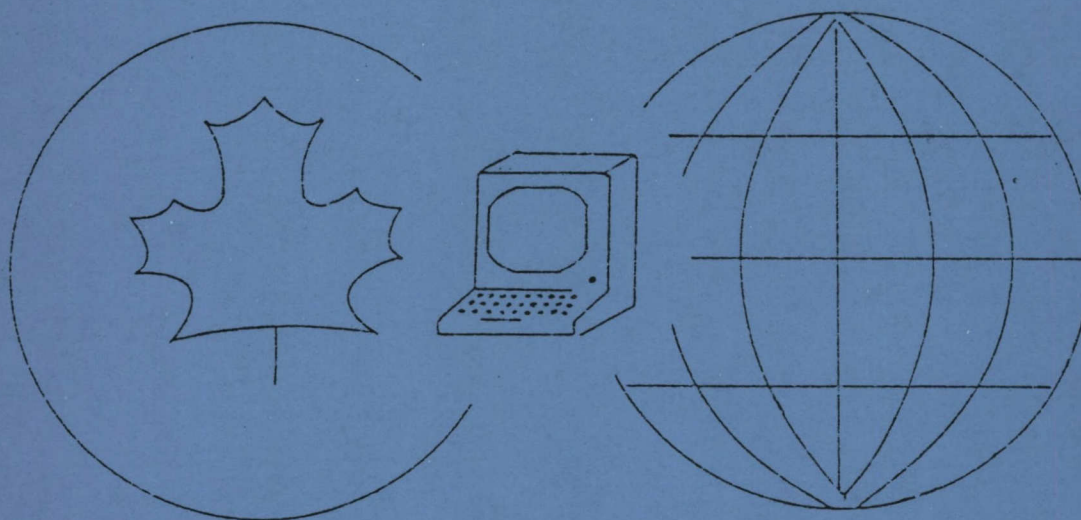


GOVERNMENT OF CANADA
INTER-DEPARTMENTAL TASK FORCE
ON TRANSBORDER DATA FLOW

REPORT ON PUBLIC ON-LINE INFORMATION
RETRIEVAL SERVICES

APPENDICES 1-6, 8-9



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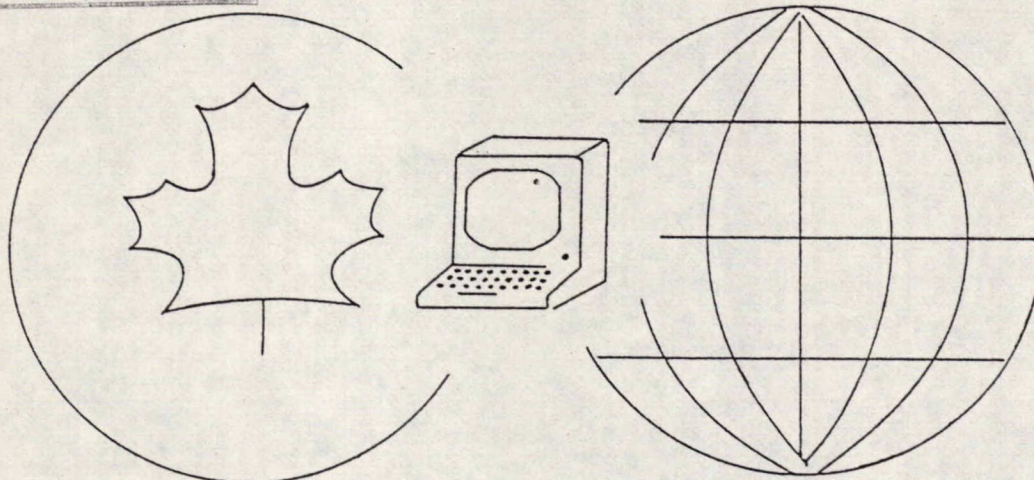
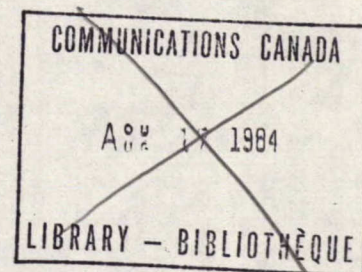
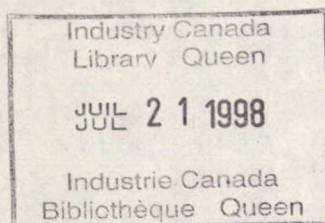
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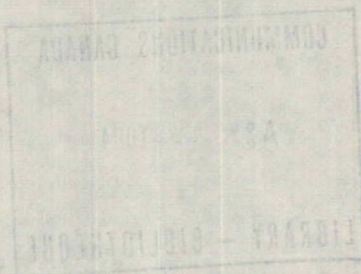
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Report on Public On-Line Information Retrieval Services

APPENDICES

- Appendix 1 - Overview of Selected Canadian Database Vendors
- Appendix 2 - Reference/bibliographic and Source Full-Text Data Bases:
Canadian Vendors
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- Appendix 6 - Thematic Approach: International Review of Geoscience Sources
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Organizations
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Note to Appendices

In order to put the appendices in their proper context, i.e. purpose, reliability/use of data sources, some questions, etc., certain appendices have been prefaced with notes.

REPORT ON PUBLIC ON-LINE INFORMATION SERVICES

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APPENDIX 1

OVERVIEW OF SELECTED CANADIAN

AND U.S. DATA BASE VENDORS

RESTRICTED CIRCULATION

This appendix contains a general overview of selected North American database vendor firms, which are listed in the Cuadra Directory. The 18 vendors with headquarters in Canada are listed in Table 1.1, while the 105 vendors headquartered in the U.S. are listed in Table 1.2. For each vendor, the following information is provided:

- i) Location of headquarters and computer centre;
- ii) Types and numbers of databases offered;
- iii) Access via public and private telecommunications networks.

Table 1.1 shows that 7 out of the 18 Canadian vendors provide only textual databases (Reference/Bibliographic or Source Full Text). Of the 11 vendors providing source numeric databases, only 3 provide 5 or more such databases (The Conference Board in Canada, I.P. Sharp Associates and FRI Information Services Ltd.); the other 8 offer 1-3 databases. Sharp offers more source numeric databases than all other Canadian vendors combined.

Notes: Symbols used in Tables 1.1, 1.2.

1. Type of Database

R = Reference, S = Source
B = Bibliographic, R = Referral
N = Numeric, T = Textual, F = Full-Text, P = Properties

2. Telecommunications Networks

LL = Private Leased Lines

DDD = Direct Distance Dial (ordinary long distance)

1 = Datapac (Canadian coverage); interconnected with Telenet, Tymnet

2 = Telenet (U.S., 36 other countries)

3 = Tymnet (U.S., 40 other countries)

4 = Euronet (EEC countries)

5 = Scannet (Scandinavia: Denmark, Finland, Norway, Sweden, Iceland)

6 = Transpac (France)

1-6 are public, packet switched networks

3. Sources

Directory of Online Databases

Cuadra Associates, Vol. 3, No. 1, Fall 1981.

Table 1.1

Characteristics of Selected Database Vendors
Firms with Headquarters in Canada

Vendor Name	Location		Database Offered		Telecom. Networks		Comments
	HQ	Computer	Types	No.	Own.	Public P.S.	
Advertising Management Systems	Toronto	-	S(N)	1		1	BBM Bureau of Management
Alphatext, Inc.	Ottawa	Ottawa	S(F)	1		1,2	National Master Specification
Boreal Institute for Northern Studies	Edmonton	Edmonton	R(B)	1		1	Boreal Lib. Catalogue
Canada Centre for Remote Sensing	Ottawa	Ottawa	R(B)	1		DDD only	RESORS
CISTI	Ottawa	Ottawa	R(B)	18		1	CAN/OIE and CAN/SDI systems
Computel Systems Ltd.	Ottawa	Ottawa	S(N)	1	LL	1	CANSIM Mini-Base
The Conference Board in Canada	Ottawa	Toronto	S(N)	7		1	
Datacrown, Inc.	Toronto	Ottawa, Toronto	S(N)	2	LL	1,2,3	CANSIM, Citibase
Dataline Systems Ltd.	Toronto	Toronto	S(N) S(T)	1 1	LL	1,2,3	CANSIM Mini-Base, RAPID
FRI Information Services Ltd.	Montreal	Montreal	S(N)	10		1,2,3	
Harris Media Systems Ltd.	Toronto	-	S(N)	2		1	BBM, RMB
I.P. Sharp Associates Ltd.	Toronto	Toronto	S(N) S(T) R(B)	62 2 2	APL Network	1,2,3	
IBM Canada Ltd.	Toronto	Toronto	S(N)	1	LL	1	CANSIM Mini-Base
Industrielle Services Techniques Inc. (IST)	Montreal	Montreal	S(N)	1	LL	1	CANSIM Mini-Base

Table 1.1 (continued)

Characteristics of Selected Database Vendors
Firms with Headquarters in Canada

Vendor Name	Location		Database Offered		Telecom. Networks		Comments
	HQ	Computer	Types	No.	Own.	Public P.S.	
Info Globe	Toronto	Toronto	S(F)	1		1,2,3	° Uses Datacrown Inc.
Informatech	Montreal	-	R(B)	7		1	French Language
McGill University Computing Centre	Montreal	Montreal	S(N)	1		1,2	F*A*C*T
QL Systems Ltd.	Ottawa	Kingston	R(B)	22		1,2	
			R(R)	2			
			S(F)	18			

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APPENDIX 2

REFERENCE/BIBLIOGRAPHIC AND SOURCE

FULL TEST DATABASES: CANADIAN VENDORS

The Canada Institute for Scientific and Technical Information (CISTI), QL Systems Limited, Informatech and the University of Alberta are the main Canadian vendors of reference databases. QL Systems also provides access to a number of full-text databases. These vendors face competition from the three major U.S. search services: Dialog Information Systems (DIALOG), Systems Development Corporation (SDC), whose services in Canada are marketed by Infomart, and Bibliographic Retrieval Services (BRS). Info Globe is the major Canadian supplier for full-text news databases.

A. CISTI

The Canada Institute for Scientific and Technical Information (CISTI), a division of the National Research Council (NRC), evolved from the National Science Library. Its mandate is derived from a Cabinet Committee Decision on Scientific and Technical Information Dissemination, dated December 11, 1969. The mandate requires CISTI to provide Canadian researchers, technologists and managers in industry, government and universities with scientific and technical information "at the right time, at the right place and in the right form". The CAN/OLE and CAN/SDI Systems are CISTI's main computer-based tools. It also serves as an access node to MEDLARS, the U.S. National Library of Medicine's online information system.

1. CAN/OLE

CAN/OLE (Canadian Online Enquiry System) is a national online information retrieval system for the retrospective searching of bibliographical reference files in all major fields of science and technology. The service has

been in operation since March 1974 and is actively used by R&D organizations in industry, government and universities. The system can be accessed from over 50 Canadian cities, through the TCTS Datapac communications network, without incurring long-distance charges. A list of bibliographic/reference databases accessible through CAN/OLE, as of March 1981, is given in Table 2.1; 18 databases containing over 10.7 million citations were covered. There were 680 terminal users in 353 CAN/OLE centres as of that date; 12,277 CAN/DOC online document ordering requests were processed during the 6 month period September 1980 - February 1981.

CAN/OLE pricing is based upon three charge elements: access, storage and offline printing. All databases are available at a base rate of \$40.00 per connect hour, plus a royalty which varies from zero to \$30.00 per connect hour; the non-Canadian databases tend to have the higher royalties. The base rate includes the cost of communications from all cities served by the TCTS Datapac network; costs incurred in reaching a Datapac node are the responsibility of the user. The storage charge is \$0.20 per month per page of 4096 characters; this is equivalent to about \$49.0 per month per million characters. Offline prints are charged at a rate of 3.5 cents per citation, plus royalties where applicable.

CAN/OLE usage statistics are given in Table 2.3, for the years 1977/78 to 1980/81. These show that over the last 3 years the number of databases available has increased from 8 to 18 (125%); the number of citations contained in these databases from 5.5m to 10.7m (94.55%); the number of CAN/OLE access centres from 136 to 353 (259.6%); the number of database connects/searches from 22,525 to 108,799 (383%) and the number of annual connect hours from 3,619 to

6,324 (74.74%). The greatest increase has been in online document orders, which grew from 1508 in 1977/78 to 23,330 in 1980/81; this is a 15.5 fold increase in just 3 years, or an annual increase of 150% each year.

2. CAN/SDI

CAN/SDI (Canadian Service for the Selective Dissemination of Information) is a current awareness service which keeps researchers informed, on a continuing basis, of recent publications in their field. This is done by searching, in a batch mode, the researcher's customized "information profile" against one or more specified databases, and forwarding the references retrieved (normally a printout) to the customer by mail or a courier service. The search frequency varies from once a week to once a month, depending on the database. A list of the available databases and the subject areas they cover is given in Table 2.2. Currently there are more than 3,200 interest profiles on CAN/SDI, being searched against one of 19 databases. Each profile represents the information needs of an average of two researchers. CAN/SDI users exist in all provinces of Canada, the USA and some other countries.

The five major CAN/SDI centres, and their respective areas of expertise and support, are as follows:

- | | |
|-------------------------------------|--|
| (i) Science and Technology | - CISTI, NRC |
| (ii) Humanities and Social Sciences | - National Library of Canada |
| (iii) Agricultural Sciences | - Agriculture Canada |
| (iv) Geosciences | - Geological Survey of Canada |
| | Department of Energy, Mines and
Resources (EMR) |

(v) Metallurgy

- CANMET (Canada Centre for Mineral
and Energy Technology), EMR

CAN/SDI activity statistics for the years 1977/78 to 1980/81 are given in Table 2.3. Compared to the vigorous growth in CAN/OLE usage, that of CAN/SDI has remained stable or even declined. Thus the number of databases has increased from 18 to 19, the number of subscribers has grown by 3.66% from 2102 to 2179, and the number of interest profiles has stabilized around 3200. The number of searches conducted has declined by 9.34% from 102,800 to 93,200, and the number of citations printed by 3.9% from 5.64 million to 5.42 million. The difference in CAN/OLE and CAN/SDI usage patterns can probably be ascribed to a shift in user preference, from retrospective batch searching at a scheduled frequency, requiring a turnaround time of days, to online searching on an as and when required basis.

3. Revenues and Costs

CISTI's revenues and costs for 1980/81 were \$1.252m and \$12.191m respectively; thus revenues covered 10.27% of total costs. In 1979/80 the corresponding figures were \$1.103m, \$10.597m and 10.41% respectively. External revenues, i.e. revenues from non-NRC users, accounted for \$1.069m (80%) of the total in 1980/81 and \$.947m (86%) of the total in 1979/80.

