



National Research
Council Canada

Conseil national
de recherches Canada

CISTI *ICIST*

CANADA INSTITUTE FOR SCIENTIFIC
AND TECHNICAL INFORMATION

INSTITUT CANADIEN DE L'INFORMATION
SCIENTIFIQUE ET TECHNIQUE

INDUSTRY CANADA
LIBRARY SERVICES
VIRTUAL LIBRARY STRATEGY
FINAL REPORT

LKC
Z
736
.I5
I52
1995
c.2

IC

Canada

NRC-CNRC

Z
675
.57
I 42
1995
S-Gen

INDUSTRY CANADA
LIBRARY SERVICES
VIRTUAL LIBRARY STRATEGY
FINAL REPORT

APRIL 1995

Industry Canada
Library - Queen
JUN 12 2013
Industrie Canada
Bibliothèque - Queen

Prepared by
CISTI Information Consulting Team

TABLE OF CONTENTS

EXECUTIVE SUMMARY

1. INTRODUCTION
2. CURRENT SITUATION
 - 2.1 Industry Canada Information Organization
 - 2.2 Library Organization
 - 2.3 Library Clients
 - 2.4 Library Functions
 - 2.4.1 Collections Management
 - 2.4.2 Library Service
 - 2.4.3 Technology Support
 - 2.5 Virtual Library Vision
3. VIRTUAL LIBRARY STRATEGY
 - 3.1 Confirmation
 - 3.2 Reorganization
 - 3.3 Implementation
 - 3.3.1 Electronic Products and Services
 - 3.3.2 Training
 - 3.3.3 Value-Added Products
 - 3.4 Communication
4. CONCLUSION

APPENDICES

- A. Virtual Library Vision
- B. List of Interviewees
- C. Interview Questions
- D. List of Libraries and Resource Centres
- E. Action Plan
- F. Documents Consulted

EXECUTIVE SUMMARY

Industry Canada Library Services is facing significant changes in resources, technology, clients and corporate culture as a result of major organizational changes within Industry Canada. This has provided the Library with an opportunity to plan its transformation from a traditional library to a virtual library, to change from within before change is imposed.

The present study was commissioned to verify the findings of previous studies and reports, identify client information requirements and obtain feedback from clients on the proposed virtual library model. This report includes an overview of the current situation and a strategy to guide the Library towards its vision of the virtual library.

The Virtual Library Strategy has three phases.

Phase 1: Confirmation

During the confirmation phase, the Library will establish and confirm its mandate within Industry Canada. Industry Canada is undergoing a major reorganization and downsizing. The effective management of information resources requires collaboration among the various information stakeholders within the Department. By sharing information and coordinating departmental information resources, Industry Canada will maximize the return on its information investment.

The Library has a vital role to play in rationalizing departmental information resource expenditures, coordinating access and retrieval to these information resources and delivering the information to clients' desktops. To achieve these goals, the Library must interact and forge alliances with the information stakeholders within Industry Canada. The resources, both human and financial, required for the Library's strategy must be identified. Most importantly, the Library must actively seek support for this strategy from Industry Canada management.

Phase 2: Reorganization

During the reorganization phase, the Library will identify its clients and establish the organizational model best suited for service delivery. The Library should continue to serve all Industry Canada employees as its primary clients and define service level standards for other clients. The Industry Canada Library Network model proposed in this report is flexible, client-driven and responsive to organizational changes. It builds on an established resource centre infrastructure and maximizes the departmental investment in information resources. The model

equalizes access to those resources, facilitates information sharing, optimizes the technology investment required and minimizes the training investment for both Library staff and Industry Canada employees.

Phase 3: Implementation

During the implementation phase, the Library will begin its transformation into a virtual library. The virtual library model, which allows access to the Library's products and services at employees' desktops, was well received by the clients interviewed. A detailed action plan which addresses the key activities involved in the implementation phase of the Virtual Library Strategy is appended.

To conclude, the development of the Virtual Library Strategy has been guided by the need to conform with the underlying themes and principles of Industry Canada's Strategic Information Framework, the Information Products Strategy and the Information Technology Framework. To realize this vision, the Library must demonstrate its role as mission critical to Industry Canada. It must promote and maintain an information delivery model that is flexible, resource efficient and sustainable within an environment of continually declining resources. The Library must coordinate activities and promote collaboration among Industry Canada information stakeholders and communicate its mandate and strategy clearly and effectively.

The author of this report believes that these goals can be met by the adoption of the proposed Virtual Library Strategy.

1. INTRODUCTION

In June 1993, the departments of Industry, Science and Technology, Consumer and Corporate Affairs, Communications Canada and Investment Canada merged to form Industry Canada. The new department inherited 6 libraries and a number of resource centres. In April 1994, Industry Canada tabled the *Report of the Working Group on the Reorganization of Industry Canada Libraries and their Automation* which recommended several activities to maximize the resources of Industry Canada Library Services. The Information Management Committee approved the development of a centralized catalogue of Industry Canada library collections and the procurement of an integrated library technology system to be implemented in the Fall of 1995.

Background

Industry Canada has undergone major organizational changes over the past year and will be reducing resources significantly over the next three years. The Department has also changed its mandate and is now focusing on the provision of information products to small and medium enterprises.

Industry Canada Library Services is also facing significant changes in resources, technology, clients and corporate culture. The Library would like to move from a model based on collection building and "just in case" thinking to a new model in which information is located and delivered "on demand" and "just in time".

Wide Area Networks (WAN) and the Internet world are changing the way information is disseminated. A plethora of information is now available at users' desktops. However, until more sophisticated information retrieval tools and aids are developed to navigate this sea of information, the Internet remains a time-consuming, often difficult, source of information to exploit.

Objective

The present study was commissioned in February 1995 to verify the findings of previous studies and reports, identify current and future client information requirements and to obtain client feedback on the proposed virtual library model. The result of this study is a Virtual Library Strategy for adoption by Industry Canada Library Services.

Methodology

The primary source of information for this report was a series of structured interviews with seventeen Library clients from the various sectors of Industry Canada including four regional offices. The interview questions focused on identifying client information needs and obtaining client feedback on the Virtual Library Vision (see Appendix A). The virtual library definition used for the interviews is a generally accepted description in the literature on the subject.

The virtual library is the electronic presence of traditional library services from or on your desktop, so that you have access to databanks of electronic information, you have the ability to request and receive information from your desktop whether that information is available electronically or not and you have access to information experts when you need it.

