing

Individual Cataloguing

Awareness of the Economy of shared cataloguing

Computerized Cataloguing Network Book catalogues, card catalogues, machine readable catalogues

Individual, isolated info-retrieval system.

Individual, isolated info-retrieval system

Individual, isolated info-retrieval system

Realization of benefits of shared data bases, software and promotion costs.

Regional IR centre combining national and local resources; Referral Centre

User

User

LIBRARY NETWORKS AND SYSTEMS IN BRITISH COLUMBIA

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Systems and networks in library service are an old story in British Columbia. In the public library field co-operation goes all the way back to 1927. In the school system it may go back even farther. Special libraries and academic libraries have not been with us in large numbers, but in late years there has been a trend toward co-operation, particularly among the university and college libraries. Regrettably, though, practice in all categories has lagged behind theory. If credit can be claimed for partial accomplishment, a case might be made for progress in the field, in the form of an account of "the story thus far," looking into library activities in British Columbia as they may fit into the Conference theme: Canadian Library Systems and Networks – Their Planning and Development, and defining a library system or network as "any technique or procedure which links together for the mutual benefit of a large community of users, the resources and services of a group of libraries."

School Libraries

Approaches to co-operative service certainly vary from group to group, but equally certain is the fact that there is a common goal in the mutual benefit idea. As in other provinces, the administration of schools in British Columbia is divided among a great many school districts, and predictably the degree of library co-operation varies from nil to high. Since there is nothing to be gained by dwelling on the "nil" end of the scale, the obvious course is to look for an example of a school library system that distributes materials among libraries on demand, a procedure similar to that of a regional public library system, which not only backs up individual libraries with bibliographic information but transfers titles on interlibrary loan from one library outlet to another.

Logic would suggest that application of such an apparently simple idea as regional library service should ensure that materials relevant to specific topics could be rushed from place to place in an orderly, efficient manner over a relatively brief period of time. Not so. Loans between schools do take place, ad hoc – one librarian contacting another – but there seems to be little serious effort, or at any rate little success, on a system-wide scale.

What are the reasons for this? First, absence of flexibility. Great similarity persists in curriculum timing and content, particularly among elementary schools. On the other hand, the diversity in curriculum among secondary schools, coupled with their relatively large size, makes for difficulties of a different kind. While freedom of choice of subject may go down well with the individual teacher, it can play hob with the librarian, who does really need advance notice for the preparation of project material, and more often than not has to scramble to get something ready in a hurry.

Second, given the absence of proper interlibrary organization, it is impossible to substitute sheer manpower at the district level in order to try to move material from one point to another, even assuming some prior knowledge of the location of the material.

Third, unlike an integrated public library system, the school district does not have a unified collection. Operating budgets assigned to individual schools include the library budget, and this method of financing encourages a fragmented sense of ownership, with resulting possessive feelings about materials and equipment.

Where the effort does exist on a system-wide scale it works very well, as in one school district in the centre of the province. Here, the district resource centre is the co-ordinating agency responsible for the development of school library collections and services, including audio-visual and television as well as print. The overall aim is to improve services to all teachers and students by co-ordinating the development of school and school district collections and to promote programs which encourage and facilitate their use.

Many people believe that more school districts would move quickly into the field of integrated library services if they had the strong leadership of

transmit and [illegible] The previous Depart
ment of Education [illegible] preceding those
[illegible] and [illegible] of the
value of a properly [illegible] of school libraries
Unless there is a dedicated, knowledgeable librarian
available, as in the example mentioned, who can
assume command, the libraries of a district's
schools are doomed to continued fragmentation

College Libraries

In view of the slow growth of interlibrary co-opera-
tion among elementary and secondary schools, it is
surprising to find a number of library network links
in the community college field, since the colleges
are also creatures of school district organization
Part of the explanation is that the college libraries
have become involved almost from the start in
system activities at the academic level and have
been co operating and striking agreements with
public libraries. These activities have tended to
speed up mixed network formation, with less em
phasis on interrelationships among college libraries
themselves

Already, only nine years after the first com-
munity college was established, college libraries in
some communities are fully open to the general
public, and reciprocal borrowing is offered by all
colleges to local public libraries, enabling patrons
who are not college students to use the local college
collection. On the other hand some outpost or
satellite college centres have been given library
service through public library facilities in their areas.

