

Telidon : the information providers

by Marie Kurchak

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TELIDON: THE INFORMATION PROVIDERS



A report prepared for the
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Preface

This report was prepared from information collected during April 1980 about the videotex field trials to be conducted in Canada within the next few years. The report stems from a small research contract funded by the Federal Department of Communications (DOC).

The results of this research are being made available to provide interested parties with overviews of information provider activities in Telidon field trials. Chapter 1 describes the general context within which the field trials are taking place. Chapters 2 to 5 delineate the various aspects of the trials and the role of information provider (IP) organizations. Chapter 6 outlines the researchers' conclusions on the Canadian videotex experience to date. The study as a whole attempts to determine who is emerging in Canada as a videotex Information Provider and to assess the current costs and constraints associated with this new role. Since the research was commissioned by the DOC Broadcasting and Social Policy Branch, there was a secondary agenda -- to speculate on some organizational or social impacts of this new technology, and underline any clues to the future nature of the medium. A particular interest was whether costs and constraints might inhibit small or non-profit organizations from participating.

Some warning regarding the descriptive aspects of the report must be issued. IPs and field trial operators are at different stages with respect to the diffusion of this new technology, though most are at a level which can be described as embryonic. Much of the technology and many of its applications exist only potentially or at a conceptual level. Many field trial operators have also not yet enunciated clear policy on many issues.

In short, all of the variables are in a state of flux. Information on field trial operator policy, their commitments to field trials, the number of user terminals, resource allocations from funding bodies and formats can change rapidly. One respondent described it as "trying to grasp an amoeba". Thus, this report should be viewed as only a status report, as of June 1980.

Many frustrations expressed by IPs with respect to the technology will be temporary as new generations of equipment are introduced. At times, one IP is indignant about what another will regard as a learning experience. As one IP put it, "By the time the system has stabilized and the technology is more flexible, we will only have begun to understand the nature of the medium and how to use it."

Especially for a large videotex broker such as Informart, there is a great deal at stake in terms of investment and reputation. The success of the field trials will depend upon the "synergy" (the mutually positive effects) among the different types of information provided. If IPs' needs are disregarded, many will become permanently discouraged. Some IPs believe field trial operators are interested only in testing the technology and argue that, if enough thinking isn't done about content, then permanent precedents may be set.

Concerns about confidentiality posed some difficulty in preparation of this study. In some cases, field trial operators were reluctant to divulge the names of Information Providers whom they have approached or who have approached them. This attitude contrasts with an approach taken by certain operators abroad, who make efforts to publicize IPs attracted. (In the Teletel videotex experiment to be conducted in Velizy, France, 50 companies and groups signed agreements with the Direction Générale des Télécommunications to make their general activities public. Similarly, Viewdata Corp. of America, a subsidiary of Knight-Ridder Newspapers, named a total of 22 IPs recruited for their interactive videotex experiment "Viewtron"). Brokers (those who prepare content and manage databases for others) may also withhold who their clients are or exactly what kinds of information they are putting up, because of the proprietary nature of the information. Confidentiality in this context may protect the individual IP's marketing strategy and is obviously justified. However, some field trial operators seemed to exhibit proprietary behavior with respect to IPs themselves -- OECA (Ontario Educational Communications Authority), for example, preferred that its IPs not be interviewed, viewing the research as "premature" and a possible source of pressure on the IPs. The IPs themselves were considerably more open; only two asked that their ideas not be presented in a public report.

Despite these caveats, this report can provide a fairly comprehensive picture of IP activity in Canada as of June 1980, and analyzes some implications of this new technology. Interviews were conducted with 37 IPs and potential IPs, 16 field trial representatives, and the executive director of the Videotex Information Service Providers Association of Canada (VISPA). Table 1 lists the field trial operators and IPs, while Table 3 lists the IPs by the non-videotex functions of the organization. Table 2 shows field trial status (June 1980).

Finally, the author wishes to acknowledge the important substantive contributions of Teresa Plowright of the Department of Communications to the preparation of this report.

March 1981

Chapter 1

SETTING THE FRAMEWORK

For the last two years, videotex has attracted keen interest in Canada, especially in the Department of Communications (DOC) in Ottawa. Indeed, the Department's Communications Research Centre (CRC) developed the technology used in Telidon, the Canadian version of videotex.

The potential uses for such two-way interactive information services are often described as limitless and for this reason, it may be more difficult for Canadians to decide which uses to explore and develop further. Because this technology is in its early developmental stages in several industrial countries and each country is seeking to sell its own version in foreign markets, Canada has a strong economic incentive to develop Telidon technology and applications as quickly as possible. A number of field trials using Telidon technology are now being initiated in different parts of Canada.

In most field trials, the carriers of experimental videotex information services are major telephone companies. In a few others, a broadcaster or cable TV company provides the transmission facilities. A carrier, however, is not usually responsible for providing the information available to households or businesses except in the case of broadcasters. Telephone companies, in particular, have traditionally kept free of involvement in content selection and have concentrated on the technical quality of signal delivery.

In Canada, those involved in information selection and preparation for videotex are known as Information Providers or IPs. Organizations can be business entities or public service, non-profit organizations. At the present stage of development, the IPs who wish to participate in the field trials are not numerous and it is difficult to predict either the types of organizations which will become most heavily involved in the future, or the types of information which will be most commonly provided on commercial videotex systems.

Videotex

"Videotex" is a term which requires definition at the outset, not only because it refers to a new and perhaps unfamiliar innovation, but also because its meaning can differ. John Madden, writing for the Department of Communications on "Videotex in Canada", defines "videotex" as information retrieval with five criteria:

- 1) the source of the information is remote from the user;
- 2) there is a telecommunications link from the user to the source;
- 3) the information display is, normally, a standard TV set;
- 4) the information appears at the express command of the user, as part of a larger selection made available by information providers; ✓
- 5) the service is designed for the mass market (rather than for a few specialized users).*

The last point deserves some comment. By it, "videotex" refers to services to be made generally available and offered to the public (probably under certain commercial conditions). This is distinct from current database services, such as Lockheed's Dialog Files containing scientific and technical abstracts, to which specialized audiences subscribe. Examples of videotex information are airline and other travel information, news, weather, sports, stocks, health information, consumer information, store prices for merchandise and other advertising, and information on specialized interests such as hobbies. There is also "Closed User Group" (CUG) videotex, whereby access to databases is restricted to certain parties, who would perhaps use a keyword restricting others from using its contents. An example would be legal information for use only by lawyers who joined the CUG, or travel information only for travel agencies who were CUG members.

* Madden, John, Videotex in Canada, (Ottawa: Dept. of Communications, 1979), p.3.

An information marketplace idea has emerged around videotex technology, of easily accessible information in which pages could be individually priced, updated, leased to a third party and created in small or large amounts. The British Post Office pioneered this concept. When a common carrier is the data base operator, theoretically anyone can become an "electronic publisher", and put information onto the system, in a form that can be more flexible and less expensive than hard copy publishing.

However, there is no necessary connection between videotex and the common carrier principle of open access for content input. Private corporations can and do run videotex systems. Viewtron, the interactive system operated by the Viewdata Corp, of America (connected with the Knight-Ridder newspaper organization), has been highly selective about which corporations or "advertisers" become Information Providers in its trial.

An ideal that has built up around videotex, though not always subscribed to by large umbrella IPs, involves the perfect transparency of the system to the user, no matter how many data bases or host computers storing IP data are employed. When the user punches a number or letter on a keypad, an index or "menu" appears with the number 0 to 9. The index could be a selection of categories such as "games", or "consumer", "government", "restaurant" or "travel" information. The user chooses a category and is led to another index until he gets the desired information. The name for this approach to Information Retrieval is "tree structure". (Other search methods, such as "keyword" searches, are possible, but are not currently available with Telidon or many videotex systems). The user may be connected to any number of computers or data bases by a gateway computer containing a master index, and the process of moving through the tree is automatic. The user need never be concerned about which computer or data base he is accessing. (See Tables 4 and 5 for typical videotex configurations.)

At each step in his search through the "tree", the user will see the page on his TV screen. It could be an index page, a directory page, graphics, text that is original or previously published and then adapted information, and so on.

Videotex and Canada also points out that, besides the information retrieval function defined above, the definition of videotex will expand to include new functions such as banking, bill paying, teleshopping, electronic mail, opinion polling, and telesoftware (--transferring software, such as programs for games or common tasks like tax calculations, for use at the home terminal). These developments are already occurring, and "videotex" is used generally here to include three basic classes of service:

- 1) information retrieval;
- 2) "transactions", which involves a transfer of funds, such as electronic banking, or teleshopping; ✓
- 3) point-to-point messages, or electronic mail.

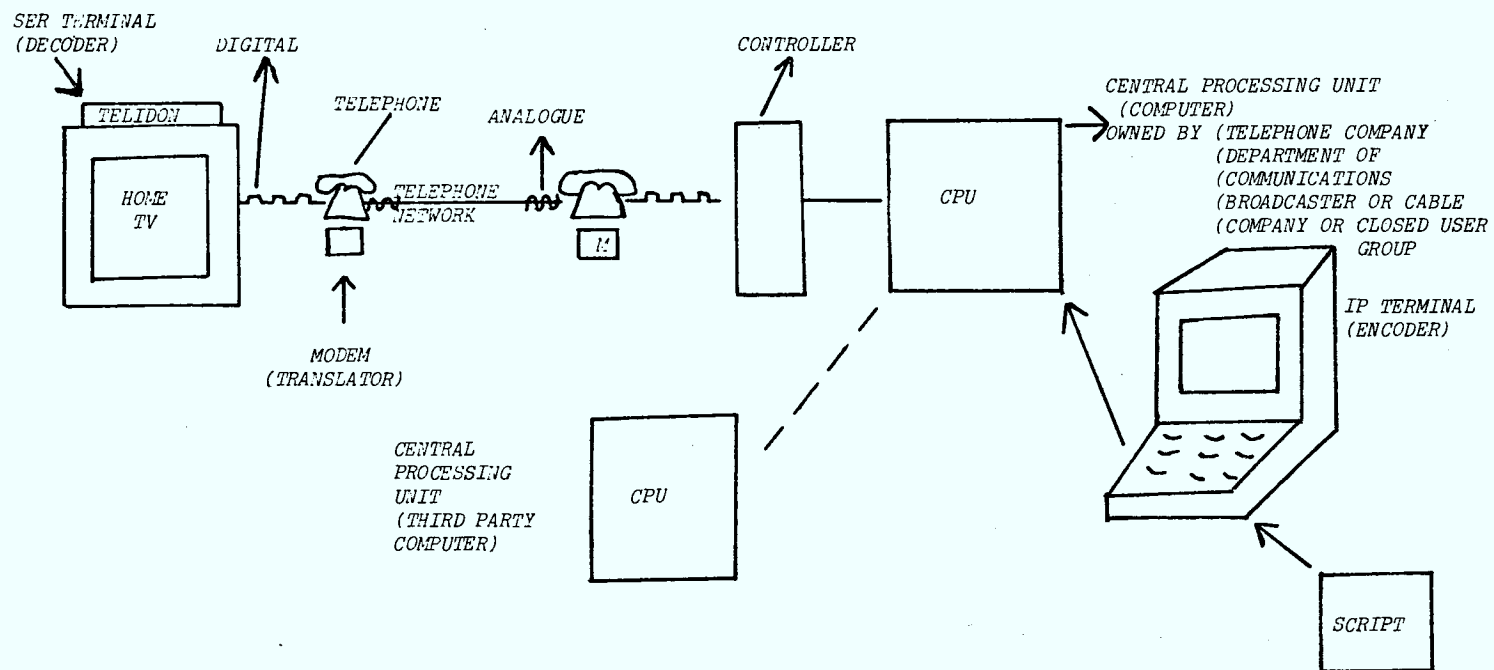
The latter necessitates both the use of a keyboard, and a telecommunications capacity to "switch" messages from any user to any other user (as the telephone system does), as well as to connect users to a central source. It remains some time in the future. For the moment, videotex primarily consists of the information retrieval function, whereby users will use a simple keypad, with numbers and a few basic command keys, to access information sources using their TV sets as a display medium. Regarding the field trials that will concern us here, only the information retrieval function will occur for the present, though transactions are planned, in a subsequent phase of Bell's VISTA trial for example. In the U.S. several field trials will undertake transaction services in the near future.

Field trial operators and IPs alike are exploring, at this stage, questions regarding ideal videotex configuration or structure, means of financing information creation and dissemination, and methods of payment for services. ✓

Currently, system structures with significant differences are being referred to as "videotex systems". Even in field trials, structures will vary. With a "host computer", all databases accessed by the user are stored in a central computer. The Prestel system in Britain has used this model. BC Tel plans a host computer, Bell plans a host computer plus "windows" to several "3rd party" databases; MTS will provide only an interface to IP databases. In France, Teletel plans to

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TYPICAL VIDEOTEX CONFIGURATION



phase out host computers. Bell's long-term plans may similarly be only a switching function to IP databases.

Secondly, means of finance can vary. The idea of "advertising" (defined very broadly as any supplier-paid page availability) is growing as a probable means of finance for many databases. On the other hand is the user-pay approach, where the user pays for information accessed. Various mixes of the two can be imagined. There is also the question of subsidized support -- we may see non-commercial public interest information subsidized by some institution or level of government, or perhaps a cross-subsidization from commercial services.

Finally, there is the question of specific method of payment by the user, either for use of the system or for access to specific databases. This is still very much undecided at present. Various options are possible. For example, pay-per-page was the means used in the Prestel system. Subscription to services, insensitive to amount of usage, is another possibility. There is also the question of payment for time used on the system. These options for payment have been left aside for the moment by industry participants, and in the field trials no payments are required from users. Some options have implications for social issues such as privacy -- for example, a subscription basis may mean less recording of customers' use of information, for billing purposes.

Videotex, then, when it is considered in more detail, has a number of complex characteristics which are as yet very much undecided. One of the points of interest in the field trials described in this paper is the structure of the system that is used. Means of finance and means of payment, however, will not be addressed until a market trial stage.

The biggest uncertainty about videotex is whether or not the system will succeed and become widespread. This is a critical uncertainty which information providers and system operators alike face as they invest considerable amounts of money and labour in current field trials. Carriers such as Bell Canada are investing substantial sums to undertake trials; information providers face the costs of creating pages, which

is a labour-intensive process particularly at this time. (Technical and software improvements may speed up page creation in the future.) Researchers specializing in videotex have pointed out that database services may operate profitably selling a specialized service to a small audience of terminal owners at relatively high prices as has currently been done; or, theoretically, with a large audience of terminals one may offer services cheaply and still enjoy profits. However, in the interim phase when the market of terminals is neither of a specialized-audience sort nor of a mass audience size, it will be very difficult for providers of services to get adequate returns. It is precisely in this phase that videotex finds itself now. Moreover, there are few if any indications of what kinds of services people will want.

The term "teletext" is used to refer to one-way broadcast systems, whereby a number of frames of information are inserted into a TV broadcast at intervals, and desired frames are "grabbed" by the user's terminal. The user can select desired "pages" from this continuously broadcast series of frames, but cannot interact directly with the database, sending any transmission back to it. (The number of "pages" must remain relatively small, usually under 300, while two-way access to databases has theoretically no limitations other than computer storage capacity.) "Teletext" is still used to refer to broadcast systems; however, the term "videotex" has come to refer universally to both one-way and two-way systems, and is so used in this paper.

Telidon

✓ Most videotex services in the world have "brand names", such as Prestel for the videotex system developed by the British Post Office. Telidon is the brand name for the videotex system developed in Canada. Telidon refers not to the service, but to a particular idea of how videotex can operate -- to a computer protocol or code or set of instructions.

Other videotex systems create pictorial images by a process referred to as "alphamosaic." This means that each videotex page consists of a mosaic or a matrix of a certain number of rows with a certain number of characters per row.

Each position of the matrix may be filled in with an alphanumeric character, or with a "graphic character" -- a small rectangle, filled with a particular color. The mosaic of these characters creates a picture.