The Team also reviewed the findings of *Working Group on the Reorganization of Industry Canada Libraries and Their Automation* and other relevant documentation on the mandate and business plans of Industry Canada.

The list of interviewees and the interview questions can be found in Appendices B and C.

2. CURRENT SITUATION

2.1 Industry Canada Information Organization

Industry Canada has developed a new mandate directed at helping Canadian businesses to compete in the global marketplace. The Departmental Information Products Strategy focuses on the provision of world-class information to external business clients.

In support of this new direction, the Strategic Information Branch of Industry Canada developed the *CIO Business Plan 1995-1998*. The major activities of the Branch include information management, publishing and product development, as well as product delivery and distribution.

Industry Canada Library Services is now part of the Strategic Information Branch, and reports to the Director, Information Management.

2.2 Library Organization

Industry Canada Library Services presently includes collections housed in three locations, commonly referred to as the Queen Street, Journal Tower and Portage sites. Industry Canada also has several resource centres which serve specific branch or sector clients (see Appendix D). There are also three libraries associated with separate operating agencies or programs under the Industry Canada umbrella, as well as many unofficial working collections throughout the Department. At present, there are no links between Industry Canada Library Services and the resource centres and agency-specific libraries, with the exception of the CIPO Library.

2.3 Library Clients

A recurring issue in the interview findings was the absence of a policy defining the clientele of the Library. The Library currently considers Industry Canada employees its primary clients. It also provides services to public and private sector individuals and groups including consultants working on contract for Industry Canada, academics, law firms and associations as well as other government departments.

2.4 *Library Functions*

In addition to managing the collections at the Queen Street, Journal Tower and Portage sites, Industry Canada Library Services provides a comprehensive range of library services at these sites. Services include the selection, organization and retrieval of information, reference and current awareness services, document delivery, interlibrary loan and client support for information sources such as CD-ROMs.

2.4.1 Collection Management

The primary collection management functions are the acquisition of materials and their organization and indexing. The Library has centralized and coordinated these functions at one site and is currently building an integrated catalogue for the Queen Street, Journal Tower, Portage and CIPO collections. Centralizing these functions reduces duplication and facilitates information sharing through common access and retrieval tools.

The *Working Group Report* states that Industry Canada spends \$3.6M dollars a year on print and electronic information, while only \$800K dollars of this amount is spent by Industry Canada Library Services (Figure 1). Non-library materials are accessible only to those who have purchased them, leading to duplication of resources and inequitable access to information. Because \$2.8M worth of information is not readily accessible to all staff, the Department is not receiving the best return for its investment.

Information Management - Current Situation

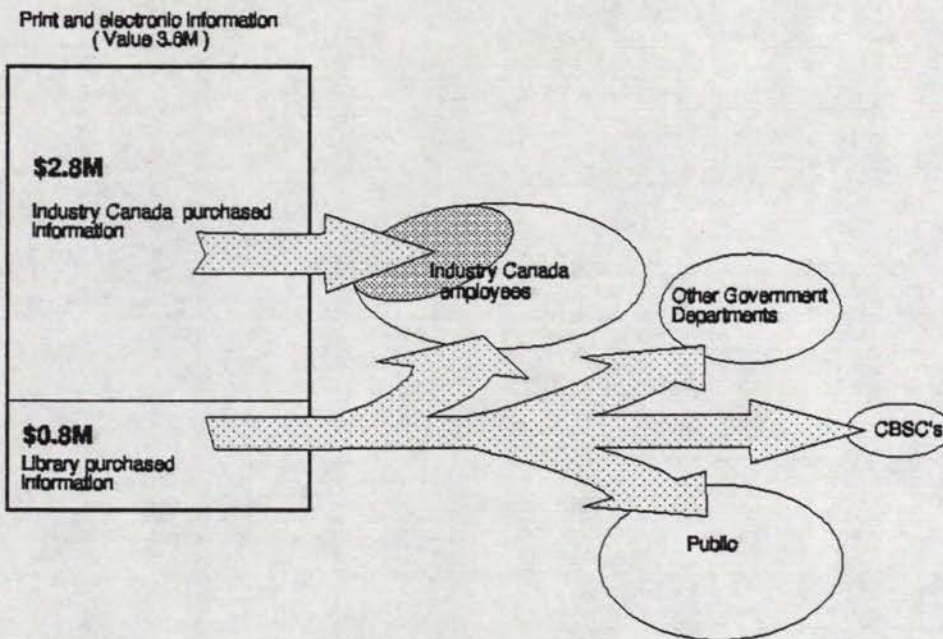


Figure 1

Based on the interview findings, access to Industry Canada's corporate memory appears to be limited to those who sponsor work or attend events on behalf of the Department. During the interviews, several sources of information at Industry Canada were identified as missing. These included internal reports, documents and studies (including electronic publications and newsletters) and branch or sector databases. These sources are often produced or developed at significant cost to Industry Canada and were considered to be underexploited. Concern was voiced that the Department was not maximizing its return on the investment in this internal information.

2.4.2 Library Services

The interview findings indicated that library services were generally well understood and appreciated by the Library's clients. The interviews confirmed that there is little change in the areas of interest to Industry Canada employees. However, clients wanted librarians to have more subject knowledge and an increased awareness of their information needs. Librarians were expected to be more proactive in branch and sector information product development. As a result of pending resource reductions, interviewees suggested that they would look to the Library for reference expertise and services.

Clients were consistent in their requirement for access to electronic information resources. Interviewees expected that they would soon be able to search for, request and receive information electronically from their desktops. They also expected to have access to and retrieve information from a variety of information sources. Many clients conduct their own database searching. A recurring issue was the need for a list and description of the databases available on the Corporate Information System. While such a list currently exists, some interviewees were not aware of its availability.

Clients expressed a need for training to search the various online databases and CD-ROMs and to navigate on the Internet. All of the interviewees with Internet experience wanted search aids and tools to reduce the time required to locate information on the Internet.

Library staff currently provide support for many of the CD-ROM products on the Corporate Information System. Although the Library performs this function on an ad hoc basis, it is not generally recognized by clients as the group with this valuable "know how". Some clients indicated a requirement for training on the information resources available. The Library has not developed any formal training materials or services.

In the area of current awareness services, clients identified a need for tailored

profiles geared to particular sectors. They expressed a low tolerance for large listings or high numbers of irrelevant references. Clients appreciated the list of recent Library acquisitions which has been suspended.