Relationships with the university libraries and
the British Columbia Institute of Technology are
more complex. At present, BCIT is providing
special assistance in co-ordination of film resources
and the three largest academic libraries are pro-
viding back up service to community colleges.
Simon Fraser University library is serving as periodi-
cals resource for community college students, inter
library [illegible] and as a processing centre for
five central libraries. The University of Victoria is
providing similar service to another, and the
University of British Columbia has opened its
collection and its other library services for college
faculty needs.

Libraries, and, where appropriate, audio visual
services of three lower mainland colleges and four
other institutions have co-operated to produce a
union film catalogue. Another college library has,
through a grant from the Library Development
Commission, set up a union catalogue that includes
the titles of holdings of secondary school libraries
in several districts. The same college has been author

ized to investigate the possibilities of co-operation
between its own library and the public and school
libraries throughout the area it serves.

All college authorities have given formal approval
to reciprocal borrowing agreements among their
libraries. Any college student can borrow from any
college library. The next step should be co ordina-
tion of bibliographic development, establishment of
a union catalogue, and creation of an information
network within the college group. Should all this be
accomplished within the next decade, college
libraries will be leading the field in the quest for
province-wide interrelated library services

University Libraries

In the fall of 1970 a new academic organization
appeared on the library scene. Named TRIUL (for
Tri University Libraries), it is a co-ordinating agency
for a variety of matters of mutual interest and
concern to Simon Fraser University, the University
of British Columbia and the University of Victoria.
Although TRIUL in its present form has no legal
identity, is not officially recognized by its parent
institutions and cannot therefore be publicly
funded for research capability or other functions,
such is the interest and enthusiasm engendered
among the professional staff of the three institutions
that this voluntary enterprise has accomplished
perhaps more, certainly as much, in its three and a
half years as it might have done in a longer period
as an official institution.

Structurally, TRIUL works on a system of stand-
ing committees and sub-committees which in turn
create ad hoc committees and task forces. One of its
first publications was a directory listing its various
units, giving their terms of reference and their
composition. This directory is continuously revised
as units are created and, their work being done,
dissolved

The three University Librarians and the members
of the four main committees of TRIUL meet twice
a year, in April and October, for two-day sessions
in which the working units report on their assign-
ments from the previous session and the entire
gathering discusses a wide range of topics, of interest
primarily to academic libraries but often expanding
to involve library services in general as they affect
one another. It has become a general rule at these
sessions to have, by invitation, representatives of the
Vancouver and Victoria Municipal Libraries, the
Library Development Commission, the Academic
Board of British Columbia and the libraries of the
community colleges.

It is evident beyond doubt that we have in TRIUL

an original grouping of interests of three fast-growing academic libraries that has evolved into a structure with its own life and purpose. As a pattern for other provinces it could prove to be the nucleus of a nation-wide academic library network with like objectives, perhaps continuing along the same informal lines that have proved so successful for TRIUL.

TRIUL has been successful because the three university libraries are strongly committed to co-operation, co-ordination and integration — within the bounds of the three institutions, with other libraries throughout the province, and in library systems nationally and internationally. Despite the recency of their rapid growth they have laid the groundwork for a liberal code for interlibrary loan in British Columbia, special loan and cataloguing services to community colleges, and reciprocal borrowing privileges for undergraduates. To top this off, the TRIUL libraries are jointly operating a microfiche duplicator, systematically policing their respective collection policies to avoid unnecessary duplication, working with the Provincial Library on microfilming the index to British Columbia newspapers, and investigating the idea of co-ordinating efforts to index journals published in the province. If there is in British Columbia a linking together for the benefit of a large community of users, we have it in this group of university libraries.

Public Libraries

We have it also in our public library systems — eleven of them, all at different stages on their way to province-wide organization of library services. Responsibility for the success of such organization is a self-imposed task of the provincial Library Development Commission. The Commission's current plan, published in 1973 as the *Programme for Library Development*, is the latest in a line of survey reports, its immediate predecessor being *Public Libraries in British Columbia; a Survey with Recommendations*, better known perhaps as the Vainstein Report of 1966. The *Programme* is a modification of Professor Vainstein's survey, taking into account social and political changes that have occurred, most notably the creation of a supra-municipal structure called a regional district, which is the obvious choice as the basic political and economic unit for the new form of library systems.