The resolution of this mosaic, however, is limited. The British system, for example, was fixed at 24 rows of 40 characters each.

Telidon uses a completely different method to generate pictures, referred to as "alphageometric". Graphics are transmitted using "picture description instructions" (PDIs), which are computer-programmed instructions for creating graphic display. To create a rectangle, a person need only indicate that a rectangle is desired, and give "two location definitions" for its position on the screen (for one of the rectangle's corners and its diagonally opposite corner). Telidon requires less transmitted information to display graphics, and has a much better resolution. It also holds the advantage of being a flexible means of conveying information to the screen, not tied to the characteristics of any particular display device, or transmission mode. However, considerable intelligence must be built into the Telidon terminal, to interpret the PDI's and translate them into shapes on a screen. ✓

In Canada, several organizations are conducting experiments or "field trials" and many will be using "brand names" to describe the videotex and other services they will offer. The Bell service is called "VISTA", for example. All will use the Telidon system technology developed by DOC. (A list of field operators is given in Table 1.)

Only with Bell Canada's "VISTA" trial will videotex be tested exclusively. The four other telephone companies conducting trials will be testing other technologies as well such as emergency service monitoring. In each case, the "brand name" used by the telephone company will refer to the entire gamut of services. The Manitoba Telephone Company System (MTS), in its Project "IDA", will experiment with another videotex system, "Omnitext", as well as Telidon and a number of other non-information services. New Brunswick Telephone calls its experiment "Project Mercury". Alberta Government

Telephone's Telidon experiment will likely be named after "VIDON", a transmission system being tested by the company and upon which the Telidon service will rely. British Columbia Telephone also plans to use a trial brand name, as yet unchosen.

Information provision

The information users find will have been prepared by an "Information Provider" (IP), the term for a videotex publisher. An IP is any person or organization involved in creating or "putting up" pages on videotex. Rex Winsbury in The Electronic Bookstall, summed up the role of an IP:

"Videotex sits at the cross-over point between...two competing private languages. One, the computer language, speaks of a data base maintained by manual or automatic update, with operators keying in, or bulk input by magnetic tape transfer or computer to computer handshake, with data reformatted to fit the Prestel display mode and generate the indexes.

"The other, the publishing language, speaks of a magazine or information service published on videotex, with news, advice and useful figures prepared and kept up-to-date by editors and presented on Prestel pages with suitable layout and cross references, using editing keyboards."*

Use of both the computer and publishing languages is essential to provision of information for videotex. Some IPs, especially those with a data base already computerized (i.e., digitized, or machine readable), expect to be able to input information by only magnetic tape transfer or computer to computer "handshake". The data processing term, "dump", has apt connotations here because in some instances the new medium

* Winsbury, Rex, The Electronic Bookstall, International Institute of Communications, (London, England: 1979).

demands a different approach. From a publishing perspective, many of the people editing data bases (sometimes called production editors or page creators) resent being dismissed as key-punch operators since the work requires more complex editorial decisions.

The actual creative work and inputting of information can be done in-house by the IP or can be purchased from a videotex service or broker. An Information Provider System, or IPS terminal, is used to create pages.

A broker or umbrella organization can provide page creation, data base design, management, and computer services for other IPs. A broker might also sell "turnkey" systems and services to closed user groups. Turnkey capabilities refer to the entire process of system planning, implementation and actual preparation of operating requirements.

An IP can store his data base in the videotex operator's host computer or in an independent or "third party" computer, which could be his own or a broker's. Again, the indexing or maintaining of the data base could be done in-house or purchased from a broker. Responsibility for basic decisions about kinds of information to be put up rests with the IP.

Closed user groups (CUGs) described earlier, can be organizations using videotex for private applications rather than for providing information to the public. Where the system is used as an internal communication tool within one organization, this is referred to as an "in-house" system.

Secondary videotex industries are also emerging. There are consultants who advise organizations on the use of videotex, perform market studies, conduct page creation seminars and advise on data base management. Universities and other institutions are exploring indexing possibilities, developing software, or beginning research on possible social impacts of videotex. Some organizations interviewed for this report may in the future carry out one or more of these activities.

Chapter 2

FIELD TRIAL OVERVIEWS

In this chapter, there will appear a brief overview of every current Telidon field trial. Representatives or project managers for all these field trials, as well as for one potential field trial, were interviewed. These include the five trials operated by: British Columbia Telephones (BCTel), Alberta Government Telephones (AGT), Manitoba Telephone System (MTS), Bell Canada, and New Brunswick Telephone Company (NBTel). Only one cable company, Télécâble-Vidéotron of Montreal, plans to conduct a trial (although Telidon will be delivered by cable in the MTS trial). The other two trial operators interviewed represented public broadcasters: the Ontario Educational Communications Authority (OECA) and the Canadian Broadcasting Corporation (CBC). The CBC trial is in the preliminary planning stages only.* Tables 1 and 2 (pp.13-17) give summaries of trial information.

Each trial will be described here with respect to total funding required, its size, time frame, location, user population, system technology and relationship to other operator services. (Information in all these areas was not available for every trial.)

* Plans for another trial have been announced. The federal government's Task Force on the Nature of Service to the Public, which has a mandate to further effective delivery of government services, will test the use of Telidon as a means of delivering government information, in a field trial due to begin in a number of locations across Canada in April 1981. 30 to 100 terminals will be placed in "storefront" enquiry centres, or in public places such as Post Offices.

Telidon is also being used in a broadcast trial by WETA, the PBS station in Washington, D.C. The trial is sponsored by the Corporation for Public Broadcasting, the National Science Foundation, the National Telecommunication and Information Administration, and the Department of Health, Education and Welfare, and is designed and managed by the Alternate Media Centre at New York University School of the Arts in conjunction with WETA. 60 terminals will be placed in homes and public locations to assess consumer reaction. The cost of the trial, due to begin in late 1980, is \$1.25M over 2 years.

Every trial will be subject to an evaluation by its operator. The results of these evaluations will influence the future development of videotex in Canada. For example, the OECA will be assessing: response of users to various human factors such as waiting times, especially in the broadcast mode; educational effectiveness; relevance of information content; organization of content; frequency of system failure; integration with home environment systems; and sociological impact. OECA will administer questionnaires to determine users' views on these matters.

Telephone companies and brokers will use a more market oriented approach and concentrate, for example, on the number of accesses per page. Several IPs indicated they will not really know what kinds of information people will make use of until there is a market trial, in which users will have to pay for the information. None of the trials involve payment of any kind by the users.

A. TELEPHONE COMPANY TRIALS (APRIL 1980)

(Apart from footnote updates to December 1980, this text is representative of trial status and plans as of April 1980.)

1. The VISTA Trial

The VISTA trial is the largest in Canada.

Total Funding:	\$10 million shared by Bell and DOC
Size of Trial:	Up to 1,000 terminals. Their mode (RF or RGB)* of inputting or connecting the terminal to the TV set is yet to be determined by DOC, which is purchasing and loaning all the terminals for VISTA.

* RF inputs means radio frequency input and involves a simple connection of the Telidon terminal to an ordinary TV set. RGB (red, green, blue) input refers to by-passing the normal television filters and inputting directly to the TV's color "guns". This second approach demands some modification of the conventional TV set. More detailed discussion of these two modes of input appears in Appendix 3.

TABLE 1

PLANNED FIELD TRIALS AND INFORMATION PROVIDERS
IN CANADA (APRIL 1980)

Information suppliers and brokers currently
 committed to a field trial or who have pro-
 duced pages experimentally for a field trial
 (April 1980)

<u>Field Trials</u>	<u>Information Providers</u>
OECA (Ontario Educational Communications Authority)	Albert Campbell District Library University of Toronto Library Automation System York University Ryerson Polytechnical Institute Carleton University Algonquin College Centennial College Valleywood Public School Alta Vista Public School Government of Ontario Atmospheric Environmental Service
Bell Canada: VISTA Trial	Dominion Stores Consumers Association of Canada Torstar Atmospheric Environmental Service Government of Ontario, Citizens Information Branch Teledirect Infomart
MTS (Manitoba Telephone System): IDA Trial	Winnipeg Tribune British Tourist Authority Electronic Yellow Pages (MTS) Community Information Providers: - Anglican Church - Evangelical Chapel - Phoenix Community Club - Community Historian University of Manitoba Cybershare/OISE/Honeywell/Homecom

TABLE 1 (Cont'd)

<u>Field Trials</u>	<u>Information Providers</u>
NBTel (New Brunswick Telephone): PROJECT MERCURY	No solid committments yet other than for Electronic Yellow Pages
AGT (Alberta Government Telephone)	Calgary Herald Electronic Yellow Pages (AGT)
BCTel (British Columbia Telephone)	Dominion Directories
Télécâble- Vidéotron	University of Québec

TABLE 2

VIDEOTEX FIELD TRIALS IN CANADA: STATUS, JUNE 1980

TRIAL OPERATOR:	Bell Canada - telephone	Ontario Educational Communications Authority (OECA) - broadcast TV
TRIAL NAME:	VISTA	
LOCATION AND DATE:	Toronto Nov-Dec 1980* to 1982	Ontario Jan. 11, 1980
SYSTEM TECHNOLOGY:	Telidon	Telidon
USER TERMINALS AND PLACEMENT:	650 - Residential - Closed User Group (CUG) - Business - Public	55 - Educational - Libraries - Government - Agencies - Residences
IP (INFORMATION PROVIDER) TERMINALS:	28	2
APPROX. NO. OF PAGES:	100,000	5,000
FUNDING (WHERE KNOWN):	\$10 million	-
INFORMATION RETRIEVAL METHOD:	Tree Logic	Tree Logic
INFORMATION PROVIDERS ASSOCIATED WITH FIELD TRIALS (JUNE 1980):	- OECA - Dominion Stores - Consumers Association of Canada - Torstar - Atmospheric Environmental Service - Teledirect - Government of Ontario - Infomart	- Alberta Campbell District Library - UTLAS (U. of Toronto Library Automation System) - Valleywood & Alta Vista Public School - York & Carleton Universities - Ryerson Polytechnical Institute - Algonquin & Centennial Colleges - Government of Ontario - Atmospheric Environmental Services

* delays have been experienced

New Brunswick Telephone (NB Tel) - telephone	Manitoba Telephone Systems (MTS) - 2 way cable	Télécâble Vidéotron Ltée - 2 way cable
MERCURY	IDA	
Millageville (St. John, N.B.) Nov. 1, 1980*	Headingley Manitoba June 1980	Montreal South Shore Late 1981
Telidon	Telidon Omnitext	Telidon
30 - Small Business - Residence - Schools	30 20 (Telidon) (Omnitext) - Residences - Schools - Business	250 - Business - Residences - Schools
2	6	-
3,000	3,000	-
\$1 million	\$1.6 million	\$4.5 million
Tree Logic	Tree Logic Key Word Search	Tree Logic
- Electronic Yellow Pages - Several others in early stages of negotiation	- Winnipeg Tribune - British Tourist Authority - Electronic Yellow Pages - Community IPs (Community Historian) (Anglican Church) (Phoenix, Evangelical Chapel) - University of Manitoba - Cybershare	- University of Quebec

TABLE 2 (Cont'd)

TRIAL OPERATOR:	Alberta Government Telephone (AGT) - telephone	British Columbia Telephone (BCTel) - telephone
TRIAL NAME:	VIDON	
LOCATION AND DATE:	Strathcona Park (Calgary, Alta)	Vancouver
SYSTEM TECHNOLOGY:	Telidon	Telidon
USER TERMINALS AND PLACEMENT:	30 - Residences - Business - CUG	150 - Primarily Business
IP (INFORMATION PROVIDER) TERMINALS:	5	2
APPROX. NO. OF PAGES:	Undetermined	Undetermined
FUNDING (WHERE KNOWN):	-	-
INFORMATION RETRIEVAL METHOD:	Tree Logic	Tree Logic, keyword
INFORMATION PROVIDERS ASSOCIATED WITH FIELD TRIALS (JUNE 1980):	- Calgary Herald - Electronic Yellow Pages	- Dominion Directories

VISTA:

Size of Trial: Up to 28 IP terminals. Total data
(cont'd) base will be 100,000 pages. Of
these, 75,000 will be in the VISTA
data base, 25,000 in a third party
computer data base. Fifty
thousand pages will be allocated
to residential use.*

Date of Trial: A first phase, of information
retrieval only, will occur in
1981. The fully operational
trial, with transaction services,
will occur in 1982.

Location: Primarily Toronto.*

User Population: Residential (650 user termi-
nals) -- some demographic
criteria (primarily income) are
being used in sample selection;
selected business applications and
Closed User Groups (320) and
public locations (30).*

System: System operating software, as in
other trials, is being developed
by DOC. As new generations of the

* The VISTA trial has changed as follows: the number of terminals is now 491. A second location in Quebec City with 110 terminals, has been added, and 15,000 pages of the total database of 100,000 pages have been allocated for French-language content. In Toronto, 85 terminals will be placed in public locations such as banks, hotel lobbies etc., and the rest will be in residences. No Closed User Group applications will occur. There will be 64 ports in the first phase (some to be committed to OECA), and 94 in the second phase. Access to "3rd party" databases is now uncertain (as of Nov. 1980). The technical trial will begin in Jan. 1981, but public access to the database will be held back until more pages are available.

System:
(cont'd)

technology are developed, new capabilities will be added--such as access to third party computers and an on-line information provider system. These features are important to information providers and to the success of the field trial.

VISTA will supply a host computer, which provides a master index. Storage will be provided free to IPs. A host computer supplied by DOC will be located in Toronto. Two or three "windows" will switch a user to independent "third-party" databases stored in another computer. Up to 96 user ports and five Information Provider System ports will be accommodated.

(The size of the computer will determine the number of accessible user ports which in turn will determine the system's ability to handle users. More efficient use can be made of user ports if information is down loaded to the user's own terminal so that ports don't have to be tied up by one user. Access to ports will become a problem if many users simultaneously try to retrieve information or conduct transactions. All trial operators will carefully observe user behavior in this respect.)

Trial Goals:

In contrast to the trials of other telephone companies, VISTA will employ only Telidon technology.