Clients indicated that they read circulating journals to keep abreast of developments in their field. However, delays in the routing of journals have created a high degree of frustration. Electronic table of contents would answer the needs of some clients. Other clients indicated a need to see parts of journals, such as advertisements, not currently indexed by these services. Clients also assumed that an electronic table of contents service would allow them to order and possibly receive the articles electronically. While some interviewees indicated that this service alone would not be adequate, all supported such a service provided that the journal issues remained available in the Library to ensure timely and equitable access. Given a choice, interviewees would prefer to have the full text of articles rather than tables of contents, abstracts or summaries.

2.4.3 Technology Support

Industry Canada Library Services uses a variety of technologies, hardware and software. The current library catalogue available on the Corporate Information System does not provide access to the Library's complete collection. To address this issue, the Library is developing an integrated catalogue with the holding of all three sites. This online catalogue will be accessible through a common user interface and will be available on the Corporate Information System.

However, not all employees have access to the Corporate Information System. As well, those with access commented on the slow response of the system. The Library should therefore consider offering a variety of ways to access its online catalogue.

The Library provides many of the CD-ROM databases available on the Corporate Information System as well as ad-hoc CD-ROM support. The Library is currently in the process of creating a committee that will coordinate the selection and evaluation of the electronic information sources acquired by Industry Canada Branches and Sectors.

2.5 *Virtual Library Vision*

Industry Canada Library Services has developed a vision of the library of the future that it has called the Virtual Library Vision. This vision builds on the Library's strengths: its expertise in information management, its knowledge of client needs and its proven ability to find and disseminate information.

The Virtual Library Vision, illustrated in Appendix A, was presented and discussed during the client interviews. Feedback revealed a number of barriers and benefits to the implementation of the Vision. Some key barriers and benefits are listed below.

Benefits to Clients and the Library

- the Virtual Library Vision builds on the confidence clients have in current Library services;
- it meets clients' needs for training in search and retrieval tools to access information, particularly on the Corporate Information System;
- it increases awareness of the Library's knowledge and expertise in organizing, accessing and retrieving information;
- coordinating access to information collections and resources within Industry Canada will facilitate sharing of information;
- clients will receive guidance and standardized models to organize information for access and retrieval;
- clients will benefit from information retrieval tools such as pointers and filters to information sources on the Internet;
- clients will have access to information sources in electronic format at their desktops.

Potential Barriers

- there is a lack of coordination of information management activities;
- Library staff may not currently have the knowledge and skill sets to realize all the elements of this vision;
- upgrading the skills of library staff will require additional resources;
- the lack of standards in technology and search and retrieval tools may hinder the delivery of services to the desktop;
- additional financial resources may be required for new technology.

3. VIRTUAL LIBRARY STRATEGY

The Virtual Library Strategy presented is based on the findings of the current situation at Industry Canada. It takes into account the information needs and expectations of the Library's clients, the Industry Canada information and technology architectures and the organizational barriers within Industry Canada. The Virtual Library Vision, illustrated in Appendix A, is the starting point for this strategy which will guide the evolution of Industry Canada Library Services into a Virtual Library Network.

The strategy has been divided into three phases.

Phase 1: Confirmation

The Library will establish and confirm its mandate with Industry Canada management, forge alliances among the various players in the Industry Canada information environment, negotiate the resources, both human and financial, required to realize the strategy and actively seek support for the strategy from Industry Canada management.

Phase 2: Reorganization

The Library will establish the organizational model best suited to deliver service and reorganize the Library. This phase will require a significant effort in managing change.

Phase 3: Implementation

The Library will identify activities, set priorities and develop costed plans. A detailed implementation plan will be required to realize the virtual library vision. An action plan has been developed for the three key elements of this phase. The plan, presented in Appendix E, will guide the development of the implementation plan.

The Virtual Library Strategy is illustrated in Figure 2.

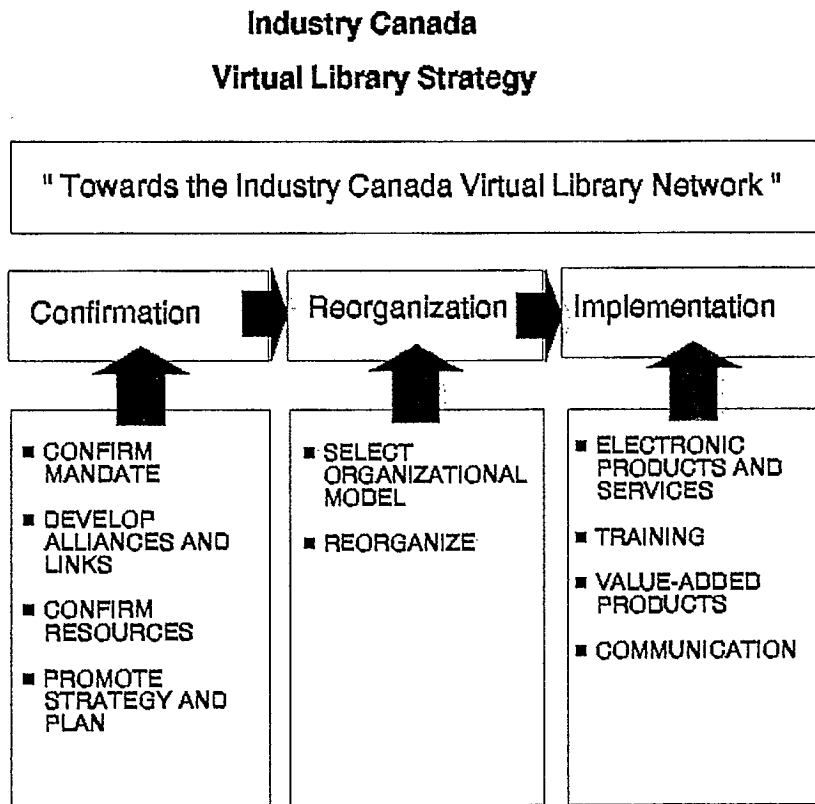


Figure 2

3.1 Confirmation

Confirm Mandate

As the first step in implementing the Virtual Library Strategy, the Library needs to confirm its mandate. The Library must identify the clientele it serves and the primary activities required to plan, prioritize and focus on meeting the clients' needs and expectations. The Library must also enhance its mandate to include the coordination of information resources within Industry Canada.

The client model in Figure 3 illustrates that the Library's primary clients are Industry Canada employees. Included in the primary client group are also consultants working on contract for Industry Canada. Secondary clients are the Canadian Business Service Centres and public and private sector individuals and groups such as consultants, academics, law firms and associations. In applying this client model, it may be necessary for the Library to develop a service policy to manage expectations based on resource levels. For example, service agreements or fees may be charged to the secondary client group.