Co-operative systems of public libraries began long before publication of the 1973 plan. Pioneer librarians in the thirties created a British Columbia version of the regional library in three widely separated and predominantly rural areas of the pro-

vince, and these have survived and flourished, becoming more and more urban as the population expands. The Commission, having been largely responsible for the start of systems, continued the enterprise over the next two decades by establishing branch offices in three other centres, to serve designated areas with books and professional services through existing small libraries. The regional groups are truly integrated systems; those supported by the Commission are modified federations. One of the chief objectives of the *Programme* is to reorganize all six on regional district lines.

The public library system for British Columbia is designed to provide better library service to the individual citizen through the sharing of materials and services which cannot be provided by an individual community because of cost. Membership in a library system also provides an opportunity for co-operation on local, provincial, national and international levels with other types of libraries — public, school, special and academic — making it possible for anyone within the system to have access to whatever material he may require.

Opportunities for such co-operation are still very limited, beyond the regional level, but the three regional libraries have been working toward complete reciprocal borrowing privileges for the residents of all three library districts. They have also shared data and methods in setting up computer-based regional book catalogues. The three directors meet to work out new policies and techniques for the mutual benefit of their institutions and to make joint recommendations to the Commission on province-wide policies and practices.

In the southwest corner of the provincial mainland, which, together with southern Vancouver Island, contains more than half of the total population of the province, there has been some co-operative endeavour among the public library agencies. Again, this has been limited to such activities as reciprocal borrowing and reference services and has not yet reached the level of region-wide participation. This lower mainland area has been designated as the only one of the eleven proposed system areas to be suitable for a federated rather than an integrated system. In fact, it would be undesirable to recommend integration where the libraries are strongly established and relatively well-supported municipal institutions. Having recognized this, the boards of seven public libraries and the Commission are working out together a plan whereby, with considerable financial backing from the province, certain services best provided in concert will be developed by the federation while local

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services continue to be the responsibility of the individual library

There is one absolutely new integrated system in the interior of the province. It is the first system established completely under the terms of the 1973 *Programme*. With a population of nearly 73,000 people in an area of 17,600 square miles, it has taken over the libraries of three municipalities and is providing service throughout 16,000 square miles of rural and semi-urban land where none existed before. Although it came into being only in January 1974, already its progress seems to have changed the attitude of at least three other of the eleven designated areas, and all three are taking the first steps toward system establishment.

Provincial Service

At the provincial level, the Commission's *Programme* calls for a central agency to carry the back up services required by the province-wide network. Such a provincial resource centre will provide: a bibliographic centre to process requests from public library systems for information and material beyond their individual capabilities; advanced reference and interlibrary loan service for integrated systems; access to libraries of the province's universities, community colleges and other institutions, including agencies and departments of the federal government as well as those serving business and industry; and a union catalogue combining its own collection and the holdings of all public library systems in the province.

Except for some centralized cataloguing within the province al government itself, none of the functions of a provincial resource centre has been started. A proposal for the administrative structure is now in its second draft, but further careful planning is essential This kind of project must have immediate and continuing success.

Special Libraries

Except for one group service in the medical field, co-operative practices and centralization are new concepts among special libraries in this province. The library of the Academy of Medicine, which is operated by the College of Physicians and Surgeons of British Columbia undertakes purchasing and cataloguing of materials for approximately 60 hospital libraries This means, in effect, that the Academy has created and maintains a union catalogue for libraries in the health sciences In addition to this, the hospital libraries receive annual grants from the College through the Academy's library

Attempts to establish a union list of serials in

special libraries, as well as common directory, have so far been unsuccessful, but this is still in sight as a long-term objective.