Figure 2

VISTA FIELD TRIAL: SYSTEM FUNCTIONAL SPECIFICATIONS

(Source: Vista Field Trial Status Report, March 6, 1980)

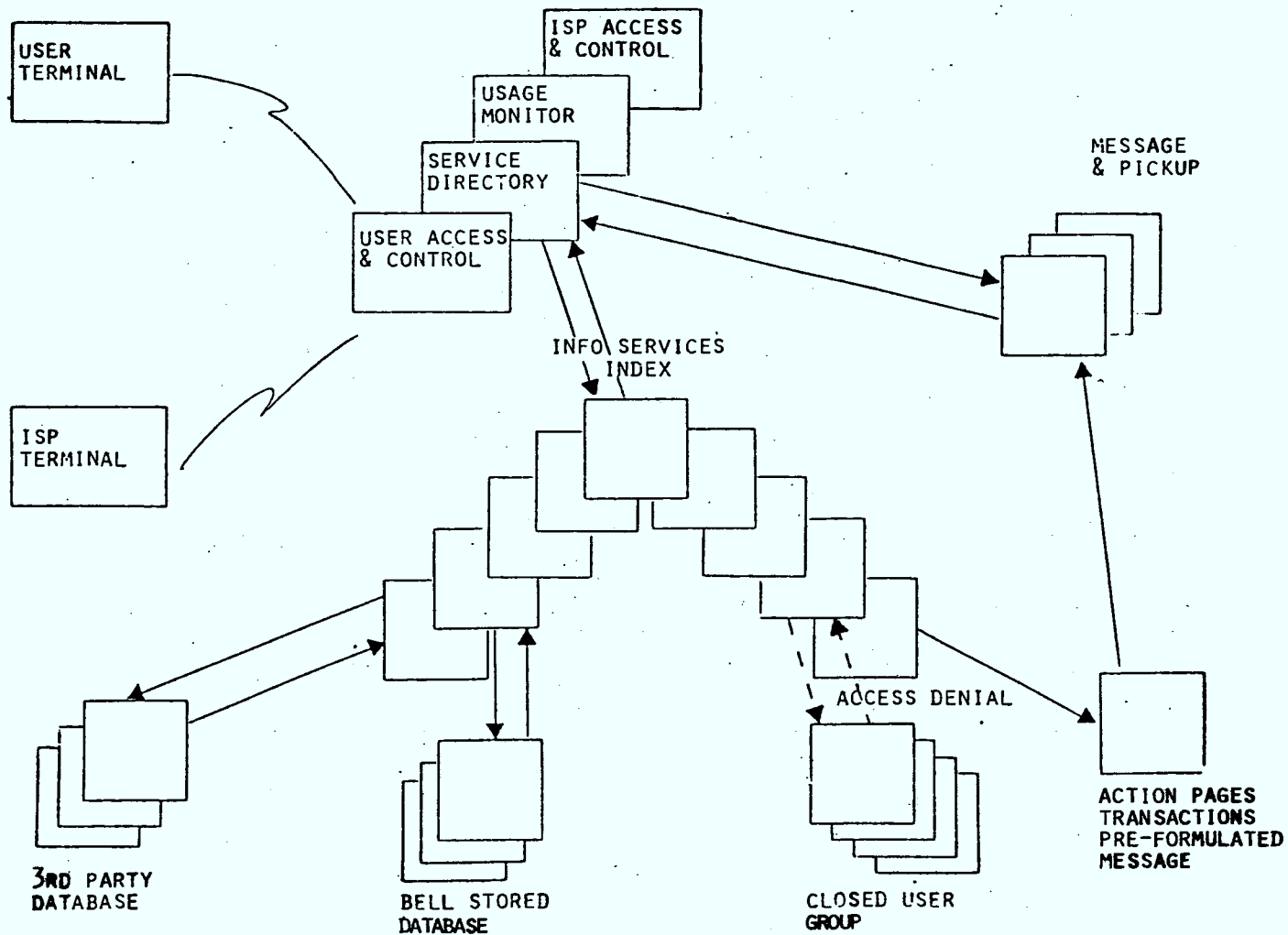
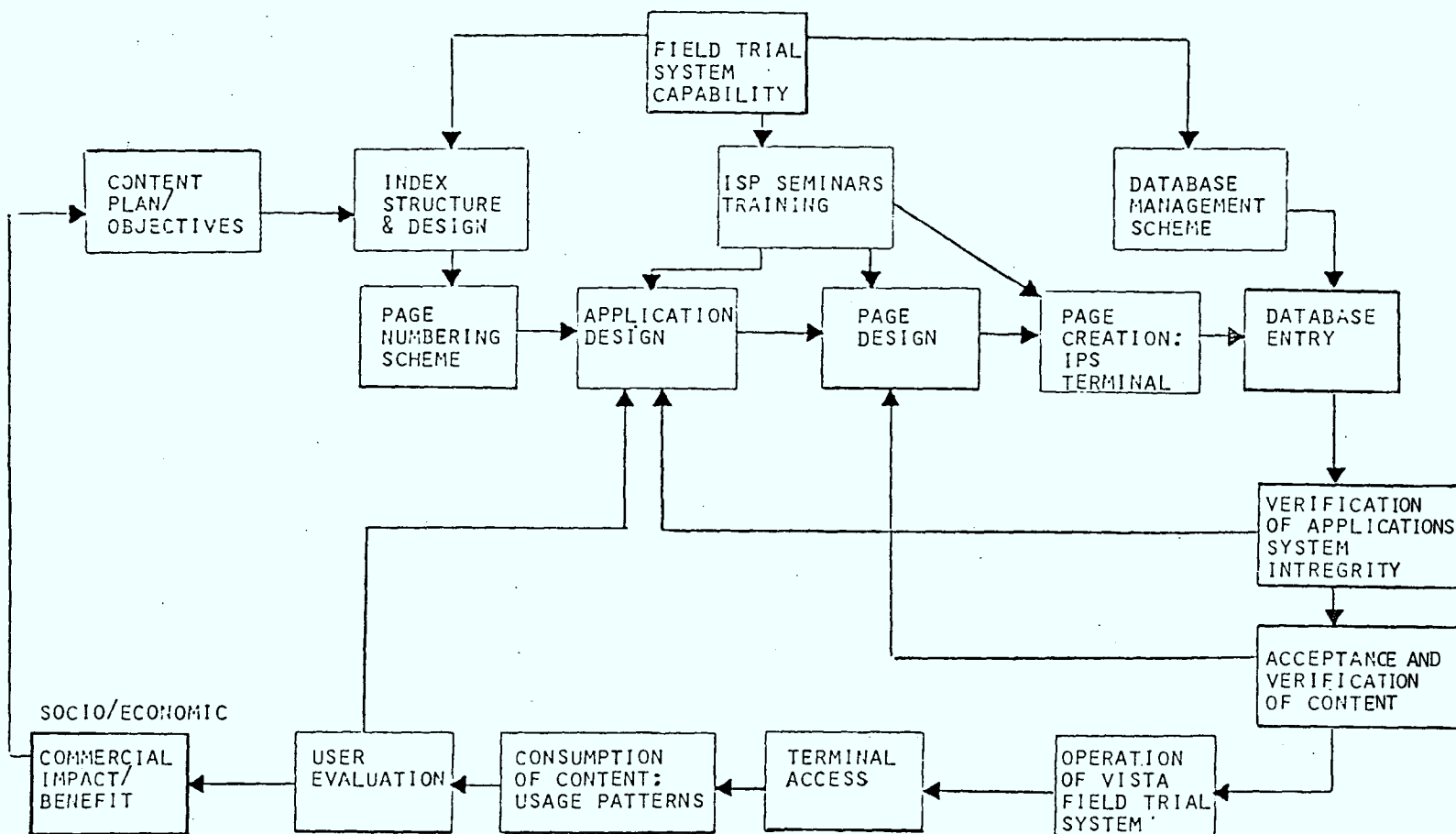


Figure 3

VISTA FIELD TRIAL: CONTENT MANAGEMENT PROCESS

(Source: Vista Field Trial Status Report, March 6, 1980)



Trial Goals:
(cont'd)

Bell is neither using Telidon to test other systems (see AGT) nor conducting an integrated trial (see MTS).

2. The AGT Trial

Total Funding:

Not available.

Size of Trial:

Thirty Telidon terminals to be rotated among 115 users. The mode (RF or RGB) is still not determined. Five IPs with an undetermined number of total pages had been identified in April 1980.

Location:

Strathcona Park, a new Calgary suburb.

User Population:

Businesses, residences and perhaps institutions and Closed User Groups.

Trial Date:

Phase 1, September 1980 (information retrieval). Phase 2, first quarter of 1981 (transaction mode).*

System:

Telidon system operating hardware developed by DOC. A host computer will offer free storage to IPs. AGT is testing a packet network exchange called VIDON, which is the transmission means upon which the Telidon

* The trial has been rethought and as of October 1980 was not under way. AGT is particularly interested at this time in work on the infrastructure, pursuing a distributed network concept with technology "packetized" down to residence levels. It may purchase 300-500 terminals in about a year's time.

System:
(cont'd)

service will depend. AGT will also investigate how to ensure access to ports by a larger number of users.

Trial Goals:

The testing of VIDON is AGT's first priority, while emergency services (fire and burglar alarm and medical alert monitoring) are second and Telidon is third.

One of AGT's interests is to create new standards for graphic storage and transmissions and to use Telidon in word processing so that graphics, as well as text, could be part of file systems. The final goal is the all-purpose terminal, with terminal to terminal interactive capability.

In a later non-trial situation, AGT would only store information regarding the network and would act as a gateway to third party computers.

3. The MTS IDA Trial

Total Funding:

MTS's costs are \$1.6 Million.

Size of Trial:

Thirty Telidon terminals, provided on loan by DOC. 20 Omnitext terminals. Mode (RGB-RF) is to be determined. Six Information Providers' terminals. Unlimited number of pages.

Location:

Headingley, Manitoba, a suburb of Winnipeg.

User Population:

Residences, schools and businesses.

Date of Trial:

June 1, 1980*

System:

As with other trials, MTS is using Telidon system operating software developed by DOC. MTS, in contrast to other trial operators, will not provide a "host" computer in which IPs can store information at no cost. The telephone company will only provide the transmission system and the terminals.

At the user's home control centre, built into the IDA system is a switching system that allows any remote data base to be accessed. The system was designed for Omnitext, a videotex system developed by Interdiscom Systems Ltd. Omnitext is an alphamosaic system which doesn't require a terminal in the home, uses an existing TV set, and a keyboard rather than a keypad. Access to the data base is by keyword rather than tree logic. Its resolution is not as high as Telidon and it lacks Telidon's graphic capabilities. Twenty Omnitext terminals will be placed in the field trial as well as 30 Telidon terminals.

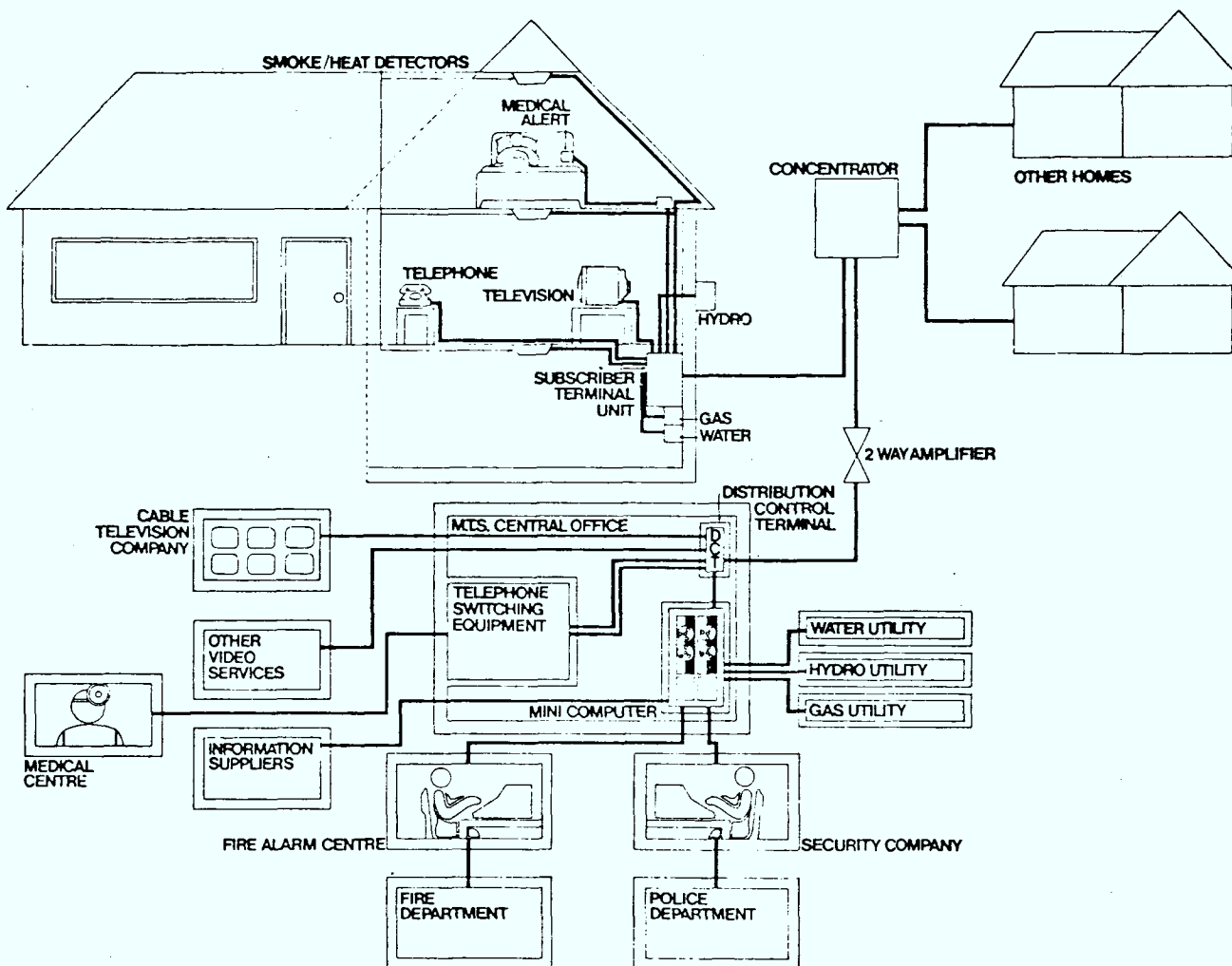
Infomart will provide a database on its own host computer for Telidon users. MTS will produce

* The videotex "IDA" phase of the trial began June 18, with 3000 pages, and 20 Telidon terminals. The television component of the trial began April 28 1980, bringing cable-TV service to trial participants. Alarm and metering services will occur at a later date.

Figure 4

MANITOBA TELEPHONE SYSTEM: INTEGRATED TRIAL

(Source: MTS Bulletin)



System:
(cont'd)

Electronic Yellow Pages to be stored along with network information on its own Telidon compatible computers ("in case the privately operated computers go down; we don't want to have blank screens"). Cybershare, a Winnipeg based computer service bureau, also plans to provide computer aided learning "courseware" via Omnitext, using a Honeywell computer as host.

Because MTS does not have a master index and "gateway" routing to connect users "transparently" to a number of data bases, the user must choose which data base he or she wants. For Telidon users, a converter will be provided with a choice of A,B,C, etc. (depending upon the number of independent data bases to be accessed). Upon pressing A, for example, the user would be connected to Infomart's data base, while B will get them Cybershare.

In the case of Omnitext, no converter will be necessary. When the user turns on the videotex channel, he will be asked to press a number or letter on his or her keyboard and will immediately be connected with the desired data base.

Trial Goals:

Telidon is part of a larger integrated services trial in which all communications (television, telephone, emergency alert, energy management, fire and burglar alarm

Trial Goals:
(cont'd)

status monitoring) are controlled at the user's site by a micro-processor called the Subscriber Terminal Unit. (See Figure 4) All services will be delivered by one "electronic highway" composed of co-axial cable, though initially the telephone line is being used for videotex. MTS is one of the few telephone companies in North America with legal access to cable. A second integrated trial in Elie, Manitoba, uses fibre optics as the transmission medium and is scheduled to begin in mid 1981. This trial is a joint venture by MTS, the Government of Canada and the Canadian Telecommunications Carriers Association.

Prior to its demise, the Winnipeg Tribune (a Southam newspaper) had planned to publish a User's Guide in hard copy as a means of informing videotex users about the content of the various data bases.

4. The NB Tel Trial

Total Funding:

\$1 million.

Size of Trial:

Thirty terminals with 10 purchased by NBTel, to employ RGB mode. Terminals will be rotated through about 75 homes. The total number of pages in the NBTel data base will be 3,000.

Location:

Millageville, shore area of St. John.

User Population: Small businesses, residences and schools.

Date of Trial: November 1, 1980.*

System: Telidon system operating software developed by DOC. Host computer will offer IPs free storage for one year. Master index will be provided. A host computer will be used for storage and retrieval only, and will connect to third party computers as soon as the technology is available.

Trial Goals: The Telidon trial is part of an integrated system trial that will include emergency service monitoring.

5. The BC Tel Trial

Total Funding: Not available.

Size of Trial: One hundred and fifty terminals, with 50 being purchased by DOC. The mode (RF or RGB) has not been determined. One hundred thousand pages in total data base.**

Location: Vancouver, B.C.

* The trial has been delayed, largely due to a 6-month labour dispute at NBTel. As of Nov. 1980, the starting date is planned for the end of the first quarter 1981.

** Although as of September 1980, plans were unclear, BC Tel's parent company, GTE, is interested and planning will occur in light of this.

User Population: First priority will be Closed User Groups; second priority, business; third, education; and fourth, residential.

Date of Trial: Sometime in 1981.

System: Telidon system operating software developed by DOC.* Host computer will provide all control functions and master index, but it is still unclear whether storage will be provided free to IPs. All third party computers must connect through BC Tel, but operator's policy on connections is as yet undetermined.