Industry Canada Library Network - Client Model

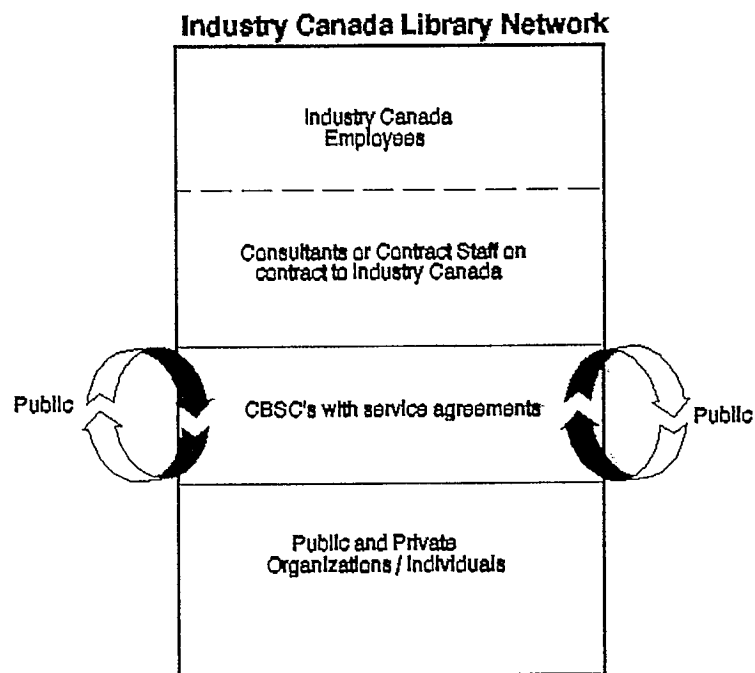


Figure 3

Industry Canada has made a considerable investment in its information resources. However, many of these resources are not accessible to all employees. To improve the return on its investment, Industry Canada must rationalize the selection and acquisition of information resources and coordinate the organization of this material for access and retrieval purposes. The Library has the expertise and infrastructure to carry out these functions, but it does not have the mandate. By obtaining this mandate from senior management, the Library will reduce the cost and duplication of information resources while increasing and equalizing access to information.

Confirm Financial and Human Resources

The transformation to the virtual library will require investments in training and new technologies as well as a continued investment in information resources in a variety of formats. To develop realistic goals and manage expectations, the Library must confirm its resource base for the duration of this strategy.

Build Alliances

The third theme in this phase of the strategy is a negotiation activity. The Library must obtain support for the Industry Canada Library Services Network model proposed in this report. The virtual library model is based on the centralization of core information management activities with a series of "virtual" service delivery points. Given the competitive environment of Industry Canada, it is recommended that building alliances is the most effective approach to obtaining collaboration from the stakeholders in information management.

The Library should seek to participate in committees dealing with information management, policy and infrastructure development. It is imperative that the Library begin to contribute its information management expertise to these committees and become recognized for that expertise. Only by active and positive participation will the Library be able to influence Industry Canada's information environment.

Promotion

The Library needs to promote the Virtual Library Strategy to senior management and clients to raise the Library's visibility and credibility within Industry Canada. A communication plan to raise awareness of library expertise and products and manage client expectations will provide the momentum and commitment required to sustain the second and third phases of the Virtual Library Strategy.

3.2 Reorganization

The current organizational structure is represented in Figure 4. As illustrated, there is a lack of coordination of library-related activities within Industry Canada. With the exception of the Queen Street, Journal Tower, Portage and CIPO libraries, there are neither organizational nor functional relationships between the units which make up the Industry Canada information infrastructure. The results of operating within this model are inequitable access to and costly duplication of information resources.

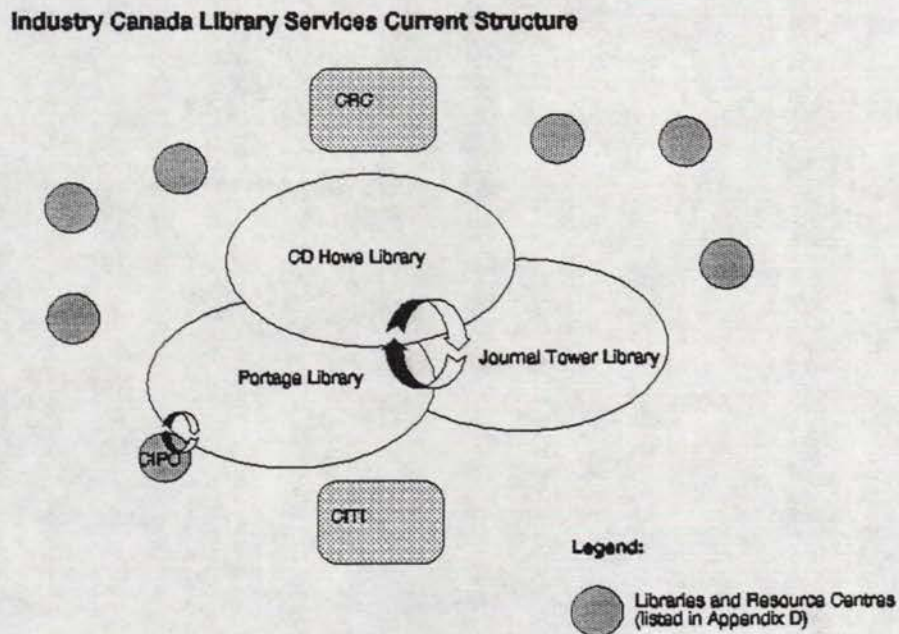
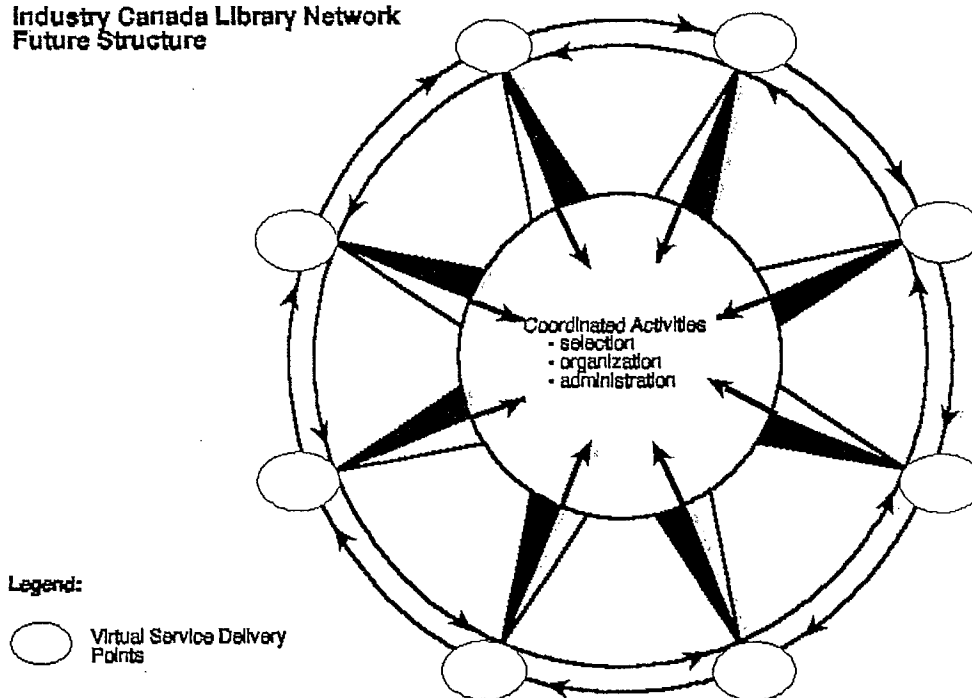