Until precise revenues and costs can be attributed to the CAN/OLE and CAN/SDI activities, it is not possible to determine the extent to which these activities might be subsidized. The beneficiaries of this subsidy are, of course, the end users, who include a large number of libraries. If CAN/OLE and

CAN/SDI services are being offered at substantially lower prices than those required for full cost recovery, this might make it impossible for private Canadian vendors to enter this area of the market. On the other hand, an increase in rates for CAN/OLE and CAN/SDI services might force public libraries (municipal and post-secondary educational institutions) to reduce or restrict their use of the service, due to financial constraints.

B. QL Systems Limited

1. Service Description and Costs

QL Systems Limited was incorporated in 1973 to carry forward the work commenced by the QUIC/LAW project at Queen's University in 1968. Since its incorporation the firm has been dedicated to developing and maintaining QL/SEARCH, the first Canadian commercial information retrieval system for textual databases.

The QL/Search Information Retrieval Service is used across Canada, and in the U.S., Europe, Australia and New Zealand by research workers, government agencies and various types of libraries (academic, legal, business and public). QL Systems Limited had sales of over \$1m in 1980, and employed 40 people. The firm has its headquarters in Ottawa, with branches in Toronto and Kingston. Its computer centre is located in Kingston, Ontario. QL Systems does not have a marketing or support organization outside central Canada, or franchised agents to sell its services outside Canada.

QL/SEARCH provides online retrieval to over 40 databases. These databases, listed in Table 2.4, are concerned with Parliament and the government, the law, business, communications, energy, mining, environment and pollution, the Canadian North, and related subjects. Some QL databases, especially those dealing with the law and Parliament, are full text; others are reference databases containing abstracts or only the titles. The retrieval system searches each database selected. Any document containing the user's search word or words is retrieved and can be printed out at the user's terminal, or offline on a high speed printer. The system handles natural language queries, provides Boolean logic and includes phrase searching capabilities.

Access is via the TCTS Datapac packet-switched communications network in Canada, and the Telenet or Tymnet networks in the U.S. Communications charges are \$7.50 per connect hour for Datapac, and \$10.00 per connect hour for Telenet and Tymnet. System use costs include \$2.00 to select a database and \$2.00 for each search strategy; there are no fixed costs. The basic pricing philosophy has been to break out the access and search cost components, rather than bundle them into a single connect time charge, which seems to be the normal practice for search services and vendors of full text databases.

Under market pressure, however, the company has begun to experiment with another pricing scheme. Under this scheme, QL Systems provides the user with a terminal and allows him to search any of its databases for \$90 per connect hour; a minimum monthly commitment of 4 hours (\$360) is required. Depending upon the cost of the terminal, this would be equivalent to a rate of \$60-70 per connect hour, including telecommunications costs.

2. Products and Markets

- a) QL System's first major product is its three software packages, which it offers for lease or purchase. These are:
 - i) Q/L Search - The library of textual database management and retrieval programs that have been developed to operate QL's Information Retrieval Service;
 - ii) Q/L NEWS - This software provides facilities for storing the full text of a newspaper, for offering a newspaper's librarians the capability of enhancing the text, and for retrieving the full text of any story;
 - iii) Q/L Text - QL's text editing system, which can be used as a word processing system and has an Electronic Mail capability.

The basic search software was considered state-of-the-art when first developed. It was purchased by the West Publishing Company in the U.S. to form the basis of the Westlaw service, and by Info Globe to run its news database. Both companies have, of course, heavily modified the original software. QL Systems currently sells copies of the software package for \$65K. This price includes installation costs (\$5K) and 1 year's free maintenance. The firm is now changing from outright sales to lease of maintained versions of the software, and requiring that user enhancements be shared with QL Systems. QL's software systems have been installed at several locations, in Canada and the U.S.

- b) Legal Databases form the first, and still the most important portfolio area for the firm; 14 are currently offered (Table 2.4). This is primarily due to its history, and the early support received from the Department of Justice. QL Systems is the only commercial Canadian vendor in this area. Canadian legal firms have, however, been far slower to use legal databases than their U.S. counterparts, who have made both LEXIS and Westlaw a success. As a consequence, growth in this area has been slower than anticipated. QL currently has some 25 Canadian legal firms as clients, but the number is increasing. QL still predicts that legal databases will be a major growth area in the 1980s; the potential users include the courts, as well as every legal firm of any size in the country.
- c) Databases related to the Environment form the second major portfolio area of QL, with 9 currently being offered. The Departments of the Environment and Fisheries and Oceans were early supporters of QL. They have paid for the computer and storage costs of the WATDOC group of databases, which are currently running at about \$100K per year. Usage of these environment databases is still very small, however, and does not allow QL to recover their full computer and storage costs. If the support costs paid by these departments are cut off, QL may have to drop these databases. The only other potential Canadian vendor is CISTI. If neither Canadian vendor could support these databases, Canadian users would have to go to a U.S. vendor to access databases created in Canada by public agencies using public funds.

CAN/SDI services are being offered at substantially lower prices than those required for full cost recovery, this might make it impossible for private Canadian vendors to enter this area of the market. On the other hand, an increase in rates for CAN/OLE and CAN/SDI services might force public libraries (municipal and post-secondary educational institutions) to reduce or restrict their use of the service, due to financial constraints.

B. QL Systems Limited

(This section is currently under review by the company concerned, i.e. pp.5-9)

C. Info Globe

(This section is currently under review by the company concerned)
(pp.9-12)

Table 2.1: Databases on CAN/OLE

Database		Information Provider/Producer	Coverage	Number of records as of March 81	Number of records per update	Updates per year
Code	Name					
<u>Non-Canadian Databases</u>						
BA	BIOSIS Previews	BioSciences Information Service (US)	1972-78	1,712,240	-	-
BA79	BIOSIS Previews	BioSciences Information Service (US)	1979-	689,919	22,000	12
CAC	CA Condensates	American Chemical Society (US)	1973-78	2,214,740	-	-
CAS	CA Search	American Chemical Society (US)	1979-	936,821	36,000	12
CHEM	Chemical Index	American Chemical Society (US)	1979-	1,083,000	-	12
COAL	Coal Research	IEA Coal Research Technical Information Service	1979-	20,000	-	12
EI	Compendex	Engineering Index Inc. (US)	1970-	960,000	8,100	12
INSP	INSPEC: Physics, Electrical and Electronic, and Computer and Control Abstracts	Institution of Electrical Engineers (UK)	1970-	1,547,343	14,500	12
NTIS	Government Reports Announcements and Index	National Technical Information Service (US)	1971-	588,000	3,000	12
<u>Canadian Databases</u>						
AOSI	Alberta Oil Sands Index	Alberta Research Council	1970-	6,246	200	4
CODOC	Cooperative Document Project	CODOC Document Group (Guelph)	Pre-Confederation	723,000	6,000	6
ELIAS	Environment Libraries Automated System	Environment Canada	1976-	23,808	300	12
IEC	Directory of Federally Supported Research in Universities	National Research Council Canada	1971/72-	86,740	9,800	1

Table 2.1: Databases on CAN/OLE (continued)

Database		Information Provider/Producer	Coverage	Number of records as of March 81	Number of records per update	Updates per year
Code	Name					
Non-Canadian Databases						
NRIS	Northern Research and Documentation Service	Department of Indian and Northern Affairs	1976-	852	200	1
CON	CISTI Catalogue	National Research Council Canada	1978-	110,000	1,200	12
CONL	CAN/MARC (CANadian Machine-Readable Cataloguing)	National Library of Canada	1973-	148,000	2,300	12
OOT	Canadian Trans- portation Documen- tation System	Transport Canada	1960-	86,307	11,800	4
UNION	Union List of Scientific Serials in Canadian Libraries	National Research Council Canada		50,000	600	4

Table 2.2: Reference Databases Available Through CAN/SDI

Database	Subject/ Field	Information Provider/Producer	Abstract Available	Updates per year	CAN/SDI Centre
AGRICOLA	Agriculture	U.S. Dept. of Agriculture	No	12	Agriculture Canada
ASFA	Aquatic Sciences, Fisheries	Information Retrieval Ltd., GB, under contract to FAO, UN	Yes	12	CISTI
BIOSIS PREVIEWS	Biology	Biosciences Information Services, Penn., USA	No	36	CISTI
CANCERLIT	Cancer	National Library of Medicine, Md., USA	Yes	12	CISTI
CA SEARCH	Chemistry	Chemical Abstracts Service, Ohio, USA	No	52	CISTI
CHEMICAL TITLES	Chemistry	Chemical Abstracts Service, Ohio, USA	No	26	CISTI
COMPENDEX	Engineering	Engineering Index Inc., NY, USA	Yes	12	CISTI
ERIC	Education, Multidisci- plinary	ERIC Processing and Reference Facility, Md., USA	Yes	12	National Library of Canada
FSTA	Food Sciences	International Food Information Service (IFIS), Frankfurt, W. Germany	Yes	12	Agriculture Canada
GEOREF	Geology	American Geological Institute, Va., USA	No	12	Geological Survey of Canada
INSPEC	Computers & Control, Electrical & Elec- tronics, Physics	INSPEC Retrieval Services Dept., Institutions of Electrical Engineers, London, GB	Yes	24	CISTI

Table 2.2: Reference Databases Available Through CAN/SDI (continued)

Database	Subject/ Field	Information Provider/Producer	Abstract Available	Updates per year	CAN/SDI Centre
MARC II	Multidisciplinary	MARC Distribution Service, Library of Congress, USA	No	52	National Library of Canada
MEDLINE	Medicine	National Library of Medicine, Md., USA	Partial	12	CISTI
METADEX	Metallurgy and Metals	American Society for Metals, Ohio, USA	Yes	12	CANMET
NTIS	Humanities, Multidisciplinary, Science & Technology	National Technical Information Service, U.S. Dept. of Commerce	Yes	26	CISTI
SCI	Multidisciplinary, Science & Technology	Institute of Scientific Information, Philadelphia, Penn., USA	No	52	CISTI
SSCI	Humanities, Multidisciplinary, Social Sciences	Institute for Scientific Information, Philadelphia, Penn., USA	No	52	National Library of Canada
TOXLINE	Toxicology	Toxicology Information Program, National Library of Medicine, Md., USA	Yes	12	CISTI

Table 2.3: CISTI Staff Size, Budget, and Volume of Activity
(Revenues and Expenditures in \$000's)

Item	1977/78		1978/79		1979/80		1980/81	
	Quantity	Y/Y % change	Quantity	Y/Y % change	Quantity	Y/Y % change	Quantity	Y/Y % change
A. Person Years	190	-	190	0	188	-1.0	193	2.70
B. Expenditures								
Salaries	3,268	-	3,542	8.38	3,361	-5.11	4,128	22.82
Acquisitions	2,308	-	3,454	49.70	3,914	13.32	4,607	17.71
Other	2,954	-	2,751	-6.87	3,322	20.76	3,456	4.38
TOTAL	8,530	-	9,747	14.27	10,597	8.72	12,191	15.04
Salaries/Total (%)	38.3	-	36.3		31.7		33.9	
Acquisitions/Total (%)	27.0	-	35.4		36.9		37.8	
C. Revenues								
From NRC	N/A		N/A		156	-	183	17.31
Non-NRC	822	-	858	4.38	947	10.37	1,069	12.88
TOTAL	822	-	858	4.38	1,103	28.55	1,252	13.51
D. Revenues/Exp. (%)	9.64		8.0		10.41		10.27	
E. CAN/OLE Activity								
No. of Databases	8	-	13	-	17	-	18	-
Records (millions)	5.5	-	7.0	27.27	8.9	27.14	10.8	20.22
Centres	136	-	198	45.59	275	38.89	353	28.36
Database Connects/ Searches	22,525	-	31,302	38.97	56,802	81.46	108,799	91.54
Connect Hours	3,619	-	3,873	7.02	4,587	18.44	6,324	37.87
Online Document Orders	1,508	-	4,119	173.1	7,922	94.03	23,330	194.5
F. CAN/SDI Activity								
Subscribers	2,102	-	2,124	1.05	2,130	0.28	2,179	2.30
Interest Profiles	3,209	-	3,232	0.72	3,214	-0.56	3,210	-0.02
Searches (thousands)	102.8	-	97.8	-4.87	94.1	-3.78	93.2	-0.96
No. of Databases	18	-	18	-	19	-	19	-
Citations Printed (millions)	5.64	-	5.35	-5.14	5.66	5.79	5.42	-4.24
G. Cdn. MEDLARS Use								
MEDLARS Databases	13		13		16		17	
MEDLARS Records (m)	4.60	-	4.90	6.52	5.56	13.47	6.09	9.53
MEDLARS Centres	55	-	67	21.82	86	28.36	110	27.91
Subscribers	-		-		-		-	
Connect Hours	2,747		3,058	11.32	3,689	20.63	4,924	33.48
Pages Printed (000s)	-		-		-		233	

Table 2.4: Databases distributed by Q L Systems Limited

Subject/ Short Name	Database	Information Producer/Source	Type of Database	Time Span	Update Frequency	Surcharge
<u>A. LAW</u>						
ACWS	All-Canada Weekly Summaries	Canada Law Book Ltd., Ontario	Reference (Summaries)	7.1.77-	Weekly	\$3/search
APR	Atlantic Provinces Reports	Maritime Law Book Co. Ltd.	Full Text	1969-		-
CCC	Canadian Criminal Cases	Canada Law Book Ltd., Ontario	Full Text (Headnotes)	Jan. 71 -	Twice Monthly	\$3/search
DLR	Dominion Law Reports	Canada Law Book Ltd., Ontario	Full Text (Headnotes)	Sept. 55 (Vol. 1-89)	Twice Monthly	\$3/search
FCR (1) (RCF)	Federal Court of Canada Reports	Sponsored by Dept. of Justice	Full Text (Headnotes)	1971-	Irregu- larly	-
RSC (1) (SRC)	Revised Statutes of Canada	Sponsored by Dept. of Justice	Full Text	-	Irregu- larly	-
SAC	Statutes of Alberta Citator	Sponsored by Canadian Law Information Council	Full Text	1970-	Irregu- larly	-
SBC	Statutes of British Columbia	B.C. Attorney General's Dept.	Full Text	Up to 31.12.79	Irregu- larly	-
SCR (1) (RCS)	Supreme Court of Canada Reports (Headnotes)	Sponsored by Dept. of Justice	Full Text (Headnotes)	1930-	Irregu- larly	-
SMC	Statutes of Manitoba Citator	Sponsored by Canadian Law Information Council; Law Society of Manitoba	Reference (Citations, Summaries)	1970-	Irregu- larly	-
SNB	Statutes of New Brunswick	Sponsored by NB Attorney General's Department	Full Text		Irregu- larly	-
SO	Statutes of Ontario	(In preparation)	Full Text			-
SOR (1)	Statutory Orders and Regulations	(In preparation)	Full Text			-