User terminals could be RGB or RF. BC tel is looking at both.

Trial Goals: Telidon is part of an integrated trial as BC Tel is interested in alarm and energy management status monitoring. Telidon's business applications will be emphasized. BC Tel has a strong interest in "the office of the future" concept.

B. A CABLE COMPANY TRIAL--TELECABLE-VIDEOTRON

This trial is currently the only one being conducted by a cable company.

* Enhancements are being considered for keyword search, computer games and computer-aided learning.

Total Funding: Altogether, \$4.5 million, of which \$1.2 million will come from the Federal government (\$700,000 from DOC and \$500,000 from the Department of Supply and Services).

Size of Trial: Two hundred and fifty user terminals. Mode (RF or RGB) undetermined.

Location: South shore of Montreal.

User Population: Business, residential, schools.

Date of Trial: This is a four-year project which will first develop cable technology appropriate to new services. The Telidon trial is planned for 1982.

System: Telidon system operating software developed by DOC. The company will use cable channels to carry Telidon signals and will employ packet switching and multiplexing techniques to ensure a high rate of data transmission.

A central computer at the cable company will be the host for a Telidon data base. This same computer will switch requests for information from user terminals to other computers in the area containing Telidon data bases. These other computers will relay the information back to the central computer, which in turn will send the information on to the user.

Trial Goals: An integrated trial of a variety of alarm and energy management "status monitoring" services, and

Trial Goals:
(Cont'd)

video games will take place. For the Telidon portion, which will not occur for some time, preliminary planning includes access to bibliographic data banks and to the computer assisted learning programs created by the University of Quebec.

The immediate task Vidéotron faces is developing its cable technology for the packet switching transmission. The system will be able both to "address" and receive messages back from individual subscribers. Besides the Department of Communications and Vidéotron, other participants in the program include the Montreal newspaper, La Presse, l'École Polytechnique de Montréal, l'Université du Québec and Hydro-Québec.

C. BROADCASTERS' TRIALS

TV Ontario (TVO) or the Ontario Educational Communications Authority (OECA) is currently a field trial operator, while the CBC is also interested in becoming one. Both can be considered information providers as well as carriers because of their mandates in programming and signal delivery.

The CBC plans to deliver its signals to the same locations as OECA in Ontario, but will not duplicate OECA content and will be exploring a different frequency. CBC now operates on VHF, while OECA delivers a UHF signal.

1. OECA

Total Funding:

Approximately \$1.5M over two years, which includes contributions from DOC.

Size of Trial: Fifty-five user terminals operating in interactive as well as broadcast modes. Two IPS input terminals are on OECA premises. The total number of pages in the OECA data base will be 5,000. 200 of these will be selected for broadcast mode.

Location: Throughout Ontario.

User Population: Rotated through educational institutions, libraries, governmental agencies and private homes.

Trial Date: Broadcast mode began January 11, 1980. Interactive mode will be introduced slowly as the hardware permits.

System: Telidon system operating software developed by DOC. Data base entry has been via floppy disc and stored in DOC computer in Ottawa. OECA does plan to have a host computer. In addition, the Authority has been allocated pages in the Bell VISTA trial.

In broadcast mode, Telidon data can be transmitted in the vertical blanking interval of the TV0 broadcast signal, to a potential 85% of the population of Ontario served by TV0. The viewer selects pages of information from a file of several hundred pages. When the viewer punches in a selection on the keypad, the corresponding frame will be electronically displayed, 'grabbed' from the broadcast file for display on the screen.

System:
(cont'd)

The drawback of this system for IPs is the carrying capacity of the broadcast mode. The carrier must select the pages for each cycle and a broadcast magazine of about 200 pages per cycle will be selected on a daily basis. Some IPs have indicated they would need to design a different set of pages for the broadcast mode.

In the interactive mode, a telephone link to the host computer will give access to the full complement of available pages.

Trial Goals:

OECA plans to develop a number of educational applications. One plan is to deliver programmed learning sequences via broadcast and interactive Telidon. The addition of an audio channel to Telidon could create an interesting learning medium and OECA will be testing audio-graphic learning packages. OECA would also like to test synchronization of scheduled television programming and matching Telidon-based messages, but only if the necessary technology is available.

2. CBC

Although the CBC is not running a field trial yet, the Corporation is looking at the possibilities. The CBC has a large number of potential users, and it could conceivably distribute to all existing field trial users via its array of transmitters and satellite channels.

The main goals of the Corporation's trial will be to evaluate the technological feasibility of the broadcast mode, assess the technology as an internal communication medium, and explore its own possible role as a public information provider. The CBC may also operate its own network of host mini-computers.

D. CROSS FIELD TRIAL ACTIVITY

There is considerable interaction between field trial operators, particularly among the telephone companies. The Trans Canada Telephone System (TCTS), a consortium of the major Canadian telephone companies, has formed a technical standards subcommittee which has discussed Telidon. All the telephone companies are very much interested in computer to computer communications.

Three telephone companies running field trials have expressed interest in the OECA data base. As already noted, the Authority will have pages in the VISTA data base (originally planning for 20,000). NBTel wished to be connected early with the VISTA and OECA data bases. MTS, in its larger integrated trial, is carrying two educational TV channels, one of which is OECA's.

Especially at this early stage in videotex, a small number of actors re-occur. All field trial operators mentioned Infomart as a possible major information provider, while three have selected Ryerson Polytechnical Institute as a source for page creation seminars.

VISPAC (Videotex Information Service Providers Association of Canada) is a co-ordinating body for IPs and among other functions addresses the matter of compatibility between trials. It will be in many IPs' interests if databases prepared for one trial can be readily transferred to another. All field trial operators seem willing to follow VISPAC's practices guidelines. (See Appendix 4 for VISPAC's compatibility concerns in the field trials, and Appendix 3 for a description of the organization generally.)

Chapter 3

THE FIELD TRIAL CONTENT MANAGEMENT AND DESIGN PROCESS

This chapter contains brief descriptions of the content management and design processes used in seven of the field trials. Content management involves attracting information providers and determining training policies; setting terminal allocation policies, and choosing between different types of user terminals; deciding upon index structure and design and formulating policy for formatting pages; and devising a policy or plan for content.

The operation of a system by a telephone company or common carrier means at least in theory that the common carrier principle will prevail: that is, there will be no interference in content and no one wishing to be an IP will be turned away within the limits of existing storage capacity. Telephone companies operating trials emphasize that they will have no involvement in content, although at the field trial stage, they are to varying degrees becoming involved in just this area. Only MTS does not manage a data base and confines its role to switching users to independent databases.

Cable companies have traditionally been involved in content by programming a community channel and have been described as a "hybrid" of content provider and carrier. The approach they take with videotex remains to be seen. Broadcasters, meanwhile, have content programming as their primary role, and teletext, with its small page capacity of 200-300 pages, necessitates some selection of material.

The Prestel system in England, while it provides a central host computer, takes a common carrier's disinterested role in regard to content. According to Rex Winsbury in "The Electronic Bookstall", this hands-off policy has a serious disadvantage -- "too many incomplete, out of date, badly presented, badly routed, over-priced, badly indexed, boring, visually displeasing, wastefully laid out and generally awful stuff." One remedy for this problem may be the emergence of strong "umbrella" organizations. These are often described as centres of excellence because they contribute skills and high standards to the material they create for others. Competition

between them may also benefit the whole. However, tension remains between non-interference in content by system operators on the one hand, and a need for control over quality on the other. It is being dealt with initially by such means as contracts between system operators and IPs, and agreements among VISAPAC members on topics of ethics and responsibility for content.

The tasks involved in content management will become clearer when certain terms are understood. For example, "data base" and "host computer" have been used interchangeably here to denote the entire data base of a field trial operator or of an umbrella IP or broker. The term "data base" can also refer to the content and design of an individual IPs stock of information. In other words, for example, an IP could be storing his data base in the VISTA data base (or VISTA host computer) or OECA could store its data base in the DOC data base (or host computer).

The "data base manager" is the person or organization responsible for managing the data base. The management function might involve transferring unused reserved pages to another IP or deleting information which is misleading or not being updated.

The term, "production editor", refers to the person who actually puts the page into the data base or computer.

"Data base structure" refers to the computer software developed to organize and permit access to information in the data base. In the case of Telidon, as noted earlier, software has been developed for a tree structure approach to information retrieval.

A. CONTENT MANAGEMENT BY TELEPHONE COMPANIES

(Apart from footnote updates to December 1980, this text is representative of trial status and plans in April 1980.)

1. Bell Canada

The VISTA trial has the most well developed content plans, partly because planning has been going on longer and

because its main focus is Telidon. Operators are very concerned that content appear adequate and interesting to their relatively large number of users.*

According to a Bell representative, no active recruitment of IPs has been pursued. VISTA IPs now include clients of Infomart, the large umbrella organization, and IPs connected with OECA. Only six IPs are not connected with Infomart, and one of these is an umbrella organization which will not reveal its client's names.

Broad content goals were drawn up by Bell with some consultation with IPs. These content goals were designed to include information retrieval and transactions. In March 1980 the types of content included: a consumer shopping guide (33 per cent of total pages), an entertainment and recreation guide (17 per cent), education and personal growth (25 per cent), government (five per cent), community and social use data (seven per cent), business guide (five per cent), miscellaneous (five per cent) and information about VISTA (five per cent). Each of these categories contained subcategories with high, medium and low priorities. VISTA asked IPs for their reactions to these priorities.

With some content goals set, recruitment could be done to fill any gaps in information. In April 1980, VISTA had received some 250 inquiries about Telidon, many of which expressed interest in becoming an IP. The only enquiries receiving a response were those from IPs which might be able to fill gaps in the data base. Potential IPs are encouraged to buy page creating services from existing IPs or Infomart. If they are an educational institution, they are referred to the

* As a result of this concern, as of September 1980, Bell Canada plans to delay the start of the trial until content is considered adequate, regardless of the readiness of the technical system. Technical testing will begin by placing terminals only among the IP community. Bell wishes to avoid prejudicing the general public against videotex by a first exposure to a less than impressive database.

OECA. IPs rejecting these alternatives may book time on a VISTA terminal. VISTA personnel have provided some training in the past, but now such training must be purchased, from Ryerson Polytechnical Institute at \$275 for a three day session.

According to the VISTA page allocation plan, the first 25 per cent of the data base will contain applications chosen by IPs. The remaining 75 per cent will be allocated, along with IP terminals, on a first-come, first-served basis to applications meeting the content goals and filling content gaps and possessing good-quality indexing, routing and visual composition. Bell, a Bell/liaison committee or an independent agent may judge quality. Applications must also be maintained and updated during the trial.

These allocations assume a scarcity of pages. In fact, the operator is concerned that there will not be enough pages created to fill the available space.

The allocation of IP terminals would be based on IP content plans. In order to get an IP terminal, an IP must send a formal letter stating that 6,000 pages will be created. Infomart, Teledirect and Ryerson have IP terminals. Smaller IPs are to use terminals on Bell premises.

Bell intends to amend the original content goals after consultation with interested IPs. VISAPAC is conducting a survey to gauge IP reaction to existing content policies. Although Bell does not intend to impose content guidelines after completion of the trial phase, some IPs want no limitations at present because they are investing so much time and money to enter the field. VISAPAC also rejects the idea of IPs being turned away because their applications do not fit in with content goals.

The content plan is well thought out and broadly based, but it is still too early to assess whether content goals will be reached. More debate on content policy may be required.

Bell also has a third party computer policy under which:

Priority will be given to third party computers with capabilities for ... and large existing or planned packages of transactions, games and information processing applications. Third party computer connections will require the same level of usage tracking data as the basic VISTA trial.

The goal of this policy is to:

extend information and retrieval capabilities and complement store and forward, transaction, and message capabilities of the VISTA trial with real time interactive transactions, games and information processing applications on third party computers.*

Up to now, no one has decided who those third parties might be or at what point they might be allowed in. Currently, Infomart is a chief contender, but Teledirect and IBM are also interested. The software for connections to third party data bases has yet to be provided by DOC and major policy questions require resolution. The priority received by third party data bases in the general index is crucial. Infomart, for example, wants to be listed as a separate database in the opening index, but Bell argues such an approach would destroy the idea of the information marketplace in which the user would be transparently connected to any of a number of data bases upon his request for a generic category such as consumer information. The category, "Infomart", on the screen would tell the user nothing unless Infomart had advertised in another medium or the user was already familiar with Infomart's data base.

IPs may store information in the Bell computer without charge - an important consideration for some IPs. Because the MTS trial is not providing a host computer and is relying on

* VISTA Content Applications Plan, March 6, 1980.

"private" computers such as the one operated by Infomart, IPs will have to pay the Infomart storage rate of \$1 a page each month. The amount is negligible compared to the cost of creating or updating pages, but for one educational institution planning to create its own pages on volunteer time, the cost would have been prohibitive if a substantial number of pages were to be created (-- its goal was 200).

2. Manitoba Telephone System

MTS has kept out of content plans for the most part and is leaving design of the data base to brokers and all compatibility issues to VISAPAC. Recruitment of IPs has been very informal with few meetings and no formal training sessions. MTS hopes for a wide range of information but is not actively trying to ensure variety. As an MTS spokesperson put it, "It is in the best interests of the IPs to get a broad data base." MTS has also made some suggestions to Infomart concerning possibly useful types of community information, which Infomart is including in its database.

MTS's IPs are its own Electric Yellow Pages Division, Infomart and Cybershare. Infomart's index includes sports, marketplace, jobs and carrier information; fun and games; information on the videotex services; and church and community information.

By September 1980, Cybershare plans to be in service using Omnitext.* MTS's Yellow Page Division will create pages for Omnitext and Telidon, but these pages will not be transferable between the two videotex systems.

3. BC Tel

According to a BC Tel spokesman in March 1980, the telephone company "had made no impact yet on the market" but would be advertising for business or Closed User Group applications. The kinds of information available will cater heavily to business users and include stock market, tourism, hotel and travel, commodities market and theatre information.

* This has not occurred as of November 1980.

BC Tel will only provide guidelines on content to influence the mix of information and assure a representative base. The company plans to have a master index, to provide all control functions and use the guidelines set by VISPAAC and other telephone companies as standards.

BC Tel has named no clients yet, although lumber companies and Dominion Directories (the telephone directory company affiliated with BC Tel) are expected to participate. BC Tel will not say "no" to "irrelevant users" but like other operators "reserves that right during the field trials."

BC Tel is mainly interested in business users because of a perception that this market alone has potential now "since business users are used to paying directly for commodities such as information."

4. New Brunswick Telephones

NB Tel is in the preliminary stages of IP recruitment. Trial co-ordinators express interest in community information, weather and environmental information, electronic yellow pages and the types of information which prove successful in the VISTA and OECA trials.

Ryerson Polytechnical Institute will likely have some role in training IPs.

5. Alberta Government Telephones

AGT has only begun work with respect to IPs and intends to make announcements in other media as a means of attracting them. Trial co-ordinators wish to attract both large organizations and small entrepreneurs. At present, the Calgary Herald plans to be an IP, while AGT's own Yellow Pages Division will publish electronic yellow pages.

The telephone company has not organized any IP training sessions yet, but sees itself as the manager of the data base with a duty and right to remove information that isn't being updated, or is misleading, or, if a reserved place in the data

base isn't being used, to give the space to another organization. In this respect, AGT plans to adhere to VISPA practice guidelines. The telephone company does not intend to commit itself to a single tree structure search method such as VISTA uses at this time, planning instead to test different types of tree structures and alternate retrieval methods for the trial. AGT also plans to develop third party interconnections as soon as possible.

B. A CABLE COMPANY'S CONTENT MANAGEMENT: TELECABLE-VIDÉOTRON

Up to the present, Télécâble-Vidéotron has conducted no active recruiting of IPs. The task of co-ordinating IP activity will belong to a staff member at the University of Quebec which will also provide training for IPs. Community and educational information will likely be priorities, but no specific guidelines exist now.