Figure 4

The organizational model recommended in this strategy is represented in Figure 5. The Industry Canada Library Network model is similar to the model used in many academic library settings. In this model, the selection and organization of information resources is coordinated on behalf of all of Industry Canada for maximum efficiency and effectiveness. Service delivery is realized through a series of networked service delivery points. These service delivery points are focused on specific client groups based on similar subject interests or, alternately, on geographic proximity. This model supports distributed service delivery and includes the concept of mobile reference librarians working with specific Industry Canada branches and sectors and using the entire Industry Canada Library Network as a resource.

**Industry Canada Library Network
Future Structure**



Key benefits of the Industry Canada Library Network model are:

- it is flexible and responsive to organizational changes;
- it is client-driven;
- it builds on an established resource centre infrastructure;
- it maximizes departmental investments in information resources;
- it equalizes access to departmental information resources;
- it standardizes access and retrieval of information;
- it facilitates the sharing of information;
- it optimizes the technology investment ;
- it minimizes the training investment for both Library staff and Industry Canada employees;
- it avoids unnecessary duplication of effort.

Library management will need to identify the skills required to operate within this model and review staff profiles to identify training requirements. This report recommends that key activities, especially those most visible to clients, be performed by library staff when possible. Where the skills are not currently available, the expertise could be bought while inhouse expertise is being developed. In order to maintain client service during this period, library management may need to identify low priority activities that could be suspended temporarily or stopped.

To ensure a consistently high level of service throughout the Library Network, the Library needs to formalize standards of service and performance levels. Once these standards are in place, library management could consider the regular rotation of staff within the Library Network. This would encourage the learning and development of new skills and improve the flexibility and versatility of Library staff. Overall, this would foster a more flexible workforce better able to cope with future changes and demands.

3.3 Implementation

The virtual library model, which allows access to the Library's products and services at employees' desktops, was generally well accepted by and attractive to Industry Canada employees. In order to implement the Virtual Library Strategy, key activities must be undertaken and are discussed below. An action plan outlining these activities has been presented in Appendix E.

3.3.1 Electronic Products and Services

Integrated Catalogue

The Library should strive to provide a common access interface to all its systems and services. The first step in that direction is the development of an integrated online public access catalogue. Clients should be able to order documents directly from the catalogue. As more and more electronic publications become available, the client should be able to move easily from the cataloguing record to the full text of the document, whether it is located in the Library, somewhere else within Industry Canada or on the Internet. Using client/server architecture, it is now possible to bring together a variety of systems and services and make access transparent to the client.

The virtual library is a library without walls. As such, it should provide access not only to Industry Canada's resources, but also to other relevant resources in Canada and internationally. Clients interviewed mentioned the importance of being able to access other library catalogues. With new interfaces such as the Z39.50 standard, it is now possible to simultaneously search several library catalogues. The new Amicus system at the National Library of Canada will be Z39.50-compliant, and so will the Geac Advance system that will be used for Industry Canada's integrated library catalogue. Many library catalogues are now available on the Internet, either through Telnet, Gopher or World Wide Web and could be accessed through a common World Wide Web page providing simple login instructions.

Electronic Tables of Contents

The need to rationalize and share information resources within Industry Canada necessitates the replacement of journal routing by the delivery of electronic table of contents to clients' desktops. A table of contents service is required that would support distributed access throughout Industry Canada for individual client use, electronic mail delivery of tables of contents to large numbers of clients and electronic ordering of documents, first from the Library and then from other collections. A cost comparison of existing electronic table of contents services is required.

Electronic access

The Library should evaluate ways to provide electronic access to its products and services. Several options exist: through the Local Area Network, through the Corporate Information System, through the Internet (Telnet, Gopher, World Wide Web) or through modem (dial-up access). It would be best to offer several access options and not rely entirely on one access point, as clients have different needs, different telecommunications setups and different computer platforms. Some problems with the Corporate Information System were mentioned during the interviews: slow response, an unfriendly user interface and the fact that not all Industry Canada employees have access, especially in the regions. The Internet could provide a good alternative. Internet access would enable the Library to reach a wider audience and add to its image as a proactive service-oriented organization. Similarly, depending on the popularity of Lotus Notes and its adoption by Industry Canada branches and sectors, offering library services via this interface should be examined in the future.

All services provided electronically by the Industry Canada Library Network must be clearly identified as library products so that the Library's contribution is recognized by clients. For example, on the Corporate Information System, the "virtual storefront" could simply be a menu system bearing the Library Network header. On the Internet, the Library Network could maintain a World Wide Web home page, which would be linked to Industry Canada's super server. In the case of the World Wide Web access, two home pages may be required, one for internal Industry Canada clients and one for external clients as services offered to these two communities may differ.

The electronic library interfaces should offer a wide range of services directly from and to the client's desktop. These services should include access to the library catalogue, password or subscriber access to networked databases and CD-ROMs, an electronic table of contents service, an electronic document delivery service, electronic mail for most communications with the Library Network, external information resources, full text databases and electronic publications.