Table 2.4: Databases distributed by Q L Systems Limited (Continued)

Subject/ Short Name	Database	Information Producer/Source	Type of Database	Time Span	Update Frequency	Surcharge
TAR	Tax Advance Rulings	Dept. of National Revenue and Taxation	Full Text	26.4.74 -	As published	-
WCB	Weekly Criminal Bulletin	Canada Law Book Ltd., Ontario	Reference (Summaries)	27.10.76 -	Weekly	\$3/search
WWR	Western Weekly Reports	Carswell Co. Ltd., Ontario	Full Text (Headnotes)	1968-	Irregu- larly	-
B. PARLIA- MENT						
HOQ (1) (HQO)	Hansard Oral Questions	Sponsored by House of Commons, Ottawa	Full Text	29.1.73 -	Biweekly	-
HWQ (1) (HQE)	Hansard Written Questions	Sponsored by House of Commons, Ottawa	Full Text	4.1.73 -	Biweekly	-
SPK (1) (REG)	Speakers' Rulings of the House of Commons	House of Commons, Ottawa	Full Text	15.10.74 29.6.76	Irregu- larly	-
STO (1) (DLO)	Standing Orders of the House of Commons	House of Commons, Ottawa	Full Text	Jan. 76 -	Irregu- larly	-
C. ENVIRON- MENT						
ASFA	Aquatic Sciences and Fisheries Abstracts	Sponsored by ° WATDOC, Fisheries and Environment Canada ° FAO and other UN agencies	Reference (Abstracts)	Jan. 78 -	Monthly	-
BNT	Boreal Northern Titles	Boreal Institute for Northern Studies, Univ. of Alberta	Reference (Citations)	Jan. 72 -	Monthly	-
CENV	Canadian Environment	Sponsored by WATDOC, Environment Canada	Reference (Abstracts)	1970-	Monthly	-
DEL (4)	Delft Hydro	Sponsored by WATDOC, and Delft Hydraulics Laboratories, Netherlands	Reference (Abstracts)	1976-	Irregu- larly	-

Table 2.4: Databases distributed by Q L Systems Limited (Continued)

Subject/ Short Name	Database	Information Producer/Source	Type of Database	Time Span	Update Frequency	Surcharge
DREF	Data Reference (inventories of data collects and data handling systems)	Sponsored by WATDOC	Reference (Abstracts)	Early 1980s to present	Semi- Annually	-
ENV (2)	Environment (French counter- part of GENV)	Sponsored by WATDOC	Reference (Abstracts)	1970-	Monthly	-
SOL	Solid Waste	Produced by Environ- ment Protection Service and WATDOC	Reference (Abstracts)	1970-	Irregu- larly	-
SWR (3)	Selected Water Resources Abstracts	Sponsored by WATDOC, produced by U.S. Dept. of the Interior	Reference (Abstracts)	Feb. 75 -	Monthly	-
YKB	Yukon Bibliographies	Boreal Institute for Northern Studies, Univ. of Alberta	Reference (Citations & Abstracts)	1971-	Irregu- larly	-
D. BUSINESS, GOVERN- MENT GENERAL						
AST	Artic Science and Technology Information System	Artic Institute of North America, Univ. of Calgary	Reference (Citations & Abstracts)	1978-		-
CBI	Canadian Business Index	Micromedia Ltd.	Reference (Citations)	July 75 -	Monthly	\$14/ online hour, plus \$0.15 per document printed
CNI	Canadian News Index	Micromedia Ltd.	Reference (Citations)	Jan. 77 -		
COMM	Communications Information	Prof. J. Black, Univ. of Guelph	Reference (Citations)	1960-	6 times per year	-
CPL	Canadian Plains Research Inventory					

Table 2.4: Databases distributed by Q L Systems Limited (Continued)

Subject/ Short Name	Database	Information Producer/Source	Type of Database	Time Span	Update Frequency	Surcharge
ECON	Economics (index of items published in 1979 International Bibliography of Economics)	Published by International Committee for Social Science Information and Documentation	Reference (Index)	1979	Irregularly	-
ENC	Energy Calendar of Events (Conferences, Seminars, etc.)	Energy, Mines and Resources Canada (EMR)	Calendar	Present-Near Future	Irregularly	-
ENG	Energy Projects (ongoing projects in Canada)	EMR and Provincial Energy Departments/Agencies	Reference (Abstracts)	Present	As required	-
ENP	Energy Programs (description of federal and provincial programs)	EMR and Provincial Departments/Agencies	Full Text (Descriptions)	Present	As required	-
FEES	Fees Charged for Library Services	Students of the Graduate School for Library Science, McGill University	Reference (Abstracts)	1974-	Irregularly	-
IBSS	International Bibliography of the Social Sciences					
MET	Metals Abstract (METADEX) - metals, metallurgy and related subjects	American Society for Metals, Ohio, USA	Reference (Citations)	1974-	Irregularly	\$25/hr. + \$0.04/document
MNI		CANMET, EMR Canada	Reference (Abstracts)	May 73-	Irregularly	- -
OGI	Ontario Government Information	Citizens Inquiry Bureau, Min. of Culture & Recreation, Govt. of Ontario	KWIC Index, Documents	1978-	Irregularly	
WAA	World Aluminium Abstracts	American Society for Metals, Ohio, USA	Reference (Abstracts)	1968-	Monthly	?

Notes:

1. Also available in French language version, name in brackets.
2. Available in French language only.
3. Available in Canada only.
4. Available outside Europe only.

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APPENDIX 3

SOURCE ALPHA-NUMERIC DATABASES:

STATISTICS CANADA/CANSIM

Statistics Canada is the country's largest producer and disseminator of statistical information. The agency provides information, free or at nominal cost, on almost every type of economic and social activity in Canada. Statistics Canada regional offices now receive in excess of 160,000 requests for information per year. In addition to some 1,300 publications issued every year, the agency also disseminates its information through such media as microfiche, microfilm, computer printouts, computer tapes and CANSIM. It is also experimenting with the use of Telidon as a medium of dissemination.

A. CANSIM

CANSIM (Canadian Socio-Economic Information Management System), Statistics Canada's machine-readable database, is the agency's principal tool for disseminating information in machine-readable form. CANSIM comprises two modules. These are the Time Series Module, containing current and historical information from a broad range of interrelated socio-economic fields, and the cross-classified module, which addresses the demand for multi-dimensional tabular data. The data for these two modules, together with the CANSIM software for data entry, information retrieval and administrative support, are housed at the host service bureau. This is currently Datacrown Ltd., but will be IST Inc. from April 1, 1982. Both modules can be accessed in interactive or remote-batch mode, via the telecommunications network linking Datacrown Ltd. to all points in North America. CANSIM time series data can also be accessed at 12 Secondary Distributors, and a number of organizations (like universities) which obtain the data for private use.

Time Series Module

The CANSIM Time Series module contains major groups of data on the following subject matter areas:

- System of National Accounts
- Prices and Price Indexes
- Labour
- Manufacturing and Primary Industries
- Capital and Finance
- Construction
- Merchandising and Services
- External Trade
- Transportation
- Agriculture and Food
- Population Estimates and Projections
- Health and Welfare

It also contains data from the Canadian Statistical Review, the Bank of Canada Review, the Quebec Statistical Review and selected U.S. statistics.

Main Base, Mini Base and Supplement

The CANSIM Main Base currently contains some 300,000 time series and is updated on a daily basis. The CANSIM Mini Base is a standard subset of data drawn from the Main Base, containing approximately 18,000 of the most widely

used series, which are updated daily. The Mini Base is currently offered by ten Canadian Secondary Distributors and two U.S. ones (Table 3.1). A Secondary Distributor is an organization (usually, but not always, a computer service bureau) that has agreed to disseminate CANSIM data according to Statistics Canada guidelines. The Secondary Distributors provide the end users with a large choice of suppliers, software, telecommunications networks and technical support staff in accessing CANSIM data. With the exception of Canada Systems Group Ltd., all the other major central Canadian service bureaus have become CANSIM secondary distributors.

Besides the CANSIM Mini Base, Secondary Distributors can offer their users supplementary series as part of their CANSIM Mini Base supplement. This data set varies from one Secondary Distributor to another, and enables each to meet the unique data needs of their clients. This service is optional, however, and is not utilized by all the Secondary Distributors.

A number of other organizations, notably universities, acquire CANSIM time series data for internal use (e.g. by faculty members and students, for teaching and research). These organizations do not usually resell the data for use by third parties.

Cross-Classified Module

This module is of particular interest to analysts and researchers specializing in social studies and societal evolution/problems. It meets the need for combining cross-tabulation and analysis of data on social conditions

(i.e. demographics, family structure, occupation, income, etc.) available from the Census, with data on social phenomena in the fields of education, health, welfare, justice and others.

For uniformity, statistical data are organized in this system according to a standard format - the Table. The structure of the cross-classified table allows data of up to nine levels of cross-classification to be entered, stored and retrieved. Descriptive information provides titles, footnotes, explanations and definitions to foster the proper use of the table.

Tables have been identified for 1976 Census data, agriculture, family income and expenditure. Information on health, justice, education, science and culture has also been identified. The system is being expanded progressively.

The Cross-classified Module has undergone extensive internal testing and use by CANSIM staff and other selected groups. Release for widespread commercial use will probably take place in 1982.

Usage, Revenues and Costs

The CANSIM Main Base software automatically logs all accesses for series retrieval, thus providing usage statistics. Secondary distributors are also required to maintain comparable statistics, and report them every month. On the basis of these statistics, it is estimated that there were approximately 4,000,000 retrievals of series from the Main and Mini Bases in 1980. Compared

with the approximately _____ retrievals in 1979, this represents an annual growth of ____%.

Each Secondary Distributor is required to pay \$20K per year as a fixed cost. CANSIM does not levy royalty charges for the use of its data. The Secondary Distributors, because of competitive market pressures, have not done so either up to now. In addition to the fixed costs, the Secondary Distributors incur considerable computer costs, due to daily updating, and data storage costs.. Their perceived benefits from offering the Minibase (and Supplement) must at least equal these out-of-pocket and opportunity costs.

CANSIM receives revenues of about \$200K per year from the Secondary Distributors. This covers less than 25% of its computer usage and data storage costs, which are currently running at about \$950K per year. If personnel and overhead costs are included, it will be seen that CANSIM, as a database producer, is providing a considerable subsidy for the widespread dissemination of its data in machine-readable form. Whether the cost to the end users should be increased by levying some form of royalty, which can then be used to reduce CANSIM's operating deficit. It is a question that will have to be faced if CANSIM is required to operate in a full cost recovery mode.

Table 3.1: Primary and Secondary Distributors of CANSIM Databases

Service Bureau	Datacentre Location	Type of Distributor	Type of Base	No. of Time Series	Approx. No. of Users	Comments
Datacrown Ltd.	Ottawa	Primary (Host)	°Main Base °Cross-classified	300,000+		
	Metro Toronto	Secondary Secondary	°Mini Base °Mini Base	18,000+ 18,000+		
Computel Systems Ltd.	Ottawa	Secondary	Mini Base + Supplement	30,000+		
Computer Sciences Canada Ltd.	Metro Toronto	Secondary	Mini Base	18,000+		
Comshare Ltd.	Metro Toronto	Secondary	Mini Base	18,000+		
Conference Board in Canada	Metro Toronto	Secondary	Mini Base + Supplement	25,000+		
Data Resources Incorporated	Lexington, Mass. USA	Secondary	Mini Base	18,000+		
Dataline Systems Ltd.	Metro Toronto	Secondary	Mini Base + Supplement	30,000+		
FRI Information Services Ltd.	Montreal	Secondary	Mini Base	18,000+		
IBM Service Bureaus	Metro Toronto	Secondary	Mini Base	18,000+		
Industrial Life-Technical Services (IST) Inc.	Montreal	Secondary	Mini Base	18,000+		
Interactive Data Corp. (IDC)	Waltham, Mass. USA	Secondary	Mini Base	18,000+		
I.P. Sharp Associates	Metro Toronto	Secondary	Mini Base + Supplement	60,000+		

Note: Primary and secondary CANSIM databases are updated daily.

B. Telidon Activities

An organizational study of Statistics Canada by Price Waterhouse Associates recommended, in February 1980, that the agency should "take the initiative in providing information for distribution through new communications media such as Telidon". The study report noted "Major users in the economic forecasting field rely heavily on the CANSIM database in building models and developing forecasts. The Telidon system.... could be an ideal medium for disseminating statistics to households and medium size businesses who only use such information occasionally".

A Telidon task force has been set up. It is currently creating the following nine information packages: Quiz, Leading Economic Indicators, Consumer Price Index, Today's Economy, Map of Census Data, Fast Facts on Canadians, Energy in the Home, Statistics Canada at Your Service, and June 3 is Census Day. These packages will contain about 250 pages of statistics, graphics and textual information. Priority has been given to the creation of about 150 "static" pages; these have been made available to the DOC demonstration database, the Bell Vista database and other major field trial operators. It is also planned to create about 100 "dynamic" pages, which will be updated regularly to reflect changing variables such as leading economic indicators, once software has been developed that will allow remote updating, from existing databases like CANSIM, at the required frequency.

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APPENDIX 4

SOURCE ALPHA-NUMERIC DATABASES:
TIMESHARING COMPUTER SERVICE BUREAUS SPECIALIZING IN
INFORMATION RETRIEVAL SERVICES

Notes: Symbols used in Tables 4.1, 4.2, 4.3

1. Type of Database

R = References, S = Source

B = Bibliographic, R = Referral

N = Numeric, T = Textual - Numeric, F = Full Text, P = Properties

2. Database Subject/Area

Major Disciplines:

B & I = Business and Industry

S & T = Science and Technology

SS & H = Social Science and Humanities

M = Multidisciplinary

Sub-area:

Indicated within brackets below the major discipline, e.g. Economics,
Finance, Energy.

3. Update Frequency

D = Daily

W = Weekly

M = Monthly

Q = Quarterly

A = Annually

C = Continuous

4. Sources

Directory of Online Databases

Cuadra Associates, Vol. 3, No. 1, Fall 1981

Public Databases Catalogue

I.P. Sharp Associates Ltd., December 1981

Table 4.1: Databases distributed by I.P. Sharp Associates Ltd.