It must be appreciated that for some years this trial will develop technology that can form the basis for a wide range of two-way services, including videotex. Cable in Canada is suitable for only one-way communications at present. In the U.S., where cable is only now being laid for the first time in most urban centres, two-way services will be possible from the outset. Videotex and a Telidon trial are not planned until 1982, when the necessary technology phase of Vidéotron's project is completed.

C. A BROADCASTER'S CONTENT MANAGEMENT: OECA

With a small staff of five, the OECA has done a tremendous amount of work, including training a number of clients, participating in national and international symposia, developing applications, answering inquiries and writing major reports, as well as recruiting and co-ordinating the activities of many educational IPs.

OECA's over-all plan is to work with educational institutions to develop educational applications. The Authority will provide resources for "the creation, distribution, reception and evaluation of these applications". OECA is

particularly looking to institutions actively involved in computer-based education to find appropriate Telidon applications.

Because only a relatively small number of pages can be broadcast, the Authority will have to exercise a management function with respect to the data base used in the broadcast mode by selecting pages for daily use from its larger data bases. This prospect discourages some IPs.

OECA has not developed an index but has a very ambitious list of the types of information services it plans to provide. Although its mandate is education, the Authority also intends to provide some non-educational services.

Possible educational services include: curriculum-linked information, programmed learning sequences, dissemination of project reports, selected bibliography, lists of available extramural and intramural courses, off-hour delivery of educational materials, TV Ontario broadcast schedules, background program information, lists of support materials, career information and educational games.

Possible non-educational services include: news headlines and abstracts, weather, travel, consumer information, referral services, entertainment and restaurants.

The OECA provides potential IPs with consulting expertise, training and equipment. Each IP must fill out an application (See Appendix 2) describing the kinds of information it wishes to provide. The Authority then provides instructions on creating pages and allows the IPs to book time on the OECA IPS terminal. The IP must also sign a letter of agreement to the effect that responsibility for content will conform to the provisions of the Broadcasting Act.

The OECA IPs include Valley Wood School in St. Catharines, Alta Vista School in Ottawa, Albert Campbell Library, Algonquin College, Carleton and York Universities, the University of Toronto Library Automated Systems (UTLAS), Centennial College and Ryerson Polytechnical Institute. The Government of Ontario and the federal Atmospheric Environmental Service may become IPs in the future.

Chapter 4

THE CONTENT GOALS OF IPs

This chapter focusses on the kinds of information IPs plan to provide, as well as describing how these plans relate to their existing activities. Each IP, of course, intends to provide its own unique mix of information, but it is possible to categorize the IPs according to their current non-videotex activities (See Table 3). Commercial IPs, for example, include directory publishers, retailers, news and wire services and computer service organizations. There is also an assortment of non-commercial categories: public sector organizations, libraries, educational institutions, public broadcasters and citizens' organizations. The activities of IPs in each of these categories will be described below.

As of April 1980, specific information on how these IPs have designed their data bases is unavailable because of the proprietary nature of such information or simply because most IPs have not yet undertaken this task. Infomart, the Department of Communications and two electronic yellow page publishers have designed a data base, while only two of the remaining IPs have hired managers to design or conceptualize their data bases. Most individual IPs are assigning staff members to "script" their information before either entering it into a data base with an IP terminal themselves or finding a broker or data base manager to do it for them.

A. COMMERCIAL IPs

1. Directory Publishers

These companies all publish yellow pages for telephone companies and seem to be "naturals" for the videotex medium, given that the "tree structure" of information retrieval is essentially a series of directories. (Alphabetic searches, however, which equate to a "white pages" directory, must await terminals with a keyboard and software with keyword search capacity).

Two directory publishers involved with videotex were telephone company divisions (of MTS and AGT), while another two

TABLE 3

CURRENT INFORMATION PROVIDERS AND BROKERS (April 1980)
(Grouped according to non-videotex functions)

A. COMMERCIAL

- 1) Electronic Yellow Page Publishers
 - a) Dominion Directories - affiliated with BC Tel
 - b) The yellow page department of Alberta Government Telephones
 - c) The yellow page department of Manitoba Telephone Systems
 - d) Teledirect - owned by Bell Telephone Company
- 2) Videotex Service Organizations
 - a) Infomart
 - b) Infoscope
 - c) Hemton corporation
- 3) Newspaper and Wire Services
 - a) Torstar
 - b) Broadcast News
 - c) Reuters
 - d) Winnipeg Tribune* (Southam)
 - e) Winnipeg Free Press
 - f) Calgary Herald
 - g) Unimedia (Le Soleil)
- 4) Retail
 - a) Dominion Stores
 - b) Calladine and Baldry Travel Agency
- 5) Computer Service Organizations
 - a) Cybershare
 - b) Global Travel Computer Services

* Now defunct.

TABLE 3 (Cont'd)

B. NON-COMMERCIAL

- 1) Public Sector
 - a) Citizen's Information Branch, Department of Culture and Recreation, Ontario Government
 - b) Task Force on the Nature of Service to the Public, Federal Government
 - c) Communication Secretariat, Privy Council, Federal Government
 - d) Atmospheric Environmental Service, Environment Canada
 - e) Canadian Broadcasting Corporation
 - f) Ontario Educational Communications Authority
- 2) Educational Institutions
 - a) University of Manitoba
 - b) University of Quebec
 - c) Waterloo University
 - d) Carleton University
 - e) Ryerson Polytechnical Institute
 - f) York University
 - g) Ontario Institute for Studies in Education
- 3) Libraries
 - a) University of Toronto Automated Library Services (UTLAS)
 - b) Scarborough Public Libraries
- 4) Citizens Organizations
 - a) Consumers Association of Canada
- 5) Community Information Organizations*

* The Community Information Centre of Metropolitan Toronto (CIC), an "umbrella" for a large number of organizations, has since begun an active role.

TABLE 3 (Cont'd)

6) Independents

- a) OECA and Infomart have identified two independent or private page creators. One individual spends every Tuesday evening creating pages for OECA on a volunteer basis. Similarly, a community college student creates pages for Infomart voluntarily as a way of exploring the medium.

were separate companies. They were Dominion Directories and Teledirect which publish yellow and white pages for BCTel and Bell Canada, respectively.* (Dominion Directories is affiliated with BC Tel, and Teledirect is a Bell Canada company.) All are VISPAC members and all plan to publish electronic yellow pages for the field trials. These publishers now operate, in effect, as specialized advertising agencies. All are either computerizing or have computerized all data bases. They tend, however, to see a limited relationship between their existing data bases and those they will have to develop for videotex. They talk about the need to adapt.

The chief advantage of electronic publishing is that, in contrast to hard copy publishing, publication can be continuous and clients need not decide three months in advance what information they wish to include. Not infrequently by the time a directory is published in hard copy, the business no longer exists. On the other hand, an electronic directory is not a browsing medium in which one can find six to eight ads a page and flip through pages to pick a listing at random as is the case with hard copy yellow pages. The first few listings of a category in an electronic directory might be the ones most frequently accessed and sub-IPs on those pages might have to pay premium rates. The data base headings would also be fewer in number than in hard copy directories.

The electronic publisher can define his yellow pages more innovatively for the new medium, perhaps as a series of guides. For example, his menu could include broad categories of automotive, home improvement or leisure information. With the yellow pages structured as a series of guides, businesses might also provide informative material rather than aggressive advertising: automotive companies, for instance, could give car care information. New parties might be drawn to advertise; one directory publisher had been approached by a market economist who did not normally advertise in the yellow pages but wanted his services described in an electronic business directory.

* L.M. Berry, a Ohio-based directory company providing yellow pages for NBTel, is an active IP in the NBTel trial, as of November 1980, emphasizing commercial goals.

The directory publishers varied considerably in the scope of their plans. A spokesman for one said he would be content if his organization provided a relatively straightforward menu, listing businesses in the local trial area. The representative of another publisher painted a picture of almost unlimited potential in which his business acted as a broker providing systems for closed user groups, third party computers, page creation services and vendors of games.

Most wanted very much to be involved in the field trials. "Either we adapt or perish, because the directory business will be very strongly impacted by videotex," said one spokesman for one publisher. All saw participation in the trials as a way to get market information, gain experience and establish territory. The potential of the market for serving the business community with a single source of information was also a big motivator.

Directory publishers took quite different approaches to pricing for the trials. The telephone company departments responsible for yellow pages said they would likely not charge for page creation, storage and updating of business listings for the trials. Private companies would probably charge as much as any other broker.

2. Videotex Brokers

Videotex brokers or umbrella IPs are companies whose primary business is videotex. They might provide a third party computer to aggregate a number of sub IPs in a data base. They also offer consulting services to companies or institutions with a desire to use videotex in a public and/or closed user group setting. Some brokers plan to sell turnkey systems and page creation services.

Conceivably, non-commercial organizations--either educational institutions or government--could perform all these functions. Private companies whose primary business is something other than videotex could also perhaps carry out these activities; indeed, one such company saw itself as a potential competitor of the only videotex company now performing all the functions described.

The latter videotex company, of course, is Infomart. As well as providing a full range of brokerage services, Infomart is setting up a network of computers or data bases across the country. It has the powerful backing of Torstar and Southam, being fifty per cent owned by each, and according to most observers, has the most at stake in the outcome of the Telidon field trials.

On behalf of its clients, Infomart will create pages for MTS (2,500 for the initial stage) and VISTA (several thousand) trials. Infomart has the only host computer, so far, in the MTS trial. Still unclear is Infomart's level of participation in other trials.

Infomart's clients include department stores, a grocery chain, a bank, newspapers and a travel service. In addition to putting up pages for paying clients, Infomart will provide free pages for "worthy community groups" as a matter of policy and has already done so in the MTS trial where a planned four per cent of the pages will contain community information, which Infomart is preparing itself.

For the MTS trial, Infomart has designed its data base to include sports, marketplace, employment, fun and games, "on the town", travel and recreation, education, government services and church and community information. This design works well for both commercial and consumer information, though for the BC Tel trial one more level of corporate information would be added if Infomart were to be involved, because the trial is geared to business users.

Also actively involved in VISAPAC, Infomart was the main force behind the list of the 16 compatibility issues presented by the Association to field trial operators (See Appendix 4).

Infoscope, a small independent videotex broker, intends to specialize in graphics and page creating services for small IPs such as advocacy groups and in the future will offer similar services to government organizations. Infoscope does not plan to offer turnkey systems for closed user group applications, though it might market systems and provide a host computer.

Infoscope states it is currently involved in research to sort out the "visual vocabulary" of the medium and sees a very strong need for graphic effectiveness. The company has no corporate backing but, as with other IPs, will involve itself in a field trial to acquire exposure, experience and market information and to "figure out its place in the market". As the only organization talking about government, advocacy groups and graphic effectiveness, they may have already defined their place.

The third videotex business, Hemton, brought together the combined skills of a computer equipment manufacturer and a graphic arts house. These skills in audio-visual and advertising techniques will be employed to sell page creation services and Telidon turnkey systems to large closed user groups.

Hemton continues to produce Telidon demonstration packages for DOC but will not participate in any field trials. Hemton's main interest is closed user groups and it sees its systems as an alternative to other audio-visual techniques, especially for the training programs in large companies. Such a system could be cost effective for a client spending large amount of money to train and update managers across the country, given the relative cost of audio-visual products and travel.

All three videotex companies are VISPAC members, are obviously motivated by the potential of the technology, and brought the expertise and experience of specific backgrounds that could be adapted to videotex.

3. Merchandise Retailers

Two retailers were interviewed for this report and both saw two broad applications for videotex: internal communications in a closed user group situation and communications to the public, either via residential terminals or terminals for public use in retail outlets. One company has already committed itself to a large number of pages for the VISTA trial, while the other remains undecided. Both are VISPAC members.

Both have highly digitized operations already, but neither foresees any major transfers from existing data bases

to a Telidon one. Both emphasize that videotex is a new medium they wish to explore. A manager for one company said he wanted to avoid actions which might stifle the possibilities of the medium. When asked about the relation of the videotex work to the activities of his advertising agency, he replied, "We haven't mentioned it to them; we want to see if they are on the ball." He did say, however, that his marketing department had some involvement in the videotex project.

This retailer was using the services of a broker to create and store pages for the VISTA trial. But, if cost/performance ratios were satisfactory and his firm got "fast turn around and a decent break in price," it might create a videotex service group in-house. The manager contacted already employed two people to design a data base and considered this a very important job.

He saw wide opportunities in closed user group (CUG), and public applications such as: soft-sell advertising employing computer games; soft-sell informational advertising for retail transactions; and public bulletin boards in retail outlets. He also believed videotex might replace other audio-visual techniques as a means of training local managers and other personnel. Another CUG application, he speculated, could be to solve through videotex, "the problem of getting instant information to managers regarding store policy, pricing, competition, bad cheques and armed robbery." The second retailer also saw major possibilities in residential and CUG applications. One major advantage of videotex would be the freeing of consumers from the constraints of regular business hours; videotex transactions for purchase could be conducted anytime. This feature was important because the retailer was a travel agency so that the problem of delivering merchandise is reduced. Customers could pick up their tickets at their convenience. The visual potential of Telidon was also important to a travel agency. From a management standpoint, Telidon terminals could reduce the need for having retail outlets located everywhere, and could help the company to keep track of and verify purchases.

The main reason for both these retailers' involvement in a Telidon trial was a desire to learn about the uses of the technology. Both were optimistic about the success of the new medium.

The retailers' videotex managers were knowledgeable about computers and sufficiently senior in position to interest upper management in the field trials. One was the chief of management for his company and his dominant interest was the need for good internal communication. The other manager tended to emphasize the long-term possibilities of at-home or "impulse" transactions. Though he admitted there was an obvious social need for human interaction in the marketplace, he believed a home transaction service could be convenient, and even very useful to groups such as the disabled in particular.

4. Newspapers and Wire Services

Newspapers and wire services now comprise seven out of 32 VISPAC members. Most prominent are Infomart and its owners Southam and Torstar (which publish the Toronto Star). Newspaper publishing interests, then, represent a substantial portion of VISPAC membership and two-thirds of these are voting members. The seven VISPAC members were contacted, as well as one additional publisher who was not a member.

Only three newspapers whose representatives were interviewed had committed themselves to specific trials, by April 1980, although two others were negotiating such involvement.

Two organizations were already information "brokers" (in the sense of supplying databases to customers). One offered a news service for broadcast media by "wire, audio and cable." The other provided international economic and political news to the media, and specialized economic news for the business community. Both had sophisticated computer-based information systems, and were concerned about the costs of modifying their technical and editorial operations to supply information for the trials, particularly when formatting decisions have not been finalized. One of the organizations expressed concern about buying a new computer to convert its existing data base to Telidon format.

The broadcast news service respondent said that it would be useful to have a computer-to-computer "handshake" with Telidon, for the news maps, graphs and weather information delivered by wire services to them in digitized form at the moment. He said his company's other graphic needs were simple

or non-existent and if a relatively automatic transfer of other information could be managed, it would probably hire a broker to create the remaining graphics.*

The newspaper publishers saw Telidon as another way of delivering the kind of information they already provide. For the trials, they planned to provide material such as sports, news and entertainment, as well as classified ads, horoscopes, local emergency information, a local entertainment guide and even puzzles. Most pages would be updated weekly and some daily during the trials. In a true market trial, most saw a need for very timely information, requiring daily update of a much larger number of pages.

One publisher expressed the view that editorial information would have to be very uncontroversial in comparison to existing data bases; other publishers disagreed. This issue is important because with videotex, advertising is likely to be matched with certain pages on suitable topics of interest, rather than inserted without content connections as occurs in hard copy newspapers. (Also, advertising accounts for some four/fifths of newspaper revenues. In effect, each ad cross-subsidizes news and editorial material. When, for example, classified ads appear on videotex, they will not only compete directly with an advertising service offered by newspapers, they will also erode the financial base of other newspaper services, indirectly.)

All the newspaper publishers operated highly digitized newsrooms. One publisher noted the difficulty of re-training staff using existing text editors to use videotex information provider terminals, and was therefore exploring means of making text readable by IP terminals. He also pointed out that Telidon text editing capabilities were well below existing newspaper norms.