Internet Resources of interest and value to Industry Canada: a guide

During the interviews, some clients indicated that they considered the Internet a dubious source of information. The problems most frequently mentioned by clients were the vast amounts of time spent sifting through too much information to find the information relevant to their inquiry which then needed to be verified.

An opportunity exists for the Library to identify and evaluate Internet resources of interest or use to Industry Canada clients and use Internet technology to inform

clients of their existence and importance or application. Currently it is possible, through advanced catalogue interfaces such as GeoPac (Geac), to list Internet resources in library catalogues and allow seamless access to those resources via the catalogue. A more traditional approach would be to maintain an up-to-date searchable archive of Internet resources with descriptions of the data offered by each resource.

Similarly, the Library could respond proactively to client needs by investigating and creating a list of news groups and bulletin boards of interest to clients. A starting point for this would be to ask current clients what they have found useful and build from there.

Technology Opportunities - Beyond Year 2...

As bandwidth increases and personal computers become more powerful, technology is moving from text-based interfaces to graphic user interfaces and full multimedia interfaces. The library should monitor developments in technology looking for technologies that could improve services to clients or provide services more cost-effectively. The World Wide Web offers multimedia capabilities at a relatively low cost. There are also multimedia interfaces to most library systems, such as GeoPac for the Geac Advance library system, which can also be used as a Z39.50 interface to other Z39.50-compliant library catalogues.

3.3.2 Training

The Library should provide training and support for all of the information sources and retrieval and access tools it provides including the catalogue, CD-ROM and online databases, electronic table of contents services and document delivery services. It also has a role to play in teaching Internet resource discovery skills. Most clients interviewed indicated that they would not go to the library for basic Internet training. However, once they had learned to navigate on the Internet, their main frustration was the time it took to find relevant information. Any training that the Library could provide in this area would be particularly useful.

3.3.3 Value-Added Products

There are a number of new product opportunities that the Library should investigate. For each of these products or services, the library will have to determine whether the expertise resides within the Library or Industry Canada. The Library will also have to consider whether the resources can be mobilized within an appropriate time frame. If not, the expertise should be purchased or contracted in a cost effective manner.

Report Literature, Conference Papers, Consultants reports, Studies

The interview findings revealed two important information gaps, namely Industry Canada produced or sponsored publications, reports and studies and publications such as conference reports and proceedings, committee meeting documents, pre-publication reports and studies from agencies such as the OECD and the UN. Often referred to as grey literature, this information is part of the corporate memory which is not easily or readily accessible to Industry Canada employees. Industry Canada has an opportunity to maximize the return on investment by tasking the Library to index this material and make it accessible within Industry Canada.

An alternate approach for access to report literature is to develop a database of Industry Canada experts by subject expertise or project. This database may be a more valuable retrieval tool since the experts are in the best position to give the latest information on developments in their areas of expertise.

Current awareness (Industry profiles)

There may be an internal Industry Canada market for a new industry, market research and business current awareness service. Some users suggested that industry profiles based on the sectors already targeted by Industry Canada could be set up to scan the literature on particular companies, industry activity, new products, regulations and standards. These industry profiles could then be marketed to Industry Canada Branches and Sectors to promote library services and establish client relationships. Once developed, the industry profiles could be easily tailored to meet the requirements of individual clients or groups within the sectors. The results of the current awareness profile would be delivered in electronic format to the client's desktop.

3.4 Communication

A key element in the implementation of the Virtual Library Strategy is the development of a plan to address the major communication issues facing the Library.

Visibility

The interview findings indicated that the Library had very little visibility. Although the Library is responsible for most of the CD-ROM products available on the Corporate Information System, it was rarely recognized or credited with making these sources accessible. In order to develop a higher profile, the Library should increase its visibility on the Corporate Information System and on the Internet. How this visibility could be achieved has been addressed in the implementation phase of the strategy. It is also important for the Library to forge and maintain links with its client groups within Industry Canada. Activities such as establishing a library advisory group with representatives from all branches and sectors, maintaining an electronic suggestion box and hosting informal meetings with clients would allow the Library to respond to changing client needs.

Promotion

Another significant issue is the promotion of the Library's products, services and expertise. Several clients were not aware of the variety of services offered by the Library. Clients did not know that they could approach the Library with a subject request or that the Library would search outside of its collections for information to meet their needs. They were not aware of the expertise available from the Library's professional staff. The Library needs to develop promotional activities to make Industry Canada employees aware of the scope of services available to them. Promotional events could include library open houses, Internet resource exchanges, the launching of virtual service delivery points and a ribbon cutting ceremony to inaugurate the integrated library catalogue.

Perception

As well as maintaining its visibility with clients, the Library must change client perceptions of the Library. Several clients were under the impression that library services were not available electronically, that communication with the library could not be done by electronic mail and that materials could only be picked up in person. This has contributed to an overall impression of outdated services. The Library must communicate its commitment to the virtual library model in the face of the increasing expectations and sophistication of clients.