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
AEA (Association of European Airlines)	S(N)	B&I (Aviation)	Member airlines of the AEA, from own data	175,000	M/A	No (Membership)
AISL (Aircraft Accident Database)	S(T)	"	Aviation Information Services Ltd., U.K.	-	As available	No
COAND (Commuter Online Origin Destination)	S(N)	"	U.S. Civil Aeronautics Board (CAB)	-	Q	No
COPS (Canadian Operating Statistics)	"	"	Statistics Canada	2 Tables	Q	No
ER586 (ER586 Service Segment)	"	"	U.S. Civil Aeronautics Board (CAB)	10,000,000 +	M	No
FORM41	"	"	U.S. Civil Aeronautics Board (CAB)	500,000	M/Q	No
IATA (IATA North Atlantic Traffic)	"	"	IATA, from data filed by member carriers	16 Tables	Discontinued	No
ICAO (ICAO Traffic Statistics)	"	"	International Civil Aviation Organization	-	A	No
INS (U.S. International Air Travel Statistics)	"	"	U.S. Depts. of Transport, Justice and INS	2,000,000	M	No
OAG2 (Official Airline Guide)	"	"	Official Airlines Guide Inc., USA	3,000,000 +	M	No
OAND (Origin - Destination Survey)	"	"	U.S. Civil Aeronautics Board (CAB)	3 Tables	Q	No
T6 (Aircharter Flights from/to U.S.)	"	"	U.S. Civil Aeronautics Board (CAB)	-	Discontinued	No
API (Weekly Statistical Bulletin)	S(N)	B&I (Energy)	American Petroleum Institute, USA	500	W	No

Table 4.1: Databases distributed by I.P. Sharp Associates Ltd. (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
ARGREP (Petroleum Argus Daily Market Report)	S(T)	B&I (Energy)	Europ-Oil Prices, U.K.	50 Reports	D	U.S. \$1250 Annual
ARGUS (Petroleum Argus)	S(N)	"	Europ-Oil Prices, U.K.	2 Tables	D	U.S. \$25/ month
DOE (Monthly Petroleum Statement)	"	"	U.S. Dept. of Energy (U.S. DOE)	4,500	M	No
HFO (Heavy Fuel Oils)	"	"	U.S. Dept. of Energy (U.S. DOE)	8 Tables	M	No
IMPORTS (U.S. Petroleum Imports)	"	"	American Petroleum Institute, from U.S. DOE	-	M	U.S. \$200/ year
IPA (International Petroleum Annual)	"	"	U.S. Dept. of Energy (U.S. DOE)	1,500	Discon- tinued	No
LPGAS (Liquefied Petroleum Gas Report)	"	"	American Petroleum Institute	100	M	No
MER (Monthly Energy Review)	"	"	U.S. Dept. of Energy (U.S. DOE)	Tables	M	No
MPSR (Monthly Petroleum Statistics Report)	"	"	U.S. Dept. of Energy (U.S. DOE)	750	M	No
QOS (OECD Quarterly Oil Statistics)	"	"	Organization for Economic Cooperation and Development	1,000	Q	No
SD (Monthly Supply and Disposition Report)	"	"	U.S. Dept. of Energy (U.S. DOE)	2,500	M	No
SEDS (State Energy Data System)	"	"	U.S. Dept. of Energy (U.S. DOE)	10,000 +	As available	No
UKET (United Kingdom Energy Trends)	"	"	U.K. Dept. of Energy	Tables	M	No

Table 4.1: Databases distributed by L.P. Sharp Associates Ltd. (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
ABSDATA (Australian Bureau of Statistics Database)	S(N)	B&I (Economics)	Australian Bureau of Statistics (ABS)	-	Q	No
AES (Australian Economic Statistics)	"	"	The Reserve Bank of Australia (RBA)	1,200	As data published	No
BIHIST (Business Historical International Data)	"	"	Business International Corporation, USA	14,000 +	A	No
CANSIM (Mini Base and Supplement)	"	"	Statistics Canada	60,000	D	No
COMERT2 (Australian Sector Cash Flow)	"	"	Comert Business Economists Ltd., Sydney	-	Q	No
DRI CAP (DRI Capsule, replaces NBER Database)	"	"	Data Resources Inc., USA	3,800	M	No
IFS (International Financial Statistics)	"	"	International Monetary Fund (IMF)	28,000	M	No
IOA (Australian Input-Output Database)	"	"	Australian Bureau of Statistics	27 I/O Tables	As available	No
NPAECO (National Planning Associates Economic Data)	"	"	National Planning Association, USA	200,000 +	A	No
OECD (Main Economic Indicators, QNA, ANA)	"	"	Div. of Statistics, Economic and National Accounts, OECD	-	M	No
UKCSO (U.K. Central Statistical Office)	"	"	U.K. Central Statistical Office (UKCSO)	2,000	M	No
USCPI (U.S. Consumer Price Index-disaggregated)	"	"	U.S. Bureau of Labour Statistics (BLS)	8,700	M	No

Table 4.1: Databases distributed by L.P. Sharp Associates Ltd. (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
USPPI (U.S. Producer Price Index - disaggregated)	S(N)	B&I (Economics)	U.S. Bureau of Labour Statistics (BLS)	5,200	M	No
WDEBT (World Bank Debt Tables)	"	"	International Bank for Reconstruction and Development (IBRD)	1,050	A	No
AGDATA (Agricultural Commodities)	"	B&I (Finance)	Alberta Agriculture, Economic Services Division	-	W	No
ARATE (Australian Bank Bill Rates)	"	"	Australian Merchant Bankers Association	-	D	No
ASE (Australian Stock Exchange Indices)	"	"	Sydney Stock Exchange (Association of Australian Stock Exchanges)	-	D	No
AUSTCOM (Australian Commodities)	"	"	International Commodities Clearing House	-	D	No
CANOPT (Canadian Stock Options)	"	"	Toronto Stock Exchange (TSE)	-	D	No
CBOND (Canadian Bond Market)	"	"	Wood Gundy Ltd., Toronto	6,000 +, Facts	W (Fridays)	No
COMERT1 (Australian Financial Database)	"	"	ABS, RBA	-	M	No
COMERT2 (Australian Funds Market)	"	"	Comert Business Economists Ltd., Sydney	-	A	Subs. regd.
COMMBOND (Commonwealth Bond Index)	"	"	Commonwealth Bank, Sydney	70	W (Fridays)	No
COMMOD (Commodities Traded on Futures Markets)	"	"	Eurocharts Ltd.	-	D	No

Table 4.1: Databases distributed by L.P. Sharp Associates Ltd. (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
CURRENCY (Currency Exchange Rates)	S(N)	B&I (Finance)	°Bank of England (London) °Bank of Nova Scotia (Toronto) °Federal Reserve System (New York) °Creditanstalt - Bankverien (Vienna) °Swiss Bank Corp. (Zurich) °Australian and New Zealand Bank Group (Melbourne) °La Bourse de Paris (Paris) °Deutsche Bundesbank (Frankfort) °Den Danske Bank (Copenhagen)	-	D	No
EXSTAT (Exstat Corporate Database)	"	"	Extel Statistical Services Ltd., U.K.	-	M	U.S. \$2000/ year
FPCORP (Financial Post Canadian Corporate Database - 470 companies)	"	"	Financial Post, Investment Databank	80,000 +	As available	No
FPSTOCK (Financial Post Securities)	"	"	Financial Post, Investment Databank	-	D	No
MBANK (Canadian Chartered Banks, Monthly Assets, Liabilities)	"	"	Dept. of Finance/ Canada Gazette, from reports by chartered banks	-	M	No
MRATE (Money Market Rates)	"	"	°Financial Times (London) °Globe and Mail (Toronto) °Wall Street Journal (New York)	-	D	No

Table 4.1: Databases distributed by L.P. Sharp Associates Ltd. (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
QBANK (Canadian Chartered Banks, Quarterly)	S(N)	B&I (Finance)	Canadian Chartered Banks, quarterly statements	-	Q	No
STATEX (Sydney Stock Exchange Statex Service)	"	"	Sydney Stock Exchange Research Dept.	35,000 +	Q	No
TSE300 (TSE 300 Composite Index)	"	"	Toronto Stock Exchange (TSE)	8,600	D	No
USOPT (U.S. Stock Options, daily trading statistics)	"	"	All major U.S. Stock Exchanges	-	D	No
WBANK (Bank of Canada Weekly Financial Statistics)	"	"	Bank of Canada	215	W	No
YBANK (Canadian Chartered Banks, Annual)	"	"	Canadian Chartered Banks, Annual Reports	500 +	A	No
ACT (Actuarial Database, Primitive Mortality Information)	"	B&I (Insurance)	I.P. Sharp, from published actuarial tables	Tables	At users' request	No
CDI (Cdn. Dept. of Insurance, financial information on 660+ federally registered insurance and trust companies)	"	"	Dept. of Insurance ("The Blue Book")	-	A	No
APLLIB (APL Bibliography)	R(B)	S&T (Computers)	I.P. Sharp	-	As required	No
NEELS (National Emergency Equipment Locator System)	R(R)	S&T (Environment)	I.P. Sharp, under direction of DOE, MOT and Petroleum Association for Conservation of the Canadian Environment	-	As required	No

Table 4.2: Databases distributed by Data Resources, Inc. (DRI)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
AGRICULTURE	S (N)	B&I (Agri-culture)	DRI	-	C	Subs. to DRI + Database
BALANCE OF PAYMENTS	"	B&I (Fin.-Int)	International Monetary Fund (IMF)	43,000 +	M	"
BEST EXECUTIVE DATA	"	B&I (In-surance)	A.M. Best Co.	1,900 Insurers	A	Subs. to DRI + BEST
CALIFORNIA DATABANK	"	B&I (Econ - U.S.)	Security Pacific National Bank (SPNB)	35,000 +	D	\$4000/year to SPNB
CANADA (includes Mini CANSIM)	"	B&I (Econ - Can)	DRI and Statcan CANSIM Division	25,000 +	D	Subs. to DRI + Database
CANADIAN INSURANCE	"	B&I (In-surance)	DRI and Statcan	3,000	C	Subs. to Ins. Service
CANSIM (MINI BASE)	"	B&I (Econ - Can)	Statistics Canada CANSIM Division	20,000	D	-
CHEMICAL DATA BANKS	"	B&I (Chem-icals)	DRI		C	Subs. to Chem. Service
COAL DATA BANKS	"	B&I (Energy)	U.S. Department of Energy (US DOE)	4,000	C	Subs. to Coal Service
COAL MODEL DATA BANKS	"	"	DRI - coal model estimates/forecasts	300 +	C	Subs. to DRI Coal Service
COMMODITIES MARKET DATA BANK	"	B&I (Commod)	DRI	18,000 +	D	Avail. to all DRI subs.

Table 4.2: Databases distributed by Data Resources, Inc. (DRI) (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
COMPUSTAT (covers U.S. and Canada)	S(N)	F&I (Finance)	Standard and Poor's Compustat Services Inc.	6,000 companies	W	Subs. to S&P reqd.
CONFERENCE BOARD	"	B&I (Econ. U.S.)	The Conference Board, Inc.			\$450-600/year to CB
CONSUMER EXPENDITURE SURVEY (1972-73)	"	"	U.S. Census Bureau (for Dept. of Labour)	Survey of 40,000	-	Subs. to DRI
COST FORECASTING DATA BANKS	"	"	DRI	-	C	Subs to DRI CFS reqd.
CURRENT POPULATION SURVEY	"	SS&H (Demog.)	U.S. Census Bureau	-	A	-
DEVELOPING COUNTRIES PRIMARY SOURCE DATA BANK	"	B&I (Econ. Int.)	DRI (main economic indicators)	-	C	Subs. to DRI + Database
DIRECTION OF TRADE DATA BANK (160 countries)	"	B&I (Trade Int.)	International Monetary Fund (IMF)	52,000 +	M	Subs. to DRI + Database
DRI INDUSTRY FINANCIAL SERVICE DATA BANK (DRIFS)	"	B&I (Fin. U.S.)	DRI	81 industries, 600 companies	C	Subs. to DRIFS reqd.
DRI-CEI (Current Economic Indicators for 20 countries)	"	B&I (Econ. Int.)	DRI (10-20 key economic indicators/country)	-	D,M	-
DRI - FACS (U.S. Financial Statistics)	"	B&I (Fin. U.S.)	DRI (from Federal Reserve and Treasury releases)	-	D	Subs. to DRI FACS reqd.
DRI - SEC (Securities Data Bank)	"	B&I (Securities)	DRI and Telstat Systems Inc.	-	D	Subs. to DRI reqd.
EAST ASIAN DATA BANK	"	B&I (Econ. Int.)	DRI	3,000	C	Subs. to DRI + Database

Table 4.2: Databases distributed by Data Resources, Inc. (DRI) (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
EML/DIADEM (Databases/ Models for auto industry, energy)	S(N)	B&I (Auto, Energy)	Economic Models Ltd.	-	C	Subs. reqd.
ENERGY DATA BANK	"	B&I (Energy)	DRI	22,000	C	Subs. to DRI + Database
EUROPEAN NATIONAL SOURCE DATA BANK	"	B&I (Econ. - Int.)	DRI, INSEE, IFO, CSO (U.K.)	-	C	"
FIEI (Farm and Industrial Equipment Institute)	"	B&I (Equip- ment)	Farm and Industrial Equipment Institute	-	C	Subs. to DRI, membership
FLOW OF FUNDS	"	B&I (Fin. - U.S.)	Federal Reserve Board (FRB)	3,600, 50 sectors	Q	-
FORESTRY DATA BANKS	"	B&I (For. Prod.)	DRI, from BLS and Product Associations	-	C	Subs. to DRI FBS reqd.
IFS (International Financial Statistics)	"	B&I (Fin. - Int.)	International Monetary Fund (IMF)	17,000 +	M	-
INSURANCE SERVICE DATA BANK	"	B&I (In- surance)	DRI	-	C	Subs. to DRI Ins. Service
INTERNATIONAL TRADE INFORMATION (ITIS)	"	B&I (Trade - Int.)	DRI and OECD (Trade Statistics for OECD members)	2,000,000 +	A	Subs. to DRI ITIS reqd.
LATIN AMERICAN DATA BANK	"	B&I (Econ. - Int.)	DRI, from official sources in selected countries	-	C	Subs. to DRI reqd.
NEW YORK CITY MODEL DATA BANK	"	B&I (Econ. - U.S.)	DRI	-	C	Subs. to DRI NYMAS reqd.