Publishers tended to differ on whether they were putting up their own pages for the trial or using a broker's

* Broadcast News is now committed to participation in the French-language portion of the VISTA trial (Nov. 1980).

services. Only one company said it would definitely handle the job itself; the rest will likely use brokers. Of the latter, one suggested newspaper editors might not want the broker's information processing personnel (i.e., the production editors) to alter editorial information in any way. Videotex production personnel, on the other hand, see themselves as much more than keypunch operators automatically entering data.

As with other IPs, most were participating in a field trial because they recognized the potential of the medium and wanted to gain experience, establish a position as a major contributor, and show their interest in a new form of information delivery.

Most did not see videotex as a threat to newspapers because people "can't clip, carry or browse" and "probably cannot look for long periods of time at a screen." In The Electronic Bookstall, a study of the British Prestel system, videotex was viewed as a major threat to publishers in general and newspapers in particular. One Canadian publisher suggested that such a threat might exist in a very centralized country like Britain, with its many national newspapers, but was less likely in the more regionalized North American setting as long as newspapers continue to do what they do best--provide excellent local coverage.

Although most publishers dismissed any threat to newspapers from videotex, most justified their participation in or monitoring of Telidon trials in terms of protecting their investments. As was the case with most IPs, the publishers said they would have little idea how people would use the technology until after a genuine market trial. Data base use for free and the intensive focus on the users during non-market trials would preclude any valid conclusions about videotex use in a commercial context.

New alignments or agreements among newspaper-related brokers, carriers and users, with respect to existing data bases, are likely to become necessary in the future. For example, current heavy users of newspaper advertising such as grocery chains may decide to use videotex brokers directly, instead of newspaper advertising departments. Wire services

now supplying news to newspapers will probably not want their information transferred over by the newspaper to Telidon, because existing agreements only cover its publication in the newspaper. Wire services such as Reuters might also go directly to Telidon.

Most IPs now view videotex as an advertising rather than a developmental expense. Even newspapers frequently see videotex, with its potential advertising and games, as a new source of profit. Wire services take another view because their revenues derive only from selling information, a situation which likely will not change in the future.

5. Computer Service Bureaus

Two service bureaus were contacted: one specializes in educational applications (Cybershare); the other in servicing travel agencies (Global Travel Computer Services).

Cybershare currently serves about 20,000 students in 12 slow learner schools and several Manitoba high schools. It sees videotex as a means of delivering computer-managed instruction, distance education and industrial training to residences and for industries.

Cybershare, in a joint venture with Honeywell Canada, the Ontario Institute for Studies in Education (OISE) and Homecom (a small Toronto company specializing in computer-based education), will serve the videotex education "market". A Winnipeg-based company, Cybershare will supply existing computer-based educational "courseware" for the MTS trial via Omnitext, using a Honeywell computer. Omnitext, rather than Telidon, is being used initially because the former already employs a keyboard, an essential in computer based education. This service was to be available by September 1980.* The company is also developing new "courseware" for Telidon use.

* As of Nov. 1980, this was not underway.

Global Travel Computer Services describes itself as a software house and service bureau for 300 travel agencies. The company now provides accounting and on-line reservation services, but sees itself as engaged in the communications business and in fact operates in partnership with ITT in the United States. Its long-term interests include computer networks for storing and processing videotex information. In the short term, the company plans to work on the problem of getting computers to talk to one another. Although a VISAPAC member, Global has only begun to define its role and had made no decisions about participation in field trials.

B. NON-COMMERCIAL IPs

The designation, "non-commercial", does not mean a reluctance to generate money through videotex use, nor does it mean these organizations will provide information free of advertising content. Nor does it mean service will be free -- some non-commercial IPs also feel they might have to charge users for their services in the future. Rather, "non-commercial" refers to the overall aims of the organization itself and not just its experience and intentions with videotex.

1. Public Broadcasters

The OECA and the CBC will both be in the business of providing information. The former is also now a field trial operator, while the latter plans to be, as noted above. Both public broadcasters could also be described as brokers because their computer data bases will be used to store information for sub-IPs.

As a field trial operator, the OECA has provided training and page creation consulting services and is now co-ordinating the videotex activities of other educational institutions. OECA's clients now include educational institutions, libraries and government departments and the Authority will soon have both educational and general information in its data base. OECA's existing data base includes program scheduling information, program notes, videotape and film catalogues. These data are not yet computerized but OECA has an excellent and extensive system of information support for its programming.

CBC will assume an umbrella role, employing its Telidon network to disseminate information for the public sector. Canada Post, Environment Canada and Canada Employment and Immigration have already expressed interest in participating in a CBC field trial. CBC also plans to distribute program scheduling information and other similar items to a closed user group of local managers.

As with the OECA, CBC has no computerized data bases for existing information. In any case, existing information will likely require re-examination specifically in light of Telidon capabilities. For example, CBC has coverage maps for 600 stations, all requiring labour-intensive updating. These maps and their updating could easily be digitized. As far as a public Telidon service is concerned, there is a wealth of information on past CBC radio programs, for example, which could be catalogued and disseminated via Telidon.

2. Governments

Although it had made no specific commitments to field trials, as of April 1980 the Atmospheric Environment Service of Environment Canada has done extensive research regarding its role as an IP. It sees Telidon as a way to solve many problems in disseminating information. Though heavily digitized with coast to coast computer facilities, the agency faces a major information bottleneck in the limited number of calls it can handle at each location. Its Toronto office often receives 600 calls a day and lines can become so tied up that specialized users, such as the aviation industry, sometimes have difficulty getting vital weather information.

However, without an automatic computer-to-computer capability, it would consume too many man-hours to adapt the agency's existing data base to Telidon use. An agency policy group is working on the possibility of creating an interface between the agency computer and the Telidon system. Meanwhile, the service plans to provide a limited number of updatable pages for the VISTA and OECA trials. Different formats will likely be provided for each trial because of the small carrying capacity of the broadcast mode employed in the OECA trial.

The agency has up to 2,000 pages of videotex information and expects to provide a few pages of core information free to residential users in non-trial situations. It may, however, charge for more detailed information.

The Federal Government Task Force on the Nature of Service to the Public, in its mandate to seek effective ways to disseminate government information to the public, is also looking at videotex. The Task Force liases with similar provincial government agencies and has held discussions on videotex with the Privy Council Communications Secretariat. No decisions on a co-ordinated federal IP policy have yet emerged, though there is certainly movement in that direction.*

The Citizen's Information Branch in the Ontario Ministry of Culture and Recreation plans to be an IP in the VISTA trial. The OECA has allocated the Branch 5,000 pages of the Authority's 20,000 pages in the VISTA data base. The branch will be co-ordinating all Ontario government IP activity by managing and designing the necessary data bases and entering information chosen by provincial agencies. It is still unclear whether the branch will employ a broker or rely on an in-house team to create the pages, although the latter is more likely.

The Branch already has a computerized data base of information the public can use with an operator's assistance. The retrieval method used is "key word in context". The Branch cannot automatically transfer its data base to a Telidon one because the key word retrieval structure of the Branch's data base is more sophisticated than the tree structure used by Telidon. Thus, the Branch must create a new Telidon data base and a major problem will be the design of a format for the varied types of information provided by different government agencies. Not surprisingly, most of the information will be textual, with very few graphics.

The Branch also plans to create a new data base of "how to" information--such as, for example, how to get a driver's license. Another idea is to publish electronically the daily press releases of the Ontario government.

* See Chapter 2 above, for a planned field trial.

3. Community Information Organizations

Since April 1980, an update is necessary regarding community organizations. In the VISTA trial, the Community Information Centre (CIC) of Metropolitan Toronto, which is itself an "umbrella" for some 1,200 organizations, has emerged as a major potential non-commercial IP. It plans to create a large database for the trial, and is seeking financial support from Bell Canada.

Infomart is also drawing upon local groups in the small community of Headingly, Manitoba, to create locally responsive community material for their IDA database. However, the groups themselves do not appear to have moved into an active IP role.

4. Libraries

Representatives of the Albert Campbell Public Library in Scarborough, Ontario and the University of Toronto Library Automation System (UTLAS) were interviewed. Both institutions have created some pages for the OECA data bank.

UTLAS is a VISAPAC member and provides brokerage services for some 300 libraries across Canada. These libraries have entered into the UTLAS data bank a variety of information about their collections, ranging from new acquisitions to special collections such as film. This information has an index much more sophisticated than the Telidon tree structure and is all in machine readable form. UTLAS produces hard copy catalogues about these collections and describes itself as being in "the data base management and indexing business, not in the data entry business." For this reason, UTLAS is not really interested in the labour intensive process of creating pages for Telidon trials, but would become involved upon development of a computer program to format its information suitably.

A local library system such as Albert Campbell takes quite a different approach to Telidon, partly because its data base is not computerized in the first place. For one thing, Albert Campbell is interested in creating new information for videotex and has already created pages for the OECA data base.

These pages include local history using graphics and maps; a list of activities for children, a list of provincial, municipal and federal representatives in the area; a guide to the proper use of library resources for finding consumer information; and annotated listings of new acquisitions. Only a lack of personnel for entering information has hindered adaptation of the existing data base and the creating of a new one. With adequate resources, this kind of "local" information may have a greater potential than the vast amounts of information more centralized sources would choose to "dump" automatically into Telidon.

One reason for the Albert Campbell interest in Telidon was the Library's perception of its potential for disseminating information to the home. In this respect, a Library spokesman insisted on the importance of free information for use by public libraries.

5. Citizens' Organizations

The only citizens' organization planning to become an IP as of April 1980 is the Consumers' Association of Canada (CAC). A voting member of VISAPAC, CAC plans to enter up to 1,000 pages into the VISTA data base.

The CAC acts as a lobbyist for consumers, as an intervenor at regulatory tribunals and as an organizer of consumers. Its involvement with videotex arises from all these concerns. As a consumer watchdog, the CAC will monitor videotex to assess its impact on consumers. For example, if the technology encourages impulse buying, the CAC may examine the need for "cooling out" legislation, by which buyers have a right to a certain period of time to re-think their purchase. (This has occurred with door-to-door sales). The Association will also look at videotex as a means of disseminating quickly updated and easily retrieved information to large numbers of people.

For the VISTA field trial, the CAC will put up information, such as local price surveys, and national product testing information.

6. Educational Institutions

Of the six universities and one polytechnical institute interviewed, none is a VISAPAC member and only two plan to create pages for a field trial. Some are involved in computer-based or distance education; others see themselves as videotex brokers and consultants; still others are involved in "pure" research.

The OECA has been conducting a study on "Telidon and Education" and summarized problems in this area in Volume I of its 1980 report to DOC:

In general, progress in delivering content has been delayed because of the problems inherent in creating CAL (computer assisted learning) material within the present Telidon configuration (tree structure, numeric keypad), the lack of remote entry terminals, and computer to computer interfaces, and the hesitations produced in users concerning the problem for long distance charges in accessing the material.

The Authority also describes the reactions to Telidon of some potential educational IPs:

Some have said also that, until down-line loading [transmitting programs or data to the terminal for storage] to the user terminal is available, there is little to be gained by using textual/graphic communications devices.

Those educational institutions contacted for this study concurred and added their own comments. One university was unable to adapt to Telidon its more than 200 computer based programs for adult education because the Telidon keypad was inadequate for the conversion. A university spokesman pointed out that some kind of "intelligent front end system or keyboard will be necessary for computer-based or distance education". A representative of another institution argued that Telidon will have to compete successfully if it is to find a role in the delivery of educational services.

However, the University of Manitoba does plan to make use of the simple keypad, in a computer-managed learning experiment in the MTS trial. Its continuing education department will provide an economics course now generally available throughout the province in newspapers. This course will be complemented with exercises for field trial users, who would then be tested to measure learning. However, it has been difficult to interest staff in assuming the time-absorbing task of putting up pages, given that the sample of users is too small "to be creditable to the scientific community."

Carleton University in Ottawa will operate as a broker and sees itself as conducting practical rather than abstract research. The Carleton representative had created a number of pages for Statistics Canada and stored them in the DOC data base. He planned to create pages based on his own expertise as a third world specialist and in one of his university's specialities -- computer assisted cartography.

Another university broker, the Ryerson Polytechnical Institute in Toronto, began as an IP but has already established itself as a centre of expertise, particularly in the training of page creators. Three field trial operators were considering use of the training skills of the Ryerson group and VISTA now uses it exclusively. One key person in the Ryerson group is interested in distance education and is co-ordinating the activities of various provincial institutions to eliminate duplication of subject areas. Because Ryerson is a polytechnic institute, it will also teach its students about videotex.

The University of Quebec will provide consulting services and page creation seminars, as well as managing the data base for the Télécâble-Vidéotron field trial. This university, with its expertise in computer aided learning, has both an academic and practical interest in videotex as a medium and will likely become another centre of expertise.

To groups at two other universities, videotex was more of a research interest -- usually with respect to modifications in the technology itself or the possible social and cultural effects of the new medium. The University of Waterloo, for example, would like to test Telidon's features in extensive computer-assisted learning applications.

A research oriented group at York University, Toronto, is interested in the general social impact of videotex and also sees it as a tool to replace the blackboard or videotape recorders and slides. Although this group has created some pages based on a tutorial on communications, a spokesman said more extensive involvement would be premature until the system was operational and had stabilized. This view sharply contrasts with that of another respondent to whom creating pages was not a waste of time because most of the problems now discussed would be solved before anyone knew how to use the system properly.

Research clearly precedes delivery of information to the public as a reason for academic involvement with Telidon, although the desire to inform the public on political issues is also important. Academics also expressed concern about "commercial interests" taking over the medium and operating it at "an idiot level" for profit. In this view, a Telidon keypad offers no more "interactivity" than pressing buttons on a TV channel selector.

The interests of the academic community differ from those of commercial organizations. For educational institutions, videotex is a new way of carving out territory and attracting research money and prestige. A university that can expand the delivery of education outside its walls by employing computers and Telidon could affect the viability of other institutions without this capability, given that university grants are based on numbers of students enrolled.

C. IP CONTENT GOALS

Some IPs felt too little consideration had been given to text "because of Telidon's obsession with graphics." Others expressed concern that Telidon technology was unable to meet industry standards with respect to text editing and information retrieval. Still other complaints focused on the slowness of the system's response to requests for information, an important consideration given that the Canadian culture and economy have been conditioned to the speedy dynamic of TV advertising. The most frequent complaint, however, was the current absence of a capability to convert existing data bases automatically to Telidon use.

Organizations with computerized data bases expressed considerable concern about the absence of this capability. For example, to many educational institutions, this inability meant Telidon technology could not be employed in computer assisted learning although Telidon's eventual capability for down-line loading of user terminal memory renders computer based education logistically possible. For organizations such as the computer assisted cartography group at Carleton University with graphics already in digitized form, the labour intensive process of converting graphics back to analog form and then digitizing them again with IP terminals makes very little sense. What is needed is a software program to scan existing graphics, maps and photographs and automatically convert them for Telidon use.

These demands for a simple transfer of existing data bases may sometimes be inappropriate, and Telidon could conceivably force new thinking about existing data bases. For example, videotex information must be more streamlined and disseminated in a more creative graphic form than is the case with most existing data bases. Excess and fuzziness are incompatible with the medium and an IP must know how to define and route his or her information very clearly. Similarly, because Telidon is not a browsing medium, it assumes the user knows more or less exactly what he or she wants.

Existing data might be re-examined in light of videotex, to make existing information more accessible, or to computerize it. It is possible, for example, that Telidon needs might encourage the creation of a catalogue and library of past radio programs by CBC.

Telidon also blurs the boundary between information dissemination and promotion. The medium may not suit traditional "image" or intrusive advertising, inserted into other content. If people are seeking information they may not expect to find advertising pages dropped into their searches. Thus, advertisers, besides providing information related to what they do -- such as tour or airline schedules from travel agencies -- may expand into related content, such as travelogue kinds of descriptions, with perhaps only a small and relatively unobtrusive element of self-promotion. Alternatively, they may also

offer general interest information, community information, sports, local classified ads or games and add their corporate logo or a "hot flash promotion" as a line at the bottom of the page.