Although not really a system or network under the present definition, co-operation between the province's School of Librarianship at the University of British Columbia and libraries of the province, singly or in groups, does contribute to mutual benefit within the larger community. For example, in the summer of 1974, under a program financed by the provincial Department of Labour, students of the current first year class in the MLS course will be working for four months in public, college and university libraries. They will be employed on projects, important to the library but beyond the capability of its current budget, that will supplement in learning and experience the library school's curriculum. The program is set up for this year only, but it could develop into an annual practice, depending upon co-operation among the libraries, the school and the government. Again, the library school is in the provincial picture through participation by members of its faculty in library service workshops and on committees concerned with matters of province-wide application. The total contribution results in development of superior library resources and services, not to mention an additional benefit to mutual understanding among librarians and their respective institutions

Finally, an important link in the chain of resources and services is the provincial library organization. The British Columbia Library Association has endorsed and promoted activities ranging from workshops on particular facets of library service to formal participation with the Library Development Commission and other interested groups in drawing up plans for systems and networks and helping to obtain for them the necessary government approval and support, both local and provincial. Public Library trustees, working within the framework of the Association, have been particularly active in this sphere.

In summary, it is fair to say that library resources and services are being linked together in British Columbia in various ways: within parts of the public library field and at the provincial level. There are two jobs ahead: first, to expand the techniques and procedures for the benefit of the whole community of users, and this will require energy and money and second, to develop the library resources and services of the province so that they can form part of interprovincial and national systems and and networks

It is a pleasure to acknowledge the contribution

of background material for this paper from Mrs Florence Wiltson, Director of the District Resource Centre, School District No. 57, Prince George, Mr D. W. Halliwell, University Librarian, University of Victoria, Mr Ross Carter, Librarian, Vancouver City College, Mr C. W. Fraser, Librarian of the College of Physicians and Surgeons of British Columbia and Miss Theodora Rhodes, Librarian, British Columbia Telephone Company.

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CANADIAN LIBRARY
NETWORKS AND
SYSTEMS : A SUMMARY

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There's very little left to be said about networks in
Canada. Our speakers today have covered the sub-
ject thoroughly, and if you've been listening you
should know almost everything there is to know
about the state of the situation today. However,
I have been called upon to summarize the day's
work, and in beginning to do this I want to refer to
a speech delivered at an earlier conference by a
distinguished Canadian librarian.

In that speech, he suggested that there were two
phases in the development of libraries. In the first
phase, the energies of librarians were concentrated
on organizing and co-ordinating materials *within*
libraries; to borrow his phraseology, the individual
book was the first term in the series, and the organ-
ized individual library the final term in the series. In
the second phase, which he said librarianship was
then entering, librarians would, and I quote, "have
the task of evoking method and order *among*
rather than *within* libraries." In this phase, the
individual library was to be the first term in a new
series, and the final term would be, again quoting,
"a single comprehensive organization in which each
member shall have its own definite part to play, yet
will also stand in distinct and mutually helpful rela-
tions to all the other members, acknowledging,
each one, that it owes a duty to the whole body,
although preserving complete freedom as to its own
individual management and interests ... In such an
organization the libraries of the country would stand
not as independent units, but as inter-dependent
partners." In a word, this earlier speaker was talking

about a national network.

He went on to describe in some detail the net-
work he foresaw, and the benefit it would bring.
He spoke of the fact that the majority of library
users were denied interlibrary borrowing privileges.
That smaller libraries in smaller communities could
not gain access to the contents of larger libraries in
larger communities. That there was wasteful dupli-
cation among libraries. And a score of other things,
all of which have been touched on again today. He
believed that there should be developed in every
region what he called a "book reservoir." "These
reservoirs," he said, "existing for the express purpose
of serving other libraries, might have great latitude
in the matter of lending, while at the same time they
might combine the function of a storage warehouse
and clearing-house with other services as yet hardly
spoken of."

After a few more paragraphs, he got around to
speaking about these other services. He said: "Though
each reservoir library would necessarily aim at a
large and comprehensive collection, each would
specialize to the exclusion of all others, in certain
directions ... They would constitute the natural
storage libraries of their district, receiving and making
accessible the overflow, whatever its nature, of their
affiliated libraries ... As a matter of course,
regional libraries would also become *the* reference
libraries of their district, and not alone for the bene-
fit of persons on the spot. For they would be equip-
ped with correspondence ... departments, and
bibliographic bureaux from which would issue, at
reasonable ... rates, ... copies of articles, answers
to requests for specific information, or even for more
extended bits of research."