Table 4.2: Databases distributed by Data Resources, Inc. (DRI) (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/Subscrip.
NIKKEI ECONOMIC STATISTICS	S(N)	B&I (Econ. - Japan)	NIKKEI (Nihon Keizai Shinbun)	6,000 +	M	Subs. to DRI in N.A.
NIKKEI ENERGY DATA BANK	"	B&I (Energy)	" "	2,400	M	"
OECD INTERNATIONAL (MEI, QNA, ANA, IF, etc.)	"	B&I (Econ. Trade)	OECD	15,000; 25 countries	C	Subs. to DRI reqd.
OIL AND GAS DRILLING DATA BANKS	"	B&I (Energy)	DRI	4,500	C	Subs. to DRI OGDs reqd.
PAPER AND PULP DATA BANKS	"	B&I (Pulp & Paper)	DRI	5,000	C	Subs. to P&PS reqd.
PLATT'S DATA BANK	"	B&I (Energy)	McGraw-Hill Inc.	-	C	Subs. to DRI and Platts
SITE II	"	SS&H (Dem. - Pop.)	CACI Inc., based on 1980 U.S. Census	60,000 Tracts/Div.	A	Royalty Surcharge
SITE POTENTIAL	"	B&I (Econ. - U.S.)	CACI Inc., from Census Bureau Data	-	A	-
SMRB (Simmons Market Research Bureau)	"	B&I (Cons., Mktg.)	Simmons Market Research Bureau Inc.	2 databases (SMM, STARS)	A, 3A	Subs. to SMRB reqd.
STANDARD & POOR'S INDUSTRY FINANCIAL DATA BANK	"	B&I (Fin. - U.S.)	Research Bureau Inc. DRI and S&P	1,800 +; 100 industry groups	C	Subs. to DRI and S&P publications
STEEL DATA BANKS	"	B&I (Steel)	DRI	-	C	Subs. to DRI Steel Service

Table 4.2: Databases distributed by Data Resources, Inc. (DRI) (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
SUMMARY DODGE CONSTRUCTION POTENTIALS	S(N)	B&I (Const.)	McGraw-Hill Information Systems Co. F.W. Dodge Div.	200 + types projects	D	Subs. to DRI CAS reqd.
TARGET GROUP INDEX	"	B&I (Const., Mktg)	Simmons Market Research Bureau Inc.	3 Market Research DBS	D	Subs. to SMRB reqd.
TRANSPORTATION	"	B&I (Trans- port)	DRI	-	C	Subs. to DRI Trans- port Serv.
TRANSPORTATION COST SERVICE (TCS)	"	B&I (Trans- port)	A.T. Kearney Inc.	-	Q	Subs. to DRI reqd.
U.S. CENTRAL	"	B&I (Econ. - U.S.)	DRI from BEA, CB, BLS, FRB, etc. data	-	C	"
U.S. COUNTY	"	"	DRI, using BEA data	200,000 +	A	Subs. to DRI and Database
U.S. MODEL DATA BANK	"	"	DRI, using data from govt. agencies	1,100	C	Subs. to DRI USMS reqd.
U.S. PRICES DATA BANK	"	"	DRI and BLS	17,200	M	Subs. to DRI reqd.
U.S. REGIONAL	"	"	DRI, from Federal and State Agencies	42,000	C	Subs. to DRI and Database
UCLA BUSINESS FORECASTING PROJECT DATABASES	"	"	UCLA, Bus. Forecast- ing Project, School of Management	120	Q	Subs. to CSES reqd.
VALUE LINE (major companies on NYSE, AMEX)	"	B&I (Fin. - Corp.)	Arnold Bernhard and Co., (Value Line Data Services)	400,000 +	C (Q,A)	\$5500 subs. or 8% surch.
WORLD DEBT TABLES (Public Debt, 97 countries)	"	B&I (Fin. - Int.)	DRI for DRI, from World Bank Data	-	C	Subs. to DRI and Database

Notes: Subject to the appropriate conditions, the above databases are available to Canadian users through DRI Canada Ltd.

Table 4.3: Databases distributed by
General Electric Information Services Company (GEISCO)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
AQA	S(P)	S&T (Chemis- try)	Institution of Chemical Engineers, U.K.	-	A	-
BI/DATA (Int. Time Series, covers 131 countries)	S(N)	B&I (Econ. - Int.)	Business Inter- national Corporation (BI)	20,000 +	D, as available	\$480/year
CITIBASE (Economic Database)	"	B&I (Econ. - U.S.)	Citibank, Citibase Economic Database	4,200 +	D, M	\$115 + \$100-130/ month
COMMODITIES FUTURES	"	B&I (Commod)	Market Data Systems Inc.		D	-
CONSUMER PROSPECTUS	S(T)	B&I (Con- sumers)	The Futures Group	100 + Consumer indicators	M, A	\$11,000/yr to FG
CURRENCY EXCHANGE DATA BASE (56 countries)	S(N)	B&I (Curr. Rates)	International Marine Banking Co. and IMF	-	D (Twice)	-
DWIGHT'S ENERGYDATA OIL AND GAS PRODUCTION	S(T)	B&I (Energy)	Dwights Energydata Inc.	400,000 gas wells/oil leases	Q	Subs. to DE reqd.
E.H. BOECKH COMPUTER- IZED BUILDING COST ESTIMATING	S(N)	B&I (Con- struc- tion)	E.H. Boeckh Co. (Covers U.S., Canada)	-	M	-
EMIS (Electronic Materials Information Service)	S (T, P)	S&T (Chem, Elect)	Institution of Electronic Engineers, U.K.	2 Files	D	-
FAERS (Federal Assistance Programs Retrieval System)	R(R)	M (Fund., Awards)	U.S. Office of Management and Budget (OMB)	1050 programs	M	-
FER (Fast Permit Reports)	S(T)	B&I (Energy)	Petroleum Informa- tion Corporation	-	D	-
FTICDATA	S(N)	B&I (Fin. - Corp.)	GEISCO	496	Q	-

Table 4.3: Databases distributed by
General Electric Information Services Company (GEISCO) (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
INDUSTRIAL BANK OF JAPAN	S(N)	B&I (Fin. - Corp.)	Industrial Bank of Japan, Ltd.	3,500	A	Access surcharge
MARDATA (Maritime Data Network)	S(T)	B&I (Maritime)	Maritime Data Network Ltd.	3 Libraries	D to 60 days	Annual subs. \$1000-4000
MINERALS DATA SYSTEM (MDS)	S(T)	S&T (Earth Sci.)	Univ. of Oklahoma, for U.S. Geological Survey	45,000 +; 96 countries	C	-
NASA STANDARD/ AVAILABLE FLIGHT QUALIFIED EQUIP.	R(R)	S&T (Aero- naut.)	NASA, Standard/ Available Flight Qualified Equip.	-	Irregu- larly	-
NEMA (National Electrical Manufac- turers Association)	S(N)	B&I (E + E)	National Electrical Manufacturers Assoc.	-	Q	Permission from NEMA
NRI/E JAPAN ECONOMIC AND BUSINESS DATA BANK	"	B&I (Econ. - Japan)	Nomura Research Institute (NRI)	3,500	C	\$1500 to NRI
ORR SYSTEM (of Construction Cost Management)	"	B&I (Const.)	Cost System Engineers, Inc.	2,200 projects 45,000 items	Q	\$0.15 per equiv. line item
PDS (Petroleum Data System)	S(T)	B&I (Energy)	Univ. of Oklahoma, for U.S. Geological Survey	80,000 pools and fields	C	-
PETROLEUM ARGUS	S(N)	"	Europ-Oil Prices			\$300 Annu. Subs.
PHARMACEUTICAL PROSPECTUS	S(T)	B&I (Pharm.)	The Ritures Group, and IMS America Ltd.	120 + indicators	Bimonthly	\$11,000 Ann. Subs.
PPDS (Physical Properties Data System)	S(P)	S&T (Chem- istry)	Institution of Chemical Engineers, U.K.	-	-	Access Surcharge
SIC (Business Activity by Industry Classification)	S(N)	B&I (Econ. - U.S.)	U.S. Dept. of Commerce	5,000	Discon- tinued	-

Table 4.3: Databases distributed by
General Electric Information Services Company (GEISCO) (Continued)

Database Name	Type	Subject	Information Producer/Source	Approx. No. of Time Series	Update Frequency	Surcharge/ Subscrip.
SIC72	S(N)	B&I (Econ. - U.S.)	U.S. Dept. of Commerce	5,000	Discon- tinued	-
SITE II	"	SS&H (Dem. + Pop.)	CACI Inc., based on 1980 U.S. Census	60,000 Tracts/Div.	A	Royalty surcharge
SITE POTENTIAL	"	B&I (Econ. - U.S.)	CACI Inc., from Census Bureau Data	-	A	-
STASID (Oil + Gas Exploration/production stats.)	"	B&I (Energy)	S.N. Elf Aquitaine	250 countries/ regions	A	-
TELSAT (Securities and Municipal Bonds)	"	B&I (Secu- rities)	Telstat Systems Inc.	30,000 sec; 1.5m bonds	D to M	?
UCLA BUSINESS FORECAS- TING PROJECT DATABASES	"	B&I (Econ. - U.S.)	UCLA, Bus. Forecas- ting Project, School of Management	300 +	Q, A	\$950 - \$3,000
VALUE LINE (major companies on NYSE, AMEX)	"	B&I (Fin. - Corp.)	Arnold Benhard & Co. (Value Line Data Services)	400,000 +	C (Q, A)	\$5,500 subs. or 8% surch.

Notes: Subject to the appropriate conditions, the above databases are made available through the Information Services Division of Canadian General Electric to users of the MARK III Service in Canada.

REPORT ON PUBLIC ON-LINE INFORMATION SERVICES

DRAFT

APPENDIX 5

VIDEOTEX (TELIDON) BASED SERVICES

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A. VIDEOTEX SERVICES: CURRENT AND PLANNED

1. Overview

Videotex is still in its infancy in terms of market penetration and service availability. However, it is encouraging, if not surprising, to note the high number of businesses and organizations involved in videotex at this early stage in its development. LINK's International Videotex Directory¹ lists 41 system operators (eg. Bell Canada, Prestel Headquarters, Times-Mirror Videotex Services, Bildschirmtext, Direction Générale des Télécommunications, etc.); 41 manufacturers of terminal equipment (eg. Norpak, Standard Telephone and Cables, Tandy, Dornier System, Intelmatique, etc.); 19 marketing turnkey systems (eg. Infomart, Nippon Electric, Computex); 14 software houses (eg. Bell Northern Research, Langton Information Systems, Logica); 11 umbrella IPs (eg. Infomart, Information Services and Equipment Ltd., Viewdata Corporation of America); 5 trade associations (eg. Videotex Information Service Providers Association of Canada (VISAPAC), Electronic Media Committee/Information Industry Association); 14 consultancies and research (eg. Butler Cox, International Resource Development Inc., Interdiscom Systems Ltd.); and over 800 content providers, which represents a partial rather than a comprehensive list. The growing interest from both the public and private sectors internationally would indicate that the videotex industry is bound to continue to develop. How quickly this development takes place, however, is another matter. A list of current and planned videotex services can be found in Section B of this Appendix.

In Canada, the availability and variety of videotex services is increasing. The Vista, BC Tel, Elie, and Mercury projects are presently offering basic fare for the residential user: news, consumer information, yellow pages, and general information of a local nature. The OECA trial is an educational application of Telidon using broadcast teletext. The Task Force on Service to the Public offers information about federal government departments and agencies on Telidon terminals located in experimental service bureau across the country. Teleglobe Canada is piloting a database supplying Canadian information internationally, called Novatex, which is expected to compete with Prestel International. There are two commercial videotex services in Canada: Grassroots serving the agribusiness community of southern Manitoba and Videopress delivering information and advertising to mall-shoppers in London, Ontario. Project IRIS is a CBC teletext trial scheduled to begin in 1982 in Montreal, Toronto and Calgary. Infomart is planning the Visitor's Guide for Toronto which will make information about the city available in 2,000 public locations. A trend toward more diverse and innovative applications of videotex would appear to be emerging.

The list of Canadian videotex services promises to grow longer in 1982 due to an announcement by Francis Fox that 52 Telidon projects have qualified to receive a total of \$9.5 million in assistance under the Telidon Industry Investment Stimulation Program. Among the proposed applications are those geared towards agricultural and fisheries users, and business users; those offering education and health services, and tourist and entertainment information.

1. Videotex Monitoring Services: LINK Resources Corporation, 1981.

In addition, the CRTC recently decided to permit a two-year trial of commercial services over certain cable networks, enabling Vancouver Cablevision to announce plans for a major trial of a variety of new bi-directional communications services, including teleshopping and telebanking, and Vidéotron to go ahead with its planned videotex experiment, Service d'Information à Domicile (SID). Most of the Telidon trials currently underway in Canada are using telephone transmission lines. Plans by Vancouver Cablevision, and Télécâble Vidéotron for its SID experiment can be expected to add still another dimension to the development of videotex in Canada.

2. Descriptions of Some Representative Examples

Following are brief descriptions of a few representative examples of current and planned videotex services.

VISTA

A total of 491 user terminal locations in Toronto and Cap Rouge, near Quebec City will be tested in 1981 and 1982. Bell Canada is Vista's system operator and transmission is by dedicated telephone circuit. The type of information available includes: news, consumer advice, games, weekly specials, advertising, general information and Teledirect Yellow Pages. Users receive these services free of charge for the duration of the field trial.

GRASSROOTS

A joint undertaking of the Manitoba Telephone System and Infomart, the Grassroots project is a commercial service providing up-to-the-minute specialized information to the agribusiness community of southern Manitoba. The trial started in May 1981 with 50 terminals: one public terminal in each of 25 farming communities, and one in each of 25 private households. The private terminals are rotated every 60 days, after which the user can either choose to pay the subscription or give up the terminal. In October 1981 the Economist reported 350 users with a rate of 15 a month being added. Telidon terminals can be leased from Manitoba Tel for \$47.50 per month and at a rate of \$0.05 per minute to access Grassroots information. IPs are charged \$1. per day per page for storage. The service currently offers information from the following sources: Winnipeg Commodities Exchange, World Weatherwatch, Manitoba Department of Agriculture, Manitoba Cattle Producers, Canadian Grain Commission, Herald Grain, Agriculture Canada, Monsanto, Bank of Montreal, Royal Bank, University of Manitoba, Brandon University, Northern Sales, Cargill Grain, Canadian Wheat Board, and Manitoba Hog Marketing Board.

VISITORS GUIDE

Infomart is scheduled to operate a commercial system of 2,000 Telidon terminals located in public places throughout Toronto beginning in the summer of 1982. The system will provide free public access to current information about places, activities and services in Toronto. IPs will purchase pages on the system. The Ontario Government will allocate up to \$5 million for the \$11 million project, which is expected to be in full commercial operation and supported by the private sector by mid-1983.