4. CONCLUSION

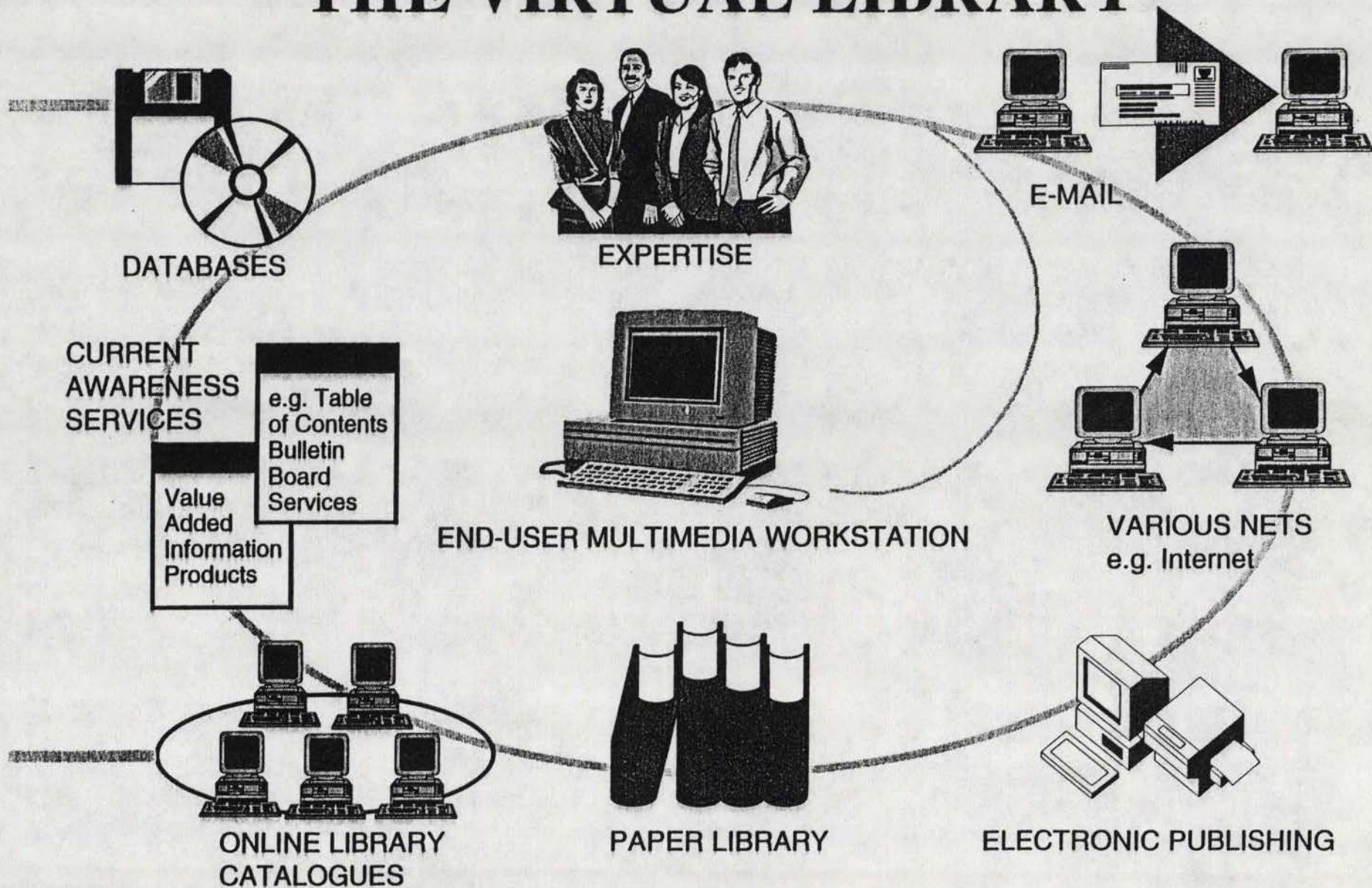
The Virtual Library Strategy presented in this report has looked at activities considered to be short term, those which can be accomplished in the medium term and those which require a long term investment in resources. The short term activities are those within the purview and resource base of the Library. The medium term activities require additional funding, skill sets not currently available or the collaboration and support from departmental groups outside the Library. The long term activities are those which depend on technology or telecommunication infrastructures currently in the planning or testing phases. By definition, the long term activities often require significant financial investments and partnerships.

The Virtual Library Strategy will provide direction for the Library's planning and priority setting activities. The Action Plan will guide the development of the Library's multi-year plan and workplans. A detailed implementation plan including cost estimates and schedules for the products and services targeted for development will be needed. The Strategy can be used to monitor and evaluate the progress being made towards the virtual library vision. The Action Plan will require updating periodically to maintain its currency and relevance.

APPENDICES

APPENDIX A: Virtual Library Vision

THE VIRTUAL LIBRARY



APPENDIX B: List of Interviewees

Place du Portage

Douglas Fraser
Commerce Officer
Bureau of Competition Policy

David Waite
Policy Analyst
Consumer Affairs Sector

Kernaghan Webb
Policy Analyst
Consumer Affairs Sector

Vic Duy
Special Projects Officer
CIPO

Queen Street

Alfred Lyon
Senior Policy Analyst
Federal Provincial Relations,
Planning and Evaluation

David Thorne
Analyst
Aerospace Sector

Hollis Whitehead
Senior Analyst
Science Policy

Tim Karlsson
Economist
Metals & Mining Directorate

Journal Tower

Adèle Conn
Office Coordinator
Spectrum, Information Technologies
and Telecommunications Sector
(SITT)

Barbara Brown
Engineer
Spectrum, Information Technologies
and Telecommunications Sector

Arthur Cordell
Officer
Spectrum, Information Technologies
and Telecommunications Sector

Thérèse Rivest
Analyste principale de politique
Secteur du spectre, des technologies
de l'information et des
télécommunications

Jean-Marie Boilard
Chef, Services techniques de
radiodiffusion AM
Secteur du spectre, des technologies
de l'information et des
télécommunications

Toronto

Christine Cosgrove
Statistical Officer
Planning, Analysis and Public Affairs
Branch

Vancouver

Albert Lau
Systems Application Engineer
Spectrum Planning and Engineering

Halifax

Joann Sampson
Information Officer
Canada / Nova Scotia Business
Service Centre

Saskatoon

Daryll Sewell
Regional Officer
Industry Canada

APPENDIX C: Interview Questions

This discussion will be helpful to us in understanding your role in the strategic information activities of Industry Canada and in particular the information requirements of your area.

Our starting point is the Report of the Working Group on the Reorganization of Industry Canada Libraries and their Automation, April 1994. Are you familiar with the recommendations of this report? Would you like to have a copy sent to you?

The merging of the various departments has provided a golden opportunity to re-examine all aspects of library services to optimize their contribution to Industry Canada's mandate of providing strategic information to Canadian industry.

1. What is your role in the provision of strategic information within Industry Canada?
2. How are you involved in the collection, analysis or dissemination of information within Industry Canada?
3. What kind of information do you produce, analyze or disseminate to Industry Canada and to its clients?
4. What information do you or your work group need to do your job well?
5. What sources do you use to get the information you need?
6. Where do you go to get your information? Where do you look first?
7. Is there a resource centre in your area? How does it link with the library?
8. What is your level of satisfaction with the information sources you use now?
9. How do you use the Industry Canada Library?
10. If the library cannot answer your question or does not have what you are looking for, are you referred to other sources?
11. What is your opinion on library services?
12. What do you see as the primary responsibilities of the Industry Canada Library?

13. What would be the ideal way of getting, analyzing or disseminating that information?
14. Thinking in terms of the Information Superhighway, the Internet, the training needed to use the new media, electronic information sources and so on, what role should the library system at Industry Canada play in the future ?

You have told us how your work contributes to the Industry Canada mandate of increasing the competitiveness of Canadian business. The library also has a vision of how it can best contribute to Industry Canada's mandate. This vision makes the most of the library's strengths: its expertise in information management, its knowledge of client needs, and its proven abilities to find and disseminate information. In moving towards this vision, the library is implementing an integrated system to access the current collection within Industry Canada.