The author of that speech was the librarian of
McGill University, Charles Gould; he delivered it in
1909, almost 65 years ago to the day, as the address
of the incoming president of the American Library
Association. Dorothy Cooke where are you? We
have been hovering on the threshold longer than you
thought. So where are we in 1974? Is there any-
thing new under the sun? Well, we have not achieved
the degree of organization Gould had hoped for.
What we have is a basket of patches, waiting to be
worked into a quilt. As we have heard from Drs
Sylvestre and Brown, through our national libraries
we benefit from many bibliographic, information
and loan services. And everywhere in the country,
as other speakers have told us, groups of libraries
through separate sometimes lonely initiatives are
arranging for reciprocal borrowing privileges and
extended interlibrary loans, setting up special com-
munications and delivery systems, developing union

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catalogues and lists, rationalizing collections, engaging in cataloguing support programs, contract plating if not building storage libraries.

All of this is good, but does it really add up to a Canadian network? Can it be made to?

Having posed a couple of rhetorical questions, let me now attempt replies.

To the first question I think the answer is no, we do not yet have a Canadian network. To the second, I believe we can have one, and that we have a much better chance of having one precisely for the reasons Gould mentioned over half a century ago. Blessedly, Canada is small in population and thus in the dimensions of librarianship; we know each other pretty well, and communication is possible. Moreover, the country falls into a number of natural, manageable regions, within and among which co-ordination is possible.

It seems to me that there are five major prerequisites for a Canadian network.

The first of these is a clear understanding of and agreement upon the objectives of such a network. What is it for? I share the view of Dorothy Cooke and Jack Brown that it is for the user, who sometimes tends to be forgotten as we become preoccupied with the machinery we are creating. The purpose of any network should be to exploit a larger resource on behalf of a larger community, to provide access to information, works of the imagination, to citizens wherever or whoever they are. In a Canadian context, a network should lead to the equalization of opportunity for access. Networks can do other things. It is claimed that they can be more cost-efficient for some operations, and this is fine, because that should also be of indirect benefit to the user, whom I submit should be our first concern. It could be an assignment for a group of persons with a penchant for abstract thought to draw up a statement of objectives for a Canadian network. It needn't be long. It should be something everyone can understand and agree to, and which could be endorsed by librarians through their various national and provincial and special associations.

A second prerequisite for a Canadian network would be a plan. We need very badly some one or some group to study the present hodge-podge of activities, to attempt to relate them one to the other, to find ways in which developments can be co-ordinated. I don't really see this as committee work, or association work. It needs concentration. I think the task belongs appropriately to the National Library of Canada. The Task Groups set up by the National Librarian have contributed and are contributing to the evolution of this plan.

A third major prerequisite, especially at the level of the exchanging of bibliographical information, is agreement on standards as several speakers have pointed out today. This too is a logical responsibility of the National Library, which must also maintain liaison with other national libraries. But where standards are concerned there has to be give and take, and we haven't been notably successful in this up to now, given our tradition of perverse individualism.

A fourth major prerequisite is money. There is no point in fooling ourselves into thinking that networks can be built on a spirit of co-operation and nothing more. They do more, and they are going to cost more. And here we run head-long into a serious difficulty, whether we are considering national, regional, provincial, local or inter-institutional networks. Which bodies have or will accept jurisdiction for a network, for its financing, support and guidance? Who's even interested? I think we will have a lot of selling to do before we move library service into the next dimension. And we must also face squarely the issue of charges to users for services as a means of full or partial cost recovery. Will network benefits be extended to users according to the predetermined principle of librarianship that there should be no direct cost to the user? Can we raise the necessary funds for this, or must we depart from this important article of the library faith?

A final prerequisite is appropriate legislation as Dr Harry Hookway has pointed out. Networks span jurisdictions: Public, school, university and special libraries are sustained by different levels of government and different departments. There is little consistency from province to province. We may need to revise laws before we can set up, let alone fund, more ambitious networks.