INDAX

Cox Cable developed a two-way cable system that permits a sample of its cable subscribers in San Diego to access interactive services like banking and shopping at home, and information retrieval from local and national sources. The HomServe bank transactions are included in the INDAX tier, which replaces the ordinary television converter with a terminal supplied by Oak Industries. Neilsen is conducting the research. INDAX relies on the Source to supply the core of its information retrieval offerings.

DOW JONES NEWS RETRIEVAL SERVICE

Customers are both businesses and consumers in Canada and the U.S., and the service is transmitted by Tymnet, Telenet, and private line distributors. The services include News Data Base, Stock Quote Reporter Service, Historical stock quote reporter, Disclosure Outline (corporate profiles), Media General Financial Database and Money Market Services.

AT&T PLP

CBS will furnish all the information for this trial, and AT&T will supply computer equipment and transmission facilities. The 200 Ridgewood households selected will be provided free access to continually updated local and national news, weather, sports, education entertainment, electronic banking and shopping, as well as local and national advertising. The trial will be conducted in two 3-month phases, each with 100 users.

TELETEL

Three hundred of the total 2,500 users in the 18-month trial will be equipped with a "smart card" containing a 4,000 word memory as an aid to interactive service. The gateway concept employed permits users to access existing third-party databases and almost 200 organizations to contribute to the database. Services include railway timetable information, reservation service, news, electronic mail box, legal information and promotional material.

PRESTEL

The Prestel commercial service in the UK has been in operation for three years and has 13,000 users. It is open to any IPs willing to pay for space on the system. Customers seeking access to the information pay telephone charges, computer usage rates, plus charges levied by IPs. The average running cost for the customer is \$12 per hour. The market has grown in the travel business and for commodity prices. Prestel is used in both homes and businesses. Its services include, for example, Intercom Videotex (continually updated market prices, TOPIC (current information for the professional investor and stock-broker), ABC Travel Guides, and Fintel Company Newsbase.

BILDSCHIRMTEXT

Trials in Berlin and Dusseldorf, now with 3,700 of 6,000 expected users, have been operating since 1980. The monthly subscription rate is \$2.50 plus telephone charges and IP page charges. IPs pay for all their costs of service operations. The Bildschirmtext system uses Prestel technology. The Gateway technology permits, for example, home terminals to link with computers in banks so that users can access their bank statements. The trial is now geared toward the business market but its public service, Bildschirmtext CEPT, will be launched in 1982.

CAPTAINS

Since December 1979 Japan has been running a 1,000-terminal trial in Tokyo of the Captain videotex system, which was designed to accommodate the presentation of Japanese text. A full commercial service is not expected before the end of 1983. The services are geared toward the residential consumer market. There are over 165 IPs including newspapers, advertising agencies, broadcasters, banks, public utilities and research and consulting services. Users pay for connect time and the TV adaptor. IPs pay compiling and editing costs as well as service centre facility rates.

VIDITEL

The Dutch PTT's videotex service is already in commercial operation. It's 4,000 users are charged \$0.10 per minute (half that charge for evening use). IP's must provide 1 terminal for every 50 frames reserved for storage. The system is designed along the same lines as Bildschirmtext. The services being offered are very much like those of Prestel and the publishing business in Holland is heavily involved.

B. VIDEOTEX OPERATIONS

1. COMMERCIAL VIDEOTEX SERVICES

CANADA

<u>Operator</u>	<u>Service</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
Manitoba Tel./ Infomart	Project Grassroots*	May 1981	Manitoba	350+
London Free Press/ Cable Share	Videopress	December 1981	London, Ontario	3**

USA

<u>Operator</u>	<u>Service</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
Dow Jones	News/Retrieval Service*	1977	United States, Canada	27,000
CompuServe	CompuServe Information Service	July 1979	United States	12,000+
Source Telecomputing	The Source	June 1979	United States, Canada, Australia	11,500+
Belo	BISON	July 1981	Dallas, TX	77

EUROPE

<u>Operator</u>	<u>Service</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
British Telecom	Prestel*	October 1978	UK	13,000
Telesystems	Videotel	July 1981	France	2,700
	Eurodial	1979	France	100
	Questel	July 1981	France	?
Helsingin Telset Oy	Telset	1978	Helsinki	200+
VNU/TVS	TV	1980	Amsterdam	50
Dutch PTT	Viditel*	August 1981	Netherlands	4,000

* Experiments and services marked with an asterisk are described briefly in the preceding section.

** Terminals.

2. CURRENT VIDEOTEX TRIALS

CANADA

PUBLIC SECTOR

<u>Operator</u>	<u>Experiment</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
Bell Canada/DOC	Project Vista*	May 1981	Toronto/Quebec City	491
New Brunswick Telephone Co.	Project Mercury	April 1981	St. John, N.B.	45
Manitoba Telephone Co.	Project ELIE	October 1981	Elie, Manitoba	150
OECA	Telidon	January 1980	Ontario	55
Task Force on Service to the Public	Telidon Project	April 1981	Canada	30**
Teleglobe Canada	NOVATEX	September 1981	International	19**
BC Tel	Telidon Trial	November 1981	Vancouver	125

USA

PRIVATE SECTOR

<u>Operator</u>	<u>Experiment</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
HomServe/Cox Cable	INDAX*	2nd quarter 1981	San Diego, CA	50
Dow Jones	?	June 1979	Las Colinas, TX	8
First Interstate Bank	Day & Night Video Banking	October 1981	San Fernando Valley, CA	250

PUBLIC SECTOR

Alternate Media Centre/PBS	WETA/AMC Teletext Trial	June 1981	Washington, DC	50
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** Terminals.

EUROPE

PRIVATE SECTOR

<u>Operator</u>	<u>Experiment</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
Swedish Businesses	Datavision	1981	Stockholm	25
Oy Turum Sanomat	Telset	March 1981	Turku, Finland	30
Tampere	Telset	March 1981	Tampere, Finland	70

PUBLIC SECTOR

British Telecom	Prestel International	April 1980	Seven Countries	320
French PTT	Electronic Directory	May 1981	Ile-et-Vilaine	1,200
French PTT	Teletel*	April 1981	Velizy	2,500
Swedish Telecommunications	Datavision	1979	Stolkholm	30
Norwegian Telecoms	Teledata	June 1979	Oslo	60
Deutsche Bundespost	Bildschirmtext*	June 1980	Berlin, Dusseldorf	6,000
Danish PTT	Teledata	January 1982	Denmark	200
Austrian PTT	Bildschirmtext	March 1981	Austria	300
Swiss PTT	Videotex	November 1979	Berne	100-150

OTHER COUNTRIES

PUBLIC SECTOR

<u>Operator</u>	<u>Experiment</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
Japanese PTT	CAPTAINS*	December 1979	Tokyo	1,000
Hong Kong Telephone	Viewdata	Late 1980	Hong Kong	?
? /Infomart	?	Early 1981	Caracas, Venezuela	25

3. PLANNED VIDEOTEX TRIALS

CANADA

<u>Operator</u>	<u>Experiment</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
Télécâble Vidéotron	Project HIS/SID	February 1982	Montreal	250
CBC/DOC	Project IRIS	September 1982	Montreal/ Toronto/ Calgary	750
Infomart	Visitors Guide*	Summer 1982	Toronto	2,000**
SaskTel	Pathfinder	June 1982	Regina	135

USA

PRIVATE SECTOR

<u>Operator</u>	<u>Experiment</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
Frittsco/Infomart	?	Late 1982	San Joaquin CA	300-500
AT&T/CBS	AT&T/PLP*	September 1982	Ridgewood, NJ	200
Times Mirror/Infomart	?	March 1982	Southern California	350
Continental Telephone	ConTelVision	1982	Manassas, VA	100
Citibank	?	1981	New York City	100
Chemical Bank	Project Pronto	?	New York City	200
First Bank System	First hand	mid-1982	North Dakota	250

** Terminals.

EUROPE

PUBLIC SECTOR

<u>Operator</u>	<u>Service</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
French PTT	Electronic Directory	1982	Ile-et-Vilaine	250,000
French Television and Telecommunications Research Centre	Perceval	?	Belgium	?
Swedish PTT	CEPT	Summer 1982	Sweden	300-500
Teletieto Oy	Telset	1981	Finland, Six cities	?
Deutsche Bundespost	Bildschirmtext CEPT*	1982	Ten cities	40,000

OTHER COUNTRIES

PUBLIC SECTOR

<u>Operator</u>	<u>Experiment</u>	<u>Start-Up</u>	<u>Location</u>	<u>Users</u>
TELESP	Antiope	1982	Sao Paulo, Brazil	1,500

REPORT ON PUBLIC ON-LINE INFORMATION SERVICES

APPENDIX 6

INTERNATIONAL REVIEW OF GEOSCIENCE
SOURCE AND REFERENCE DATABASES

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1Copyright Australian Mineral Foundation Inc.; presented to AMF
Seminar 154/81, Glenside, S.A., 30-31 March 1981; to be published,
with permission, in Database (Online, Inc.), June 1982.

Note to Appendix 6

The appendix has been included as a sample of addressing certain transborder data flow related questions on a thematic or subject basis. A study of this type had recently been completed by Dr. C.F. Burk, Jr. of the Canadian Centre for Geoscience Data, Energy, Mines and Resources Canada.

While this study was completed prior to commencement of the work of the Task Force, the information contained there in is still of value to the Report on Public On-Line Information Retrieval Sources. It was possible to generate the Table 6.1.

In the area of on-line data bases in geoscience the U.S. dominates with 57.1% with Canada second at 44.3% and the U.K., third with 11.4% while for other data bases the U.S. also dominates with 48.6% with Canada second at 21.6% and Australia third at 9.5% with France and U.K. tied for fourth at 6.8% each.

The total number of 82 "source" data bases cited in the summary text is based on the fact that a number of entities are actually "systems" instead of single data bases. They are:

<u>Name</u>	<u>Number of databases</u>
MINERALS DATA SYSTEM (MDS) (page 3)	2
NATIONAL COAL RESOURCES DATA SYSTEM (page 5)	2
PETROLEUM DATA SYSTEM (PDS) (page 6)	15
NATIONAL COAL RESOURCES DATA SYSTEM (page 8)	2
Total:	<u>21</u>

There are thus 17 (21-4) more source data bases than entities appearing in the list.

International Review of Geoscience
Reference Databases

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Canada Centre for Geoscience Data
Ottawa, Canada

SUMMARY

Reference databases differ from the source databases previously described by directing users to sources of information, rather than providing it directly. Most commonly, reference databases describe information recorded in books and other traditional published works (hence they are usually called "bibliographic" databases), but they have also been created to identify a wide range of other information sources such as unpublished reports, records, theses, data collections, imagery and maps, geological materials (e.g. cores and samples), research activities, people - and even other databases. The term "reference database" conveniently embraces all such locator tools.

Because of the general need to control ever-growing volumes of literature and reports, the development of reference databases has proceeded steadily in numerous organizations since the early 60s. Since the basic nature and structure of entities in all reference databases, regardless of subject-matter, is identical or at least similar, there has been more scope and opportunity for developing standards, common data-handling techniques, and the development of networks and common objectives among related organizations, than has been the case for source databases.

Of the 46 public reference databases identified in this review, the largest number (37) in fact deal with literature and/or unpublished reports. Five are international in scope and attempt to cover most or all geoscience disciplines: GEODATABASE (UK), GEOREF (USA), JICIST (Japan), PASCAL (France) and VINITI (USSR). These also can be considered as national databases for the five countries producing them; in addition at least four other countries maintain national geoscience databases, namely AESIS (Australia), GEOSCAN (Canada), GEO-INDEX (Czechoslovakia) and GEOLOGICAL SCIENCE LITERATURE (West Germany). Others deal with geoscience literature and reports for relatively narrow disciplines or topics on a worldwide basis. Examples include: COAL DATA BASE, PETROLEUM ABSTRACTS, ROCK MECHANICS INFORMATION SERVICE and GEOPHYSICAL ABSTRACTS. The remainder are more specialized or restricted in geographic scope.

As with source databases, more attention is being paid to management aspects of development and operation. As one example, a project was initiated in 1977 to upgrade the GEOSCAN database (then called the Canadian Index to Geoscience Data) following a nine-year history of development and operation. The main objectives were to acquire a state-of-the-art software package and to convert the existing database to an international standard. The following major steps were or will be taken:

1. Definition of corporate and system objectives (1977)
2. Determination of user needs in Canada (1978)
3. Determination of system requirements (1979-80)
4. Evaluation of available software packages (1980)
5. Development of an implementation plan (1980)
6. Developing and implementing database conversion specifications (1981)
7. Developing specifications for the database management system (1981)
8. Implementing the new system (1981)
9. Post-implementation review (1982).

Although all steps are important, the third one, "Determination of system requirements" is considered the key to development of an optimal solution. In this case the MINISIS package, developed by the International Development Research Centre, Ottawa, was selected to form the foundation of a new, modern system.

Current Trends

Increasing attention is being paid to coverage - defining and measuring it for individual databases, taking steps to eliminate overlaps and gaps, and working out cooperative agreements among related services. Cooperative programs attempt to improve coverage and data quality and at the same time reduce costs, by avoiding duplication and sharing data of common interest. Good progress at the international level has been achieved in western Europe, led by France and West Germany, and by an agreement between the United States (AGI) and France (CNRS/BRGM). The Canadian (GEOSCAN) and Australian (AESIS) databases are built cooperatively by participating provincial/state, federal and industrial organizations.

As the adoption of standards for reference data (e.g. UNISIST, ISO) increases and flexible data management software and facilities become more widespread, areas of special concern can also be tackled in a cooperative form by the fields concerned, without resorting to the creation of yet another database. Examples of topics of current concern with geoscience input that could be supported by "distributed" databases include energy, occupational health and safety and development regions (e.g. northern Canada).

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International Review of Geoscience
Source Databases

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SUMMARY

Mainly as a consequence of improvements in the performance and accessibility of computer-based information systems and other information technology over the past ten years, a significant volume of observations and measurements from the geosciences is now available as "databases" - structured compilations of processable information accessible through computer-based data management systems. The number of identifiable, public source databases (also called "numeric" or "non-bibliographic" databases) dealing with non-renewable resources, geology, geochemistry and geophysics currently exceeds 82, but in the absence of an authoritative international register or inventory, the total number and overall scope are not known.

The development of source databases within most geoscience organizations has proven to be more difficult and their application less effective than had been forecast by the writer and others during the early 70s; the limiting factors have not been of a technological nature however, but conceptual and managerial. Not least among such factors are the general absence of standards for geoscience data and lack of agreement on just what constitutes "data". I have come to view "data" as a term useful in describing the smallest indivisible elements of information in a defined context; the concept relates to the structure of information, not its meaning. Accordingly, there can be no universal or all-purpose source database; in principle, each of the myriad geoscience activities has its own unique set of data requirements, controlled by context.