Traditional "information" may also take on promotional connotations as IPs figure out how best to display information so that people will request it. Page creation prices will no doubt vary widely for this reason. Most non commercial IPs and newspapers emphasized text rather than graphic on videotex. Other commercial IPs more often wanted to explore the unique possibilities of the medium. One called videotex "a tease medium." Another saw cultural acceptance as a problem because the medium's "true nature" is schematic, while the public is used to figurative communication. Many IPs expressed the more practical concern that winning social acceptance for Telidon might be difficult because home users, in contrast to business users, aren't accustomed to paying for information directly.

Telidon will also have a widely varying impact on the traditional mandates of IPs. In some cases, the new technology may permit old functions -- such as international corporate communications -- to be performed more effectively. In other cases Telidon may stimulate diversification into new activities.

Telidon, like other new technologies, will threaten some types of jobs and create others. Telidon could cause difficulties for certain institutions, such as advertising agencies or promotion departments by-passed by an IP project manager who goes directly to a broker for page creation services. As already noted, advertisers may also ignore newspapers, going directly to videotex. Existing audio-visual methods might have to make way for Telidon, for training and educational purposes. In closed user group applications, videotex could replace courier or post office services in government and industry.

Telidon is a new technology which has yet to take on an aura of inevitability and is still very much a tool to be shaped by executives in the organizations interested in promoting it. More than once, Telidon has been called "an executive toy" for just this reason, but such easy dismissals ignore the potential power of this new technology.

Chapter 5

THE BALANCE SHEET

A. Costs

The cost of becoming a Telidon publisher or information provider was assessed with respect to labour (voluntary or paid), equipment, and overhead. Overhead includes membership fees, market research and travel to attend seminars and keep abreast of the technology. In addition, brokers must set and administer prices for consulting, page creating, updating information and storage and processing.

Except in the case of organizations in the videotex business or commercial umbrella organizations which second existing staff or hire new people, most labour costs remain hidden. Non-profit organizations may have an even more confused sense of labour costs, as they have tended to use voluntary labour in the preparation of data bases and the entry of information into the computer.

The two retailers interviewed were very aware that data base design and page creation are technical jobs requiring skilled, creative staff. One respondent had assembled an in-house task force but was still buying page-creation services from a broker. One newspaper had seconded a staff member full time to prepare its data base of 200 pages, but still planned to hire a broker for actual page creation.

Infomart, the largest Canadian broker, employed seven creative and seven technical people as of April 1980. A second broker had three full time staff members and planned to hire graphic personnel on contract, while a third employed a data base planner, a salesperson, a graphic artist, a part-time researcher and a manager.

Production editors' salaries range from \$16,000 to \$21,000 and those of technical staff from \$25,000 to \$30,000. There is, of course, a universal shortage of technical personnel with computer training and several IPs cited the lack of trained and suitable production personnel as a constraint on their activities. The standards for production personnel are

also high. Infomart, for instance, looks for a combination of creative talent and a good visual sense as well as an ability to think systematically.

The time required to create a page on an IP terminal can vary from five minutes to several hours, depending upon the complexity of the graphic and technical capabilities of the hardware and software.*

Fraser Taylor of Carleton University provided a detailed breakdown of the person-hours required to create 18 pages for Statistics Canada. The Federal agency used its own manpower to help prepare the information and the pages were placed in the DOC data base. Eight person-days were needed for training and for the inputting and editing of pages; meetings, project planning, the preparation of materials and a report analyzing the IP process absorbed another eight days.

Labour costs are also higher than might be expected because editors can spend only limited amounts of time inputting (keyboarding) information. Two hour stints, to a maximum of four hours per day, may be all one can endure because of eye strain, backache and general fatigue. Several editorial production personnel expressed concern about the possible health hazards arising from use of IP terminals. However, very few studies have been completed on the hazards associated with using computer terminals in word processing or computer-aided learning applications generally.

The costs of becoming an IP may be partially gauged by examining brokers' charges to IPs. Infomart, now the only broker with published rates, charges \$30 for page creating, \$10 for page update and \$1 a month for each page in storage, but Infomart also provides volume and simplicity discounts.

* In October 1980, an OECA spokesman estimated costs of preparation ranging from \$6/pg. for text, \$11/pg. for simple graphics, and \$52/pg. for original, complex graphics. Some 10 pages per day with simple graphics could be produced. Infomart, on the other hand, thought only four per day were producible.

Another broker plans to charge about \$22-\$25 for creation and \$10 for update. A spokesman for this broker pointed out that if overhead costs and depreciation of capital equipment were taken into account, he would have to charge \$200 a page in order to make a profit at this early stage. For these very reasons, a third broker revealed plans to charge IPs from \$35 to \$100 a page, depending on the graphics involved.

Brokers' costs can, of course, be quite high. A Telidon compatible computer will cost a minimum of \$200,000 and a broker might have to pay \$30,000 for a single input terminal unless he gets the use of one free from DOC. The high cost of an IP terminal encourages the user to use brokers. For the present, however, in trials such as Bell's VISTA trial, information providers can use free equipment provided by the trial operator. OECA has operated similarly.

Additional costs for both IPs and brokers are by no means minimal. Membership in VISAPAC ranges from \$1000 to \$250 for voting and non-voting members respectively.* One respondent estimated the costs during his first year of VISAPAC membership, travel to meetings, information gathering and page creation seminars at \$3000.

At present, the comparative advantage of having pages prepared in-house or by a broker is unclear. Some argue that, for a small IP, it makes more economic sense to hire a broker; VISTA has been encouraging this approach. But the choice really depends on the kind of labour available in-house and the accessibility of IP terminals.

Costs were generally not cited as a major obstacle in becoming an IP. After experiencing the preliminary stages of IP activity and especially upon committing themselves to field trials, IPs seemed to view early high costs as a necessary part of any new publishing venture. However, the only public

* As of Oct. 2 these fees have dropped to \$500 for a voting member and have been raised to \$300 for a non-voting member. As before, VISAPAC will remain flexible in the cases of non-commercial IPs.

interest group interviewed, the Consumers' Association of Canada (CAC), cited costs as a major constraint because, in contrast to other organizations, it is neither subsidized nor funded by a parent company, nor does the profit motive propel its interest in Telidon.

B. REVENUES

The size of IPs' possible future revenues is difficult to determine, given that the question of pricing IPs' services has not yet been formally discussed by VISAPAC and is not yet an issue among the IPs themselves. This situation has arisen, of course, because users will not be charged during the present trial stage. It is likely, however, that there will be two charges to the user in the future.

First, the telecommunications carrier -- cable or telephone company -- could charge a flat rate service fee in addition to the normal rate charged for telephone or cable service. The carrier could also charge according to the duration of use of the system, or the number of pages selected or of other transactions.

Second, the IP would charge for use, taking into account factors ranging from time of day to the type of information provided. It should be noted that IPs may wish to provide some pages free and to charge for others.

In Britain, free advertising and routing of pages compose one third of an IP's data base. British IPs charge $\frac{1}{2}$ pence or at most one or two pence a page for information, while the charge for specialized business information is five, 10 or 15 pence a page.

The retailers interviewed said that they were not likely to charge for pages. Interestingly, non-commercial IPs, that is, those who would not describe their organizational motive as profit making, are as likely to charge for use as commercial IPs. For example, educational institutions may wish to base their rates on tuition fees for existing computer-aided learning or continuing education courses. The CAC may provide certain "public interest" consumer information free, but would tend to charge for price comparison information. The CBC might

provide large quantities of free public information while charging for heavy use of certain informational materials by educational institutions. Environment Canada might provide some core information free of charge, but charge specialized users such as the aviation industry.

For umbrella organizations such as Infomart, fees from consulting, training seminars, the sales of equipment and market research may help to recoup their large initial investments.

Without assistance, certain types of potential IPs will never have enough revenues to supply information via Telidon. For this reason, Infomart provides pages free to causes such as the United Appeal by a form of corporate donation. It is unlikely, however, that other public interest or advocacy groups would be given the same kind of access and there may be a need to establish a small public interest corporation in the same way public broadcasting was intended to balance commercial television. The OECA and likely the CBC, if one can judge by its plans, will perform a similar role to Infomart in respect to Telidon.

The configuration of the videotex system will obviously affect the relative costs and revenues deriving from future Telidon services. Up to the present, however, even such technical matters as billing remain undecided; no one is sure whether it should be performed by carriers or umbrella IPs for their clients or by individual data base owners. Ultimately, the CRTC may make decisions on such procedures as well as pricing and the configuration of videotex systems. But, in this early stage of the field trials, even most IPs lack strong opinions on these matters, though they are willing to express tentative views:

No objection to telcos running computer, but we would want to run our own host. We would like someone else to keep track of who uses what. It will come down to cost to the subscribers. It might be cheaper for them to call into a computer in their local area; in that case, we might update here and store in a computer in Sudbury, for instance.

- A Government Department

Depends on how you are going to charge. If there is no charge to the public for access, there is no reason for the carrier to be involved. If you charge on a per hit basis, it would seem natural for the carrier to do the billing. You would want to make sure the carriers aren't subsidizing their yellow page directories, which are after all competing with other IPs.

- Newspaper

There will likely be a variety of host computers, so you would want to have a co-ordinating body of some sort, as long as the co-ordinator keeps hands off content. I don't want somebody to say how many pages I can have. If you are a large IP, you buy your own computer and do your own billing.

- News Service

We should go the way of the French where the phone companies just provide a network, nothing else.

- Newspaper

Each data base is a person's own publication. Ultimately, the direction in which this will go is where users access IP-maintained data bases directly.

- Directory Publisher

Bigger IPs probably like the idea of user accessing IP-maintained data bases directly because it gets rid of the gateway and therefore competition. The gateway computer will be busy enough routing data. So we will likely get to the point of accessing directly.

- Directory Publisher

Chapter 6

CONCLUSIONS: GREAT EXPECTATIONS

With the exception of a few very optimistic and serious Information Providers, there would seem to be a trough in IP interest in Telidon. "We're really going to have to crank up their interest," observed one manager for a field trial operator.

Many of the problems which dampened IP enthusiasm were particularly evident among the educational IPs (whose actual experience is longer than most), but are likely to disappear as the system stabilizes and adds new functions.

Inflated expectations have been the main source of difficulty. The DOC and other Federal agencies have argued that Canada must have an industrial strategy and a communications industrial strategy, in particular. This would be particularly important because communications is one of the things Canada does best. This argument, as well as the world trade picture and Canada's trade balance, have generated considerable pressure to sell Telidon technology quickly at home and abroad before any other videotex technologies gain a foothold. DOC has done an excellent selling job in Canada, one good enough to eclipse another already developed videotex technology called Omnitex. But one result of this frantic selling effort has been the premature announcement of field trials -- before the necessary equipment was actually ready.

As a result, IPs have had to prepare for field trials with IP terminals that break down because they cannot take the pressure of continual use. Many IPs have taken to eliminating the bugs themselves. DOC has also not always arranged delivery on schedule. Meanwhile, the IPS terminals themselves have sometimes been inaccessible to certain obvious clients. Infomart and OECA have had the additional problem of working with the first generation of Telidon. All IPs want the new generation of IPS terminals to replace the current, often cumbersome inputting process.

Because the DOC data base is more developmental than operational, potential OECA clients, expecting to store and

display their data immediately, have experienced considerable frustration. As one put it, "no one wants to invest labour unless they can show an audience. We will not involve staff again until there is a proper system design, looking at data rate requirements for a large number of users."

The delays and breakdowns have also been troubling to non-commercial groups unable to show their work to an audience or even to their own constituency. More anxious still have been IPs who have risked large amounts of money in expenditures on staff, capital investments and rental space.

The staff of participating organizations have also been under pressure - especially at DOC where responsibility for developing the technology lies. The OECA, like DOC, has generated a lot of activity with a very small staff but some clients have expressed disappointment at a lack of follow-up meetings.

Tension can exist between the goals of field trial operators and those of IPs. Some trial operators describe the trials as tests of a technology rather than for videotex service, and for some, Telidon is a low priority: "It doesn't matter whether Telidon fails for us, our trial has a lot of other things going for it. Infomart obviously has a lot to lose from these field trials." Bell Canada, on the other hand, is emphatic about the central importance of an adequate data base in its trial.

In the IPs' view, the financial drain in waiting for market trials is considerable. For them, success of a trial depends less upon technology than upon the synergy between a number of IPs with well indexed, useful and aesthetically pleasing content. They tend to hint that DOC and the trial operators are overly concerned with the technology.

IPs, however, do not always agree on the role of the field trial operator. Potential Manitoba IPs worried that MTS was not assuming a strong enough co-ordinating role, while VISPAC has expressed concern that Bell with VISTA is taking too strong a role with respect to content.

These conflicting views and the problems they reflect are to be expected during the introduction and diffusion of a new technology. However, technology has never diffused as rapidly as computer and communication technologies in the last five years. In the past, technological diffusion was measured in decades. Telidon was first demonstrated in August 1978; two years later, it is expected that all systems should be "go".

The Telidon field trials in which the IPs are participating are part of an effort on the part of the Department of Communications to develop its own version of videotex. The Department hopes that Telidon, if successfully competitive and used at home and abroad, will bring economic gains to Canada, beginning at the manufacturing end with the supply of Telidon terminals. If videotex is eventually widespread, however, there will be even larger profits to be made in software and in database preparation; the Information Providers beginning now in Canada may have built a valuable expertise. Yet, for the moment, with no audience with terminals to form a market, the IPs may wonder at the wisdom of diverting time and money to content creation. The "chicken and egg" problem (whereby the supply of terminals and the creation of databases would each like to follow the other) is difficult to overcome.

In the long run, the problems arising from the current push for lightening diffusion of this new technology do not present the whole picture. First, most of these problems will be temporary. Second, there are still a few IPs enthusiastic and tenacious enough to risk time, money and reputation on videotex technology. As one of the respondents said:

We can't begin to know the final utility of Telidon, but by the time the technology settles down, we will only have begun to understand its nature. I don't mind spending time creating pages now and throwing them away in a few months. (But then again, I don't have to worry about costs.)

APPENDICES

ARTICLES OF ASSOCIATION

-of-

THE VIDEOTEX INFORMATION SERVICE PROVIDERS ASSOCIATION
OF CANADA

1. NAME

The name of the Association (hereinafter called "the Association") is "THE VIDEOTEX INFORMATION SERVICE PROVIDERS ASSOCIATION OF CANADA" or "VISPA".

2. REGISTERED OFFICE

The registered office of the Association will be situated in Ottawa, Canada, at 130 Albert Street, Suite 901.

3. OBJECTS

The objects for which the Association is established are:

- (a) The promotion, development and representation of the interests of its members with regard to their involvement in the videotex industry and similar videotex systems;
- (b) To provide for the exchange of information between members;
- (c) To promote standards leading to compatibility of videotex systems;
- (d) To encourage the unrestricted flow of electronic information;
- (e) To promote the protection of the intellectual properties of information providers (e.g., copyright);
- (f) To stimulate the growth of videotex systems which are economical and easy to use;
- (g) To ascertain the views of and provide facilities for conferring with and for encouraging the exchange of

views of all videotex information providers in relation to all matters which may affect their interests whether directly or indirectly and to communicate with Government whether national or local, the Legislature and any public body or authority or any person or institution in relation to any matter which may affect the interests of the videotex information providers whether directly or indirectly.

- (h) To develop and maintain standards of conduct which are in the public interest and the interests of the videotex industry as a whole;
- (i) To advance public education as to the users of the videotex industry and to educate those who are involved or interested in the videotex industry in all aspects of the industry;
- (j) To propose equitable forms of contracts and other documents used in the videotex industry and to promote the adoption of such forms of contract.

4. THE ORGANIZATION

The Association works through -

- the General Assembly (General Meetings)
 - the Council
 - the Committees
 - the Audit Committee
- (a) The General Assembly approves the accounts and decides on the budget and action programme.
 - (b) No business shall be transacted at any General Meeting unless a quorum of voting members is present at a time when the meeting proceeds to business; one third of all voting Members shall be a quorum.
 - (c) The General Assembly can reach conclusions through a circulation from its Council.