Those are five major prerequisites for a Canadian network. There are others, but I want to approach them from a different angle, in replying to another rhetorical question: what are the obstacles to the creation of a Canadian network?

Obviously, if there is no agreement on objectives, on a plan, or on standards, we are going no place.

Suppose these prerequisites are met, that we define the goals, draw up a plan, agree to standards, find the money, and new legislation. Are there any other obstacles to the creation of a Canadian network?

For an answer to this question I am going to delve into history once more, but instead of going back to the beginning of this century I would have you return to the sixth century and refer you to the thirty-first chapter of a devotional commentary on the Book of Job, written by Gregory the Great. It is

there that Gregory drew up the classic list of the seven deadly sins.

The commission by librarians of many of these sins will certainly be deadly to a Canadian network. This morning Dr Brown touched on the importance of the human element in the successful operation of the network.

Take the sin of avarice or covetousness for example. If we adopt a possessive attitude toward the resources of our individual libraries, particularly those of us with the larger collections, networks won't operate. It takes a shift in attitude to view one's own collection as a part of a larger public resource or to make one's data bases and programs freely available as the University of Saskatchewan has done.

Then there's the sin of pride. I've seen that get in the way of co-operation more than once, in the shape of the person who is determined to go it alone, and sees affiliation with others as a threat or as a confession of weakness. So cast off pride.

We come now to envy. Common enough as between the haves and the have-nots, and certain to distort relationships in a way which will frustrate progress.

I think Charles Gould would wonder if we had not all been guilty of committing this next sin. After all, how can it be explained that after 65 years we are still stumbling toward this vision. The sin is that of sloth, described by old Gregory as melancholy sloth. He meant by it not just laziness, but a kind of anomie, lack of initiative, a sighing, despairing, what's-the-use-of-trying reaction. We can't afford to indulge in this sin; fashioning the net and then making it work will not be easy, and we'd better be willing to face the impediments with optimism.

Fitting the sin of anger into this little sermon of mine posed me some difficulty, until I read what Gregory had to say about the person who was attempting to justify to himself his committing of the sin. Gregory was a fair psychologist, and understood the process of rationalization. He puts these words into the mouth of the angry person: "The things that are being done to me cannot be borne patiently. Indeed, to bear them patiently would be wrong; because if I do not indignantly withstand them, they will later be heaped upon me without measure."

Could anyone be angry in that way about networks? Yes, publishers can and authors can. What calls itself the information industry certainly can.

Perhaps some of you caught in the New York Times or elsewhere the reaction of publishers to the announcement of a new consortium including the New York Public Library and the libraries of Harvard, Yale and Columbia? Or are aware that a new revision to section 108 of the U.S. copyright bill, a revision much favoured by the information industry, will inhibit libraries from taking out a single subscription to a journal with the intent of providing photocopies of articles to their own branches? Anyone who makes a living by selling information sees a library network as an economic threat to his livelihood. To answer such concerns takes a lot of diplomacy and a lot of research. Personally, I think these fears are exaggerated, but at the same time there are some publishers, particularly academic ones, who rely so heavily on sales to academic libraries that any sharing of materials resulting in a drop in volume of purchasing could result in decisions not to publish important manuscripts. So there are people out there committing the sin of anger and who may attempt to inhibit the development of networks. We should do what we can to save their souls.

The point I have been trying to make in reviewing these sins is that participating in networks does require a new approach to thinking about our jobs. When one goes to work in the morning, the reality of one's own library impresses itself on the consciousness; it is something that can be seen, and what is happening in it can be seen most of the time. Networks can't be seen in the same way. They have to be conceptualized. Somehow, people have to think networks, believe in them, and work for them as they would for their more concrete individual libraries. As Gould put it, those individual libraries are now just the first term in a new series. Let us all hope that it will not take another 65 years to reach that final term of what might be called total library service.

There my sermon would end were I not aware that some of you are keeping count and have noted that I covered only five of the seven deadly sins. The omission was intentional. There are, after all, more receptions, banquets and hospitality suites ahead of you and under the circumstances I will not offer you a discussion of those remaining sins of gluttony and lust. Absolution is what you need and I can't help you. All I can do is hasten the process by declaring this theme day adjourned.