Of the ⁶⁵82 source databases identified in this review, 30 deal primarily with aspects of the fossil fuels (petroleum and coal), 18 with metallic and industrial minerals, 13 with geology, 12 with geochemistry and 9 with geophysics. Twenty-seven can be accessed nationally and/or internationally through public online search services. By far the largest number of these databases was created in the United States (56), with others reported from Canada (13), France (5), the United Kingdom (3), Australia (2) and elsewhere (3). Not included in these figures are numerous magnetic tapes, copies of which are available from various public agencies (e.g. Geological Survey of Canada) as "open-file documents", typically containing geochemical or geophysical data.

Reflecting various past managerial difficulties in the development, use and disposition of databases, more attention is now paid to policy and management issues. Corporate objectives, information needs, system requirements, strategic plans, cost controls and evaluation techniques are among the aspects receiving consideration. Increasingly, databases are being viewed within the broader context of the organization's total information resources and managed within the framework of a corporate information resource management (IRM) policy.

A project of the Province of Alberta to develop the Energy Resources Data System (ERDS) illustrates factors to be considered in creating a large, modern database (the ERDS database will include a wide range of data on about 112 000 boreholes drilled for conventional oil and gas, coal and oil sands in Alberta). Foremost among these factors (and some specifics in brackets) are:

1. Time (about 6 years overall)
2. Costs (about Can \$6 million projected)
3. People (staff of 15-20, plus consultants)
4. Objectives (defined for the project and the system)
5. User needs (of petroleum industry and government)
6. System concept (use of existing generalized package)
7. Project management (specific approach employed)
8. Top management support (federal-provincial senior management committee)
9. Project evaluation (independent external audit)
10. User services (standard output products)
11. Database evaluation (user feedback)

Current Trends

By their nature, individual source databases for the geosciences appeal to a limited, specialist audience. However, to improve management efficiency and marketability, databases will tend to become grouped to cover areas of broader interest, as is the case with the PETROLEUM DATA SYSTEM, MINERALS DATA SYSTEM and the NATIONAL COAL RESOURCES DATA SYSTEM (USA). Database activity in the resource areas will continue to increase, with more attention to meeting strategic and management needs, as opposed to providing direct support for science and technology. As the major high-volume users, geophysics and geochemistry will continue to dominate, however more emphasis will be placed on developing techniques for the integration and interpretation of these data by combining them with each other and with other types of geoscience information derived from remote sensing, regional geology and mineral occurrence databases.

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A U S T R A L I A N M I N E R A L F O U N D A T I O N

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GEOSCIENCE NUMERIC AND BIBLIOGRAPHIC DATA

1. List of Geoscience Databases

A. GENERAL GEOSCIENCE DATABASES

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
1. AUSTRALIAN EARTH SCIENCES INFORMATION SYSTEM (AESIS)	Australian Mineral Foundation, Inc.	Australia	Ref.	Yes	Geoscience literature and unpublished documents concerning Australia.	01/117 30
2. COMPREHENSIVE DISSERTATION INDEX (CDI)	University Microfilms International	USA	Ref.	Yes	Includes doctoral and masters theses in the geosciences.	01/1802 02/231
3. GEO-INDEX	Geofond Praha - ODIS	Czechoslovakia	Ref.	?	Includes geoscience literature from Eastern Europe; current status unknown.	15
4. GEOARCHIVE	Geosystems	UK	Ref.	Yes	Worldwide coverage of all aspects of geoscience and mining.	01/559 02/424
5. GEODX	Bureau of Mineral Resources, Geology and Geophysics	Australia	Ref.	No	BMR and Australian publications and records; includes Stratigraphic Index.	30
6. GEODIAL	Alberta Research Council	Canada	Ref.	Yes	Geoscience literature and unpublished documents concerning Alberta.	07/199
7. GEOLOGICAL REFERENCE FILE (GEOREF)	American Geological Institute	USA	Ref.	Yes	Worldwide coverage of geoscience literature; includes theses.	01/34 02/428
8. GEOLOGICAL SCIENCE LITERATURE	Bundesanstalt für Geowissenschaften und Rohstoffe	West Germany	Ref.	No	German-language geoscience literature.	01/576 05/12
9. GEOSCAN	Canada Centre for Geoscience Data	Canada	Ref.	No	Geoscience literature and unpublished documents concerning Canada.	01/229

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
10. JICST: EARTH SCIENCE, MINING AND METALLURGY	Japan Information Center for Science & Technology	Japan	Ref.	Yes	Japanese-language abstracts of world geoscience literature.	01/846 02/599
11. NORTHERN TERRITORY	Northern Territory Dept. Mines and Energy	Australia	Ref.	No	Publications and reports.	30
12. NTIS BIBLIOGRAPHIC DATA FILE	National Technical Information Service	USA	Ref.	Yes	Includes government- sponsored reports and publications on geoscience.	01/1748 02/722
13. OCEANIC ABSTRACTS	Data Courier, Inc.	USA	Ref.	Yes	Includes literature on marine geology, geophysics and geo- chemistry.	01/390 02/778
14. PASCAL-GEODE	Centre de Documentation Scientifique et Technique	France	Ref.	Yes	Worldwide coverage of geoscience literature.	01/505 02/883
15. SADMED	South Australian Dept. Minerals and Energy	Australia	Ref.	No	Publications and reports.	30
16. SMITHSONIAN SCIENCE INFORMATION EXCHANGE (SSIE)	Smithsonian Science Information Exchange, Inc.	USA	Ref.	Yes	Includes coverage of geoscience research and development activities.	01/1304 02/1030
17. TASMANIA	Tasmanian Department of Mines	Australia	Ref.	No	Publications and reports.	30
18. VINITI	All-Union Institute of Scientific and Technical Information	USSR	Ref.	?	Includes Russian- language coverage of geoscience literature.	01/1456

B. MINERALS DATABASES

1. ASSESSMENT REPORT INDEX	British Columbia Mineral Resources Branch	Canada	Ref.	No	Unpublished reports submitted by mineral industry.	16
2. CANMINDEX	Geological Survey of Canada	Canada	Source	No	Basic information and data on selected mineral deposits in Canada.	01/231
3. COMPUTERIZED RESOURCE INFO SPECIALISTS PRGM (CRISP)	US Geological Survey	USA	Source	No	Energy and mineral resource information on selected commodities for certain countries outside US.	11/37

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
4. DUN'S MARKET IDENTIFIERS (DMI)	Dun & Bradstreet, Inc.	USA	Source	No	Includes marketing data on mining establishments.	01/446 05/60
5. INTERNATIONAL NUCLEAR INFORMATION SYSTEM (INIS)	International Atomic Energy Agency	Austria	Ref.	Yes	Includes geoscience reports and literature related to atomic energy.	01/787 06/122
6. INTERNATIONAL PHOSPHATE RESOURCE DATA BASE (IPROB)	US Geological Survey	USA	Source	No	Data on phosphate occurrences, worldwide.	11/51
7. INTERNATIONAL URANIUM GEOLOGY INFO SYSTEM (INTUREGEO)	International Atomic Energy Agency	Austria	Source	No	Basic data on geology and uranium statistics for various regions.	17
8. IRON RESOURCE ASSESSMENT (FE)	US Geological Survey	USA	Source	No	Petrologic, structural and drilling data from northern Michigan.	11/52
9. MAJOR MINES OF THE WORLD (MON)	US Geological Survey	USA	Source	No	Data from Mining Magazine on mines other than coal.	11/53
10. MANIFILE	University of Manitoba	Canada	Source	No	Mineral deposit data for metallogenic research, worldwide.	01/1877 11/59
11. METALLOGENIC STUDIES (CP MIN MAP)	US Geological Survey	USA	Source	No	Mineral deposit data for plotting on small-scale maps.	11/55
12. MINERAL INDUSTRY LOCATION SUBSYSTEM (MILS)	US Bureau Mines	USA	Source	No	Map location data on non-fuel mineral sites.	01/1515
13. MINERAL OCCURRENCE DATA SYSTEM (MODS)	Newfoundland Mineral Development Division	Canada	Source	No	Mineral deposit data for Newfoundland and Labrador.	01/1091
14. MINERALS AVAILABILITY SYSTEM (MAS)	US Bureau Mines	USA	Source	No	Data on US and foreign reserves of 34 mineral commodities and on mining aspects.	01/1515
15. MINERALS DATA SYSTEM (MDS)	US Geological Survey/ Univ of Oklahoma	USA	Source	Yes	Includes CRIB database, covering mineral deposits in US and elsewhere, and Geothermal Sample File (GEOS).	01/1646 11/34
16. MINFILE (formerly MINDEP)	British Columbia Mineral Resources Branch	Canada	Source	No	Mineral deposit data for British Columbia.	18

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
17. MINING TECHNOLOGY (MINTEC)	Canada Centre for Mineral and Energy Technology (CANMET)	Canada	Ref.	Yes	Literature on mining technology and related topics relevant to Canada.	04/69 03/232
18. MINSYS	Mineral Policy Sector	Canada	Ref.	No	Index to National Mineral Inventory (NMI) cardfile.	19
19. MINSYS DATORIUM	Geosystems	UK	Source	Yes	Reference and source data on mining, resources and related topics.	01/559
20. NICKEL/COBALT (NI/CO)	US Geological Survey	USA	Source	No	Data on magnetic sulphide deposits related to IGCP Project 161.	11/58
21. ONTARIO MINERAL DEPOSIT FILE	Ontario Mineral Resources Group	Canada	Source	No	Data on uranium and other metallic deposits in Ontario.	01/1149
22. QUEENSLAND	Queensland Geological Survey	Australia	Ref.	No	Company reports.	30
23. SURFACE MINING AND ENVIRONMENT INFO SYS (SEAMINFO)	University of Arizona	USA	Ref.	No	Information on strip mining in western US.	01/1808
24. TECHNICAL & FIELD SURVEYS	Technical & Field Surveys Pty. Ltd.	Australia	Source	No	Mineral deposit data for Australia.	30
<u>C. FUELS DATABASES</u>						
1. ALBERTA OIL SANDS INDEX (AOSI)	Alberta Research Council	Canada	Ref.	Yes	Technical information on Alberta oil sands and related topics.	01/17 02/34
2. API MASTER WELL FILE	University of Oklahoma	USA	Source	Yes	Petroleum boreholes in USA.	31
3. CENSUS OF COAL MINES	McGraw-Hill, Inc.	USA	Source	Yes	Information on active coal mines and companies in US and Canada.	04/26
4. COAL DATA	Alberta Research Council	Canada	Source	Yes	Proximate and ultimate analyses of Alberta coals.	08/23
5. COAL DATA BANKS	US Department Energy	USA	Source	Yes	Time series on US coal distribution, production and utilization.	04/31
6. COAL DATA BASE	IEA Coal Research	UK	Ref.	Yes	Coal technology, including reserves, exploration and mining.	01/1157

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
7. COAL-ABSTRACTS INDEX (COAL-ABS)	Alberta Research Council	Canada	Ref.	Yes	Literature on coal technology related to Alberta.	08/144
8. COALFILE	British Columbia Mineral Resources Branch	Canada	Source	No	Data on B.C. coal deposits.	20
9. DST-80	McAllister & Associates Ltd.	Canada	Source	No	Drill stem test data for Western Canada petroleum boreholes.	21
10. EASTERN GAS SHALES PROJECT DATA FILE	US Geological Survey	USA	Source	No	Geological, geochemical and physical properties of Devonian shale samples.	11/42
11. ENERGY DATA BASE	Engineering Index, Inc.	USA	Ref.	Yes	Includes engineering aspects of mining, petroleum and fuel technology.	01/464 02/351
12. ENERGY DATA BASE (EDB)	US Department Energy	USA	Ref.	Yes	Includes various files on all aspects of energy; data from INIS and COAL DATA BASE.	01/1583 03/14
13. ENERGY RESOURCES DATA SYSTEM (ERDS)	Alberta Energy Resources Conservation Board	Canada	Source	No	Data on Alberta boreholes drilled for oil, gas, coal and oil sands.	22
14. EXPLORATORY WELL FILE	American Assoc. Petroleum Geologists/ Univ. of Oklahoma	USA	Source	Yes	Petroleum exploration boreholes in USA.	31
15. NATIONAL COAL RESOURCES DATA SYSTEM	US Geological Survey	USA	Source	Yes	Includes databases for coal resource estimates for states east (ECOAL) and west (WCOAL) of Mississippi River.	01/1653 11/48
16. OIL INDEX (OLJE-INDEKS)	Norsk Sentre for Informatikk	Norway	Ref.	Yes	Includes literature on petroleum geology and exploration.	01/1118 02/787
17. PENN STATE COAL DATA BASE	Pennsylvania State University	USA	Source	No	Characteristics of coal seams, including geology, mineralogy and mine information.	01/1177
18. PETROLEUM ABSTRACTS (TULSA)	University of Tulsa	USA	Ref.	Yes	Includes petroleum geology, exploration, geochemistry and geo- physics; references to other mineral commodities.	01/1940 02/888

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
19. PETROLEUM DATA SYSTEM (PDS)	University of Oklahoma	USA	Source	Yes	Includes 15 databases on reserves, analyses, production and lease information concerning US and Canada.	01/1654 04/82
20. SASKATCHEWAN COAL DATA BASE (SASCO)	Saskatchewan Department Mineral Resources	Canada	Source	No	Borehole and related data used for resource assessment.	23
21. WELL HISTORY CONTROL SYSTEM (WHCS)	Petroleum Information Corp.	USA	Source	No	Petroleum borehole data for US.	01/1182 12/1
22. WORLD COAL RESOURCES AND RESERVES DATA BANK	IEA Coal Research	UK	Source	No	Includes geological, geochemical and bibliographic data.	01/1158

D. GEOLOGY DATABASES

1. ASIAN GEOTECHNICAL ENGINEERING (AGE)	Asian Institute of Technology	Thailand	Ref.	No	Technological information related to developing countries in Asia.	01/71
2. BANQUE DES DONNEES DU SOUS-SOL (BSS)	Bureau Recherches Geologiques et Minieres	France	Source	No	Subsurface data on geology, geophysics, hydrology and minerals.	05/45
3. COMPUTERIZED FILE OF GEOLOGIC MAP DATA	US Geological Survey	USA	Ref.	No	Catalogue of availability of geologic map data.	11/33
4. COMPUTERIZED LIBRARY OF ANALYZED IGN RKS (CLAIR)	University of Melbourne	Australia	Source	No	Petrological data on igneous rocks, worldwide.	01/1880 30
5. CORE LIBRARY DATA FILE (CLDF)	US Geological Survey	USA	Source	No	Data on drill cores held by USGS Core Library.	11/38
6. EARTH SCIENCES INFORMATION SYSTEM	Netherlands Soil Survey Institute	Netherlands	Source	No	Data on borehole samples from Dutch subsurface and from soil and geological maps.	01/1072
7. EARTHNET SATELLITE IMAGERY (LEDA)	European Space Agency	Italy	Ref.	Yes	Index of LANDSAT imagery.	02/315 05/45
8. GENERALIZED SAMPLE DATA SYSTEM (GSDS)	US Geological Survey	USA	Source	No	Data on samples related to oil and gas development; linked to Well History Control System.	11/26 13