- (d) In the event of a matter handled through a circulation, a decision is valid when two thirds of all voting members have responded in writing in an appropriate period which has been fixed by the Council before hand.
- (e) Resolutions, if not otherwise decided by law or in these Articles, shall be taken by simple majority of the voting members at a meeting.
- (f) In the absence of the required quorum (one third of the voting membership) present at a meeting, the meeting shall be adjourned and a new meeting is to be called within six weeks. At this new meeting, decisions to be taken do not require any quorum of voting members present.
- (g) A member of the Council may be replaced prior to the expiration of his term at an Extraordinary Meeting of the General Assembly by a two-thirds majority of total voting membership.
- (h) If, during the duration of the one-year appointments, there is a vacancy created for any reason, then the Council may, at its option, fill the vacancy or allow the vacancy to remain until the next General Assembly Meeting provided that in the event there are vacancies created which would prevent the establishing of a quorum then a General Meeting must automatically be called as soon as possible.
- (i) The General Assembly elects, for the period of one year, a President, a Vice-President, a Treasurer and four other Council members. The number of Council members that must be present to form a quorum is four.
- (j) The work of the Secretariat of the Association may be given to a person or company not involved in the business.
- (k) A Council Meeting is called either by the President or the Vice-President as often as the business requires a meeting. If not otherwise agreed by the Council members, notice has to be served not less

- (l) The Council reaches a decision by simple majority vote of its Council members.
- (m) The Council will establish the necessary Committees and appoint and remove any person to be a member thereof i.e. a person from the Council, from the Membership or a third person. The Council will write Terms of Reference for each Committee.
- (n) Membership in the Association will be Corporate. There shall be only one personal representative of any Member who may serve at any one time as a member of Council.
- (o) Any Member may vote by proxy, which shall be in the following form or a form as near thereto as circumstances admit:

"The Videotex Information Service Providers Association of Canada " of
in the County of , being
a voting Member of the above-named Association,
hereby appoints of
or failing him , as its proxy to vote
for it on its behalf at the (Annual or Extraordinary,
as the case may be) General Meeting of the
Association to be held on the day of
1980, and at any adjournment thereof.
Signed this day of 1980."

- (p) All work taken on by members on behalf of the Association will be free of charge unless authorized by the Council. Any travel/hotel expenses have to be paid by the members unless authorized by the Council.

- (q) Signing authority for the Council on behalf of the Association requires two signatures, one of which must be the Treasurer's.
- (r) The Council appoints for the period of one year, an Auditor who will check the balance sheets and report to the General Assembly.

5. POWERS OF THE COUNCIL

- (a) To call meetings of the General Assembly as provided herein;
- (b) To direct the work of the Secretariat;
- (c) To poll members as required; [See 4(c) & (d)]
- (d) To pay bills;
- (e) To issue public statements on behalf of the Association;
- (f) To generally manage the affairs of the Association;
- (g) To appoint Committees; [See 4(m)]
- (h) To approve membership in the Association. [See 6 below]

6. QUALIFICATION OF MEMBERS

(a) There shall be two classes of members, hereinafter referred to as "Voting Members" and "Non-Voting Members". Save as expressly provided in these Articles of Association, the rights of Voting Members and Non-Voting Members shall be the same in all respects and the expressing "Members" shall be construed as a reference to both "Voting Members" and "Non-Voting Members".

(b) The Voting Members shall be such corporate bodies which have applied for membership in the Association and are videotex information providers or who have provided to the Council a statement in writing indicating the intent to provide content to a Canadian videotex system within a period of one year.

(c) Non-Voting Members shall be such corporate bodies which have applied for membership in the Association and are interested in videotex information provision and which are not currently eligible for voting membership.

7. APPLICATION FOR MEMBERSHIP

(a) Every corporate body which desires to be a member of the Association shall submit an application in writing to the Council.

(b) At the next meeting of the Council after receipt of any application for membership, such application shall be considered by the Council, who shall thereupon determine whether to admit or reject the application and, if the Council decides to admit the applicant, shall determine the category of membership to which the applicant shall belong.

8. TERMINATION OF MEMBERSHIP

(a) Failure to pay one's membership fee shall be cause for termination of membership by the Council;

(b) Conduct unbecoming a member shall be cause for the Council to immediately terminate membership.

In all other circumstances membership may be terminated by either a member or by the Association by giving not less than three months notice to the Secretariat in writing to the end of a calendar year.

In the event of notice being given on the part of the Association, a majority of two-thirds of members attending and entitled to vote at a General Meeting, is needed for this decision. Notice may be given without stating any reasons.

9. FINANCE

(a) Membership fees for voting and non-voting membership which have to be paid by each member are fixed at a meeting of the General Assembly and are non-refundable. In the absence of a decision to the contrary, the amount is due on 1st January each year.

- (b) At the end of each year, the Council will submit a Balance Sheet and the Income and Expenditure Account. The items on the Income and Expenditure Account have to be listed separately and in detail.
- (c) The Council will appoint and reimburse Auditors who will report to the Assembly at its Annual Meeting.

10. GENERAL MEETING

(a) The Association shall in each year hold a General Assembly as its Annual General Assembly in addition to any other meetings in that year, and shall specify the meeting as such in the notices calling it; and not more than 15 months shall elapse between one Annual General Assembly of the Association and that of the next. The Annual General Assembly shall be held at such time and place as the Council shall appoint.

(b) All General Assemblies other than Annual General Assemblies shall be called Extraordinary General Assemblies.

(c) The Council may, whenever it thinks fit, convene an Extraordinary General Assembly. If at any time there are not within Canada sufficient Council members capable of acting to form a quorum, any Council member or any two Voting Members of the Association may convene an Extraordinary General Assembly in the same manner as nearly as possible as that in which General Assemblies may be convened by the Council.

11. NOTICE OF GENERAL MEETINGS

(a) The General Assembly decides on all matters which are not otherwise regulated by law or by these Articles, or which have not already been decided at earlier meetings.

(b) Assemblies are called by the Council. Notice of the meeting, together with the specification in general terms of the nature of the business to be conducted should be sent out not less than 30 days in advance of the meeting.

(c) An Extraordinary General Assembly may be called by one-third of the members of the Association or by the Council.

12. VOTES OF MEMBERS

(a) (i) Only Voting Members shall be entitled to vote at General Assemblies. Every Voting Member shall have one vote.

(ii) Non-Voting Members shall be entitled to attend at General Assemblies but shall not be entitled to vote.

(b) No Voting Member shall be entitled to vote at any General Assembly unless all fees presently payable by him to the Association have been paid.

13. INDEMNITY

(a) Every member of the Council, the Secretary, and other officer of the Association shall be indemnified by the Association against any liability in relation to the affairs of the Association.

(b) The Council as soon as possible will have the authority to purchase any and all insurance necessary to indemnify the members of the Association for any liability incurred by reason of the actions of any member of the Council, the Secretary, and other officers of the Association.

Telidon and Education, Document 4

Principles of Agreement between the OECA and Information
Providers participating in the Telidon and Education Field
Trial, 1979-80

1. Objective

The fundamental objective of the Telidon and Education Field Trial is to give participants the opportunity to explore the potential of Telidon technology for educational applications. (Telidon technology includes, for the purposes of the Field Trial, both broadcast and phone-link modes.)

2. Voluntary Commitments

Towards the attainment of the fundamental objective of the Field Trial, the OECA and participating Information Providers voluntarily undertake to contribute specific resources to the enterprise.

3. OECA Contribution

- a) The OECA undertakes to bring to the enterprise a broadcast network facility, and, with the aid of resources provided by the Federal Dept. of Communications, access to available Telidon technology, including one or more entry terminals, up to 55 user terminals, and one or two host computers. The OECA's Telidon and Education project team is available within the limits of its resources to play a facilitating role, demonstrating the operation and reach of the entry terminal, consulting on the organization of the data base, illustrating presentational factors, and so on.
- b) The OECA undertakes, within limits determined by available funding, to allocate resources towards the cost of operating user terminals.

4. Information Provider Contribution

Information Providers bring to the enterprise a product of their own choosing. This could be a page sequence previously produced and perhaps modified somewhat to accord

with Telidon technology and the organization of the data base; or it could be a sequence produced specifically for the Field Trial.

5. Respective Responsibilities

- a) The entering of page sequences into the data base via the entry terminal is the responsibility of the Information Provider, with the assistance of OECA's project team. Graphics require access to an RGB 500 entry terminal -- for bookings, Janet Webb, (416) 484-2930 -- but it may be possible to use existing alpha-numeric terminals for remote entry of textual sequences into the data base.
- b) Formative evaluation of sequences is the concern of each Information Provider, assisted where resources permit by the OECA. Summative evaluation will be a joint venture of the Information Provider and the OECA on some basis to be agreed upon by the two parties.
- c) In principle, responsibility for the accuracy of content as supplied is the Information Provider's, and the OECA undertakes not to edit unless expressly authorized to do so by the Information Provider. Where the content is distributed by broadcast means rather than by telephone, the OECA is subject to whatever regulations apply under existing legislation and may find it necessary to refer the content of a given page back to the Information Provider.
- d) In the case of teletext (broadcast mode) the daily selection and display of up to 200 pages drawn from the reserve data base are the responsibility of the OECA, the responsibility to be exercised after initial consultation with Information Providers.

In the case of the interactive mode (phone-linked), it is anticipated that the availability of a large data base will render unnecessary any process of selection.

- e) Responsibility for the pattern of deployment of user terminals lies with the OECA, following criteria suggested in the proposal, Telidon and Education 3. Consideration will be given to representation of the

client group(s) that Information Providers have in mind in relation to their content sequences.

Because of the limited supply, rotation of user terminals among users and Information Providers may be necessary over the life of the field trial. The desirability of Information Providers' having user terminals on site during the period of formative evaluation of content is recognized, subject to availability. Having in mind the limited supply of user terminals, deployment of such terminals on site during the summative evaluation phase will be to representatives of various targeted client groups.

6. Page "Headers"

In order to convey to the user an accurate impression of the derivation of the test service offered by the Field Trial, the "header" information on the top line of each page will consist of the information TV ONTARIO TELIDON FIELD TRIAL, presented unobtrusively. "Header" information on the second line will be given more graphic prominence, and will consist of the name of the Information Provider, and the page number.

Reference: Maria Cioni
OECA

VISPAC - VIDEOTEX INFORMATION SERVICE PROVIDERS
ASSOCIATION OF CANADA

A Description of the Organization (April 1980)

VISPAC, founded November 26, 1979, is the only association for videotex information providers in Canada. Membership by April 1980 was 32, of which half were voting and the rest non-voting members. Though the fee has been described as flexible, the former pay yearly membership fees of \$1,000, the latter, \$250.*

The members at present include five field trial operators, seven newspapers, three universities, two directory publishers, one market research company, two government departments, two broadcasters, two retailers, two computer service bureaus, two U.S. observers, one citizens' organization and three videotex businesses. Clearly, VISPAC comprises diverse, often competing interests and gives them an opportunity to sit down together at the same table. As a field trial project manager put it, "Some of the strangest bedfellows you'd ever imagine are talking together at this field trial stage."

VISPAC's functions are described in its "Articles of Association" (Appendix 1). Its main objectives are: to promote videotex standards; to ascertain the views of its members and promote, develop and represent their interests; to encourage exchanges of information; to develop and maintain standards for conduct within the industry; to strengthen protection for IPs intellectual property; and to encourage the unrestricted flow of information.

To this end, VISPAC intends to hold one annual General Assembly for members, as well as other meetings when necessary. VISPAC also has a monthly newsletter and its executive Council meets twice a year. Committees are to be established around issues of concern to members.

One such Committee is the VISPAC Standards Committee, appointed after interested members had developed a list of 16 compatibility concerns (Appendix 4), arising from the possibility of conflict between field trial page specifications. VISPAC has presented these concerns to telephone company videotex project managers, DOC and a TCTS technical group. Three field trial operators have now said they look to VISPAC for direction and expect to follow standards set by the Association.

* As of October 1980, the membership fees for Voting Members were reduced from \$1000 to \$500 and those for Non-Voting Members were raised from \$250 to \$300.

The Standards Committee has outlined four major study areas: practice guidelines for page production and terminal operation, uniform symbols and character strings in new keypads, and newly designed tree structures, alternate retrieval techniques under development and cross referencing, and content structure of the header editor.

The Committee is also drafting a questionnaire on standards to be mailed once a month to each field trial and host computer operator. Similar questionnaires on other issues should help keep members in touch with rapid changes in this very fluid industry.

Because of its concern with standards, VISPAC has taken the position that the majority of user terminals in the trial should be connected to the television by the RGB (Red, Green, Blue) input rather than the RF (Radio Frequency) input.

RGB refers to bypassing the normal television filters, which are unnecessary for computer based information, to allow a higher resolution (clearer picture) than with RF. In addition, an RGB input makes 40 characters on 20 lines available to the IP in contrast to only 32 characters on 16 lines with RF. IPs prefer the RGB input because they wish to present their information as effectively as possible to potential users. Some do, however, acknowledge that the RF input has one distinct advantage: with RF input, a Telidon terminal can be connected to an existing home television set; with RGB input, a new set is now needed at a cost of \$650 or the old set must be modified, thereby voiding all manufacturers' warranties. The carriers tend to argue that Telidon will likely achieve greater market penetration with RF input because users will not have to buy expensive new TV sets. In future, however, this cost differential could cease to exist if new TV sets are built with an RGB capability.

VISPAC is asking all trial operators -- with the exception of VISTA -- to purchase the necessary TV sets so that IPs can create the same pages for all field trials. The issue had not been resolved by May 1980.

Attitudes towards VISPAC are extremely varied. Non-member IPs, actual and potential, tended to be very critical -- especially representatives of universities with an interest in field trials. Most non-members seemed to have little idea what VISPAC was actually doing -- for example, its lobbying for videotex standards. One university spokesman expressed the

fear that its efforts might be "misused" by commercial organizations. A representative of another non-member university commented, "The medium, like VISPAC, would be controlled by people who want to make money." Yet another saw VISPAC as very commercial, intending only to use "Telidon at an idiot level so VISPAC members could make money." One respondent even wanted to form "a counter-VISPAC organization" because he feared "VISPAC would squeeze out the creative energy in the home computer field." He also said the \$1,000 fee was too high and that the organization would "become a guild." However, his criticisms seemed to be directed less at VISPAC than at the possible adverse social impact of an information utility employing videotex.

Of the 33 VISPAC members, only three had reservations. A representative of one critical member admitted joining because he wanted his organization to be taken seriously and expressed the desire for more hard technical information to help him as an IP. He was also concerned that competing members might not want to share information and that he might be giving out information to a possible competitor. Another member was worried about the lack of representation for community and other public interests in the Association. Though this member said the Association was very useful in establishing contacts, he echoed the previous respondent's concern about insufficient technical information and complained there were too few meetings. Another member said VISPAC was too political and theoretical in its approach to videotex and needed more "live" business representatives to be successful. He argued that most members would only create "dead information" -- in other words, news, historical and education information.

Predictably, the most involved members -- the voting and executive Council members -- were more positive about VISPAC. "It is a very important organization, considering that without it we (the IPs) would be up against the momentum of Bell Canada," said one member. "We want to show them that we aren't dependent upon VISTA." A second commented: "It is very much needed in these development stages. VISPAC represents IPs before DOC and field trial operators who can get too involved in the technology. After all, it is the data bases that are going to make this thing a success." A third praised VISPAC for doing an excellent job of representing its members' interests before the Canadian Videotex Consultative Committee, an organization made up "of bureaucrats, none of whom had to put themselves on the line by actually putting up pages." Only "the very inventive DOC personnel who came up with Telidon" were exempted from harsh judgement.

SOURCE:

VIDEOTEX INFORMATION SERVICE PROVIDERS
ASSOCIATION OF CANADA,

NEWSLETTER MARCH 6, 1980

Compatibility concerns in field trials

Note: The order of appearance herein does not necessarily designate priority.

1. Red, green, blue (