The library sees three major directions for the future.

The library will continue to maintain core library services such as reference services and interlibrary loan. The virtual library concept will be used to enhance these services to internal as well as external clients.

Because of the rapid change in information technologies, the library envisions a role in educating Industry Canada staff in the value and sources of information and the means to access that information.

The library feels it can contribute to the development of Industry Canada's value added products by applying its knowledge of information management and how clients access and use that information.

With this vision in mind, we need to know ...

15. What is your reaction to this vision?
16. What impact would implementing this vision have on your area?
17. What do you see as the barriers to implementing this vision?

APPENDIX D: List of Libraries and Resource Centres

The following is a list of libraries and resource centres which are part of Industry Canada:

1. **Queen Street Library** (Former ISTC Library)
2. **Portage Library** (Former CCA Library)
3. **Journal Tower Library** (Former DOC Library)

with two related libraries which although part of Industry Canada are not part of the Library structure.

CRC Library

Centre for Information Technologies Innovation (CITI) Library or ISIR (Integrated Service of Information Resources)

Resource Centres in Industry Canada were created to fill specific needs which could not be handled by the existing libraries of the departments in which they were established. They are:

1. **Photothèque Library**
2. **Learning Centres**
3. **Tourism Reference and Documentation Centre**
4. **Bureau of Competition Policy Resource Centre**
5. **CIPO Library** (Resource Centre of the Canadian Intellectual Property Office)
6. **Aboriginal Economic Program's Resource Centre**

Aside from the above-mentioned Libraries and Resource Centres there are also many official and unofficial working collections.

APPENDIX E: Action Plan

Electronic Products and Services - List of Activities

1. Integrated Catalogue
 - 1.1 Plan for adding resource centre collections and office collections, etc.
 - 1.2 Add Industry Canada publications and reports
 - 1.3 Add special MARC fields to link to Internet resources (start with Industry Canada internal publications and internally produced reports)
 - 1.4 Arrange for TELNET access to the GEAC
 - 1.5 Develop and implement document ordering feature
 - 1.6 Make links in MARC records to external grey literature on the Internet
2. Electronic Tables of Contents
 - 2.1 Cost-benefit analysis: routing journals versus electronic Tables of Contents
 - 2.1.1 Consider SwetScan, Uncover, CCOD and paper Tables of Contents Service (CISTI)
3. Create Library Storefront on Corporate Information System
 - 3.1 Develop Library menu (catalogue, CD-ROMs, Table of Contents Service, eventually Service Delivery Point collections, etc.)
 - 3.2 Develop document delivery request form for menus
 - 3.3 Define contents of internal client menu (databases, catalogue, CD-ROMs, Frequently Asked Questions file, SDI sector profiles, Library user guide or staff contact list)
 - 3.4 Create external client menus for Canadian Business Service Centres
4. Create Library Storefront on the Internet
 - 4.1 Develop WWW Home page (Telnet window) - access to same databases as the Corporate Information System menu
 - 4.2 Mail to URLs - feedback forms (all forms, reference and document delivery)
 - 4.3 Create pointers to external resources
5. Electronic Ordering
 - 5.1 Orders received in library via e-mail
 - 5.2 Use Romulus to locate serials for interlibrary loan work
 - 5.3 Use AMICUS and ISAAC to locate monographs for interlibrary loan work

6. Offer Current Awareness (Infoalert, full-text Selective Dissemination of Information profiles)
7. Plan for GUI Access (Geopac option)
8. Introduce Access to other Library Catalogues (via Z39.50)
9. Develop a World Wide Web Interface
10. Develop Directories and Pathfinding Tools for Internet Resources
11. Introduce Electronic Interlibrary Loan
12. Electronic Document Delivery
 - 12.1 Ariel workstation
 - 12.2 Delivery to desktop
 - 12.3 Scaled down IntelliDoc
 - 12.4 Scanner in library
 - 12.5 Develop partnerships - provide service as intermediary
13. Electronic Journals

Issues to address: storage, access, copyright, delivery.
Few available now.
Options are direct access or via library.
Charging issue to be resolved.

Training - List of Activities

1. Decide product line (online public access catalogue, CD-ROM, databases, Interfaces, document delivery, electronic ordering, electronic Tables of Contents)
2. Obtain resources to develop training products and services
3. Develop training program
4. Develop course content
5. Determine training delivery mechanism (Computer Assisted Learning, Long Distance Learning, Video-Conferences, etc.)
6. Develop documentation
7. Develop training manuals

Value-Added Products - List of Activities

1. Librarian member of information product development teams
2. Develop sector current awareness profiles
3. Index Industry Canada grey literature
 - 3.1 Make grey literature accessible via catalogue
4. Develop guide to Internet resources
5. Facilitate development of expertise database

APPENDIX F: *Supporting Documentation*

1. Report of the Working Group on the Reorganization of Industry Canada Libraries and their automation: Part 1: Final Report, April 1994.
2. Report of the Working Group on the Reorganization of Industry Canada Libraries and their automation: Appendices, April 1994.
3. Proposal: Library Automation Project, August 1994.
4. "Influencing Canadian Economic Performance", 1994-95 Information Management Plan, August 1994.
5. CIO Business Plan, March 28, 1995.
6. "The Information Map", Portfolio of Strategic Information Products, [January 19, 1995?]
7. "Key Areas for Action", Federal Libraries Study Document 18, rev. June 18, 1995.
8. "Gateway to a World of Information: Federal Government Libraries in the 1990's", Liaison, Special Issue, January/February 1994.
9. "Digital Libraries", Communications of the ACM, Special Issue, 38 (4), April 1995.

Canada Institute for Scientific and Technical
Information
National Research Council Canada
Building M-55, Montreal Road
Ottawa, Ontario
K1A 0S2

Telephone: (613) 993-1600 or
1-800-668-1222
Fax: (613) 952-9112
E-mail: cisti.info@nrc.ca
WWW: <http://www/cisti.nrc.ca/cisti/cisti.html>

Institut canadien de l'information scientifique
et technique
Conseil national de recherches Canada
Édifce M-55, chemin Montréal
Ottawa (ONTARIO)
K1A 0S2

Téléphone : (613) 993-1600 ou
1-800-668-1222
Télécopieur : (613) 952-9112
Courrier électronique : cisti.info@nrc.ca
WWW : <http://www/cisti.nrc.ca/cisti/cisti.html>