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
9. GEO ABSTRACTS	Geo Abstracts Ltd.	UK	Ref.	No	Includes literature of sedimentology, remote sensing and cartography.	01/544 10/141
10. GEODAS	Osaka City University	Japan	Source	No	Geological borehole data.	24
11. GEOLOGIC NAMES (GEONAMES)	US Geological Survey	USA	Source	No	Rock-stratigraphic names of the US, in accordance with AAPG standard.	01/1647 11/44
12. IGNEOUS BASE (IGBA)	Carnegie Institution of Washington	USA	Source	No	Petrological data on igneous rocks from world's literature.	12/27
13. IMAGERY DATA BASE FILE	US Geological Survey	USA	Ref.	No	Catalogue and index of remotely-sensed imagery.	01/1644
14. INDEX TO BEDROCK GEOLOGICAL MAPPING	British Columbia Mineral Resources Branch	Canada	Ref.	No	Compilation of geological maps concerning British Columbia.	25
15. INDEX TO GEOLOGIC MAPS (GEOINDEX)	US Geological Survey	USA	Ref.	No	Catalogue and index of geological maps received by USGS Library.	11/50
16. PETROS	Eastern Washington University	USA	Source	No	Petrological data from literature on selected igneous rocks.	12/27
17. RADIOMETRIC AGE DATA BANK (RADB)	US Geological Survey	USA	Source	No	Radiometric ages and supporting data for US and territories.	01/1643 11/67
18. ROCK INFORMATION SYSTEM (RKNFSYS)	Carnegie Institution of Washington	USA	Source	No	Petrologic data for Cenozoic volcanic and associated rocks.	01/260 12/27
19. ROCK MECHANICS INFORMATION SERVICE	Imperial College of Science and Technology	UK	Ref.	No	Literature on rock and soil mechanics and related mining geophysics and geology.	01/1871 02/991
20. US OIL AND GAS ROCK CENSUS (ANOGRE FILE)	US Geological Survey	USA	Source	No	Geologic and stratigraphic data on US formations considered to be host rocks for oil or gas.	11/85
21. WELL CORE LIBRARY FILE (CORE-DATA)	US Geological Survey	USA	Source	No	Basic data on cores stored at USGS Core Library, Denver.	11/86

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
<u>E. GEOCHEMISTRY DATABASES</u>						
1. CHEMICAL ABSTRACTS (CA SEARCH)	American Chemical Society	USA	Ref.	Yes	Includes literature of geochemistry.	01/30 02/140
2. CLAY MINERALOGY ANALYSES (CLAYMI)	US Geological Survey	USA	Source	No	Analyses of clay samples collected at sea.	11/32
3. ENVIRONMENTAL DATA INDEX (ENDEX)	National Oceanographic Data Center	USA	Ref.	Yes	Includes reference to data sets of geochemical and geological nature.	01/1738
4. GEOCHEMICAL ANALYSIS DATA BASE (GEOCHIM 1)	Institut Francais du Petrole	France	Source	No	Analyses on crudes, gases, rocks and oil- field waters.	01/521 05/45
5. GEOCHEMICAL DATA SYSTEM	Saskatchewan Research Council	Canada	Source	No	Analyses and field data.	32
6. GEOGEN	Centre de Recherches Petrographiques et Geochimiques	France	Source	No	Geochemical analyses and supporting descriptive data.	27
7. GRANITES URANIFERES FRANCAIS (GUF)	Centre de Recherches Petrographiques et Geochimiques	France	Source	No	Analyses of French Hercynian granites.	27
8. LEAD ISOTOPE DATA BANK (LIDB)	US Geological Survey	USA	Source	No	Isotopic data for rocks and ores, worldwide.	12/32
9. MARINE RESOURCE DATA BANK	National Geophysical and Solar-Terrestrial Data Center	USA	Source	No	Analyses of manganese nodules, worldwide.	12/28
10. NATIONAL COAL RESOURCES DATA SYSTEM	US Geological Survey	USA	Source	Yes	Includes analyses of coal samples (BMALT); and trace element analyses on coal and related rocks (USCHEM).	01/1653 11/72
11. NATIONAL GEOCHEMICAL DATA BANK (NGDB)	Institute of Geological Sciences	UK	Source	No	Archival storage for public geochemical data produced or analysed in the UK.	01/1056
12. NATIONAL URANIUM RESOURCE EVALUATION PRGM (NURE)	US Department Energy	USA	Ref.	No	Geochemistry and geophysics of uranium.	01/1565 12/28

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
13. ROCK ANALYSIS STORAGE SYSTEM (RASS)	US Geological Survey	USA	Source	No	Analytical geochemical data on rocks and other substances from USGS laboratories.	01/1645 11/69
14. WORLD DATA BANK ON MANGANESE NODULES	Scripps Institution of Oceanography	USA	Source	No	Chemical analyses of manganese nodules, worldwide; includes bibliographic data.	12/28
<u>F. GEOPHYSICS DATABASES</u>						
1. BUREAU GRAVIMETRIQUE INTERNATIONAL (BGI)	Bureau de Recherches Geologiques et Minieres	France	Source	No	Gravity data.	05/45
2. EARTHQUAKE DATA FILE	National Geophysical and Solar-Terrestrial Data Center	USA	Source	No	Worldwide earthquake data, including dates, times, depths of focus, etc.	12/4
3. GEOLOGICAL DATA CENTER DATA BASE	Scripps Institution of Oceanography	USA	Source	No	Includes magnetic and seismic data.	01/1831
4. GEOPHYSICAL ABSTRACTS	Geo Abstracts Ltd.	UK	Ref.	No	Literature of geophysics.	01/544 10/144
5. GEOTHERMAL RESOURCES (GEOTHERM)	US Geological Survey	USA	Source	No	Includes files on geochemical analyses, wells, and geothermal fields and areas.	01/1655 11/45
6. INSPEC	Institution of Electrical Engineers	UK	Ref.	Yes	Includes geophysics, resources and remote sensing.	1/771 2/546
7. MAGNETIC FIELD SURVEY DATA (SOURCE FILE)	Earth Physics Branch	Canada	Source	No	Component observations, primarily from Canada.	28
8. NATIONAL GEOTHERMAL INFORMATION RESOURCE (GRID)	University of California	USA	Ref.	Yes	Literature and reports on geothermal energy.	01/1817 02/706
9. NATIONAL GRAVITY DATA BASE	Earth Physics Branch	Canada	Source	No	Station and gravity anomaly data for Canada.	29
10. SEARCHABLE PHYSICS INFORMATION NOTICES (SPIN)	American Institute of Physics	USA	Ref.	Yes	Includes literature on geophysics.	01/39 02/1016

<u>Name</u>	<u>Organization</u>	<u>Country</u>	<u>Type</u>	<u>Public Online Access</u>	<u>Comments</u>	<u>Refer- ences*</u>
11. SEISMIC DATA ANALYSIS SYSTEM (SEDAS)	US Geological Survey	USA	Source	No	Data from earthquake monitoring stations, worldwide.	11/70
12. VOLCANO DATA FILE	Smithsonian Institution	USA	Source	No	Location, features and activities related to volcanoes, worldwide.	12/21

Compiled by
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Updated 21 April 1981

* First number is directory or other reference shown in 2. List of Database Directories; second number is entity or page number; up to 2 references only shown.

A U S T R A L I A N M I N E R A L F O U N D A T I O N

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GEOSCIENCE NUMERIC AND BIBLIOGRAPHIC DATA

2. List of Database Directories

GENERAL - INTERNATIONAL

1. Encyclopedia of information systems and services. Fourth Edition. A.T. Kruzas and J. Schmittroth, Jr., Editors, Gale Research Co., Detroit, Michigan, USA, ISBN 0-8103-0942-4, 1981, 933p.
2. Computer-readable data bases: a directory and data sourcebook. M.E. Williams et al., Editors, American Society for Information Science, Washington, D.C., USA, ISBN 0-914236-45-8, October 1979, 1,367p.
3. Directory of online information resources. Sixth Edition. A. Levy and J. Kubalak, Editors. CSG Press, Rockville, Maryland, USA, September 1980, 66p.
4. Directory of online databases. Vol. 2, no. 1. R.N. Landau et al., Editors. Cuadra Associates, Inc., Santa Monica, California, USA, Fall 1980, 154p; updated with Vol. 2, no. 2, Winter 1981, 37p.
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PUBLIC ON-LINE INFORMATION RETRIEVAL SERVICES

APPENDIX 8

PRELIMINARY USE INDICATIONS:

SAMPLE OF KEY FEDERAL ORGANIZATIONS

Note to Appendix 8

While the work plan of the Task Force did not include data collection, the almost total dearth of data on usage statistics on public on-line retrieval services created a gap too wide to ignore. The Lawson study cited in the Report based on the post-secondary education sector indicated a 90% reliance by Canadians on U.S. data base services.

In order to obtain some insight into the possible range of offshore dependence, a short survey was undertaken of a number of key federal government agencies who agreed to participate using readily available data.

The results indicate a 62.5% U.S. dependency based on expenditures for 1980/81. Two things should be noted here, namely:

1. That there may be significant variance in usage patterns on a sectorial basis; and,
2. No data is currently available on usage patterns by non-public institution, i.e. business. This is the fastest growing sector.

Table 8.1 On-Line Retrieval Volume and Expenditures of Key
Federal Departmental Libraries (1980/81).

Department <u>Organization</u>	Usage/Volume*	
	<u>No. of Hours</u>	<u>No. of Searches</u>
National Library		1,913
CISTI - Automated Systems	2,994	
- Health Sciences	549	
Resource Centre		
Agriculture	537	2,800
Communications		286
Environment Canada	160	
Health and Welfare	286	
Library of Parliament		2,012
Statistics Canada	<u>53</u>	<u> </u>
	4,615	4,031
Total Expenditures	\$225,056	

*Some reported usage in number of hours, others by number of
searchers.

Table 8.2 Usage of Leading Data Base Venders by Key Federal Libraries (1980/81)*

<u>U.S. Data Base Vendors</u>	<u>Total Expenditure</u>	<u>Share of Total</u>
DIALOG	91,545	(40.68%)
SDC/Infomart	19,079	(8.48%)
BRS	944	(0.42%)
NYT	3,637	(1.62%)
NLM/Medlars (via CISTI)	<u>25,401</u>	<u>(11.29%)</u>
Total	<u>\$140,606</u>	<u>62.5%</u>
 <u>Canadian Data Base Vendors</u>		
CAN/OLE	56,568	(25.14%)
QL	11,533	(5.12%)
Informatech	1,528	(0.68%)
Infoglobe	<u>9,869</u>	<u>(4.39%)</u>
Total	<u>\$79,499</u>	<u>35.3%</u>

* Based on those noted in Table 8.1

REPORT ON PUBLIC ON-LINE INFORMATION SERVICES

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APPENDIX 9

LIST OF ORGANIZATIONS CONTACTED

During the course of this study, contacts were made with many of the main Canadian producers and vendors of online databases, to obtain information regarding usage volumes, costs and trends. Table 9.1 contains a list of government agencies and private firms who were approached. Representatives from CISTI, the National Library and the Public Archives of Canada participated in the work of the project team.

Contacts with producers and vendors gave some preliminary information on the supply side of the Canadian public information services industry, but the gap on the demand side remained. As stated earlier, the time constraints imposed by the Task Force's short term work program, as well as resource constraints, ruled out the possibility of a proper survey of end users at this stage. As a preliminary measure, the chief librarians of certain key federal departments and organizations were contacted, in an attempt to collect some rudimentary yet basic statistics regarding the use of reference and source textual databases. The list of organizations contacted is given in Table 9.2, which also summarizes their basic usage statistics for Fiscal Year 1980/81.

Interviews with the MNEs will include questions on their internal use of online databases, both for transaction processing and information retrieval. The magnitude of such intra-corporate use may far exceed current open market use of public information services, but very little is known of such use.

The quantitative assessments and projections of the Canadian market made in the draft final report were informally exposed to the principal Canadian vendors for comments, in order to ascertain whether they are regarded as realistic.

Table 9.1: List of Canadian Online Database Producers and Vendors contacted

Type of Institution	Name of Organization	Function	Description of Activities
Government Agency	Statistics Canada -CANSIM -Telidon Task Force	Producer	Produces, maintains and distributes CANSIM, the largest socio-economic database in Canada.
	CISTI, National Research Council	Vendor	Largest Canadian vendor of reference databases; CAN/OLE and CAN/SDI services.
	National Library	User	One of the largest users of computer-based reference services.
Private Firm	Datacrown Ltd.	Vendor	Currently host service bureau for the CANSIM Main Base (Time Series and Cross-classified Modules).
	I.P. Sharp Associates	Vendor	Largest Canadian vendor of public source numeric databases, operates internationally.
	QL Systems Limited	Vendor	QL/Search system provides access to both reference and source (full text) databases.
	Infomart	Producer and Vendor	Prime promoter and international marketing agent for Telidon technology; major information provider to Telidon; distributor in Canada of the SDC/Orbit search service.
	Info Globe Ltd.	Producer and Vendor	Operates the Globe and Mail information retrieval service.
	Informatech	Vendor	Major vendor for French language databases.
	Micromedia Limited	Vendor	Provides technical support and training for Dialog users in Canada

Table 9.2: List of Key Federal Government Librarians invited to the Public Information Services meeting on 16.12.81

Department/ Organization	Group/Function	Type of User	Comments
National Library	Chief, Computer Based Reference Service		
CISTI, National Research Council	°Coordinator, Automated Systems °Librarian, Health Sciences Resource Centre		
Agriculture Canada	Assistant Director, Information Services		
Canada Employment and Immigration	SDI Librarian		
Communications	Head, Reference Services		
Environment Canada	SDI Librarian		
Finance and Treasury Board	Chief Librarian		
Health and Welfare	Chief Librarian		
I.D.R.C.	Deputy Librarian		
Library of Parliament	Head, Computer Based Reference Service		
Statistics Canada	Chief Librarian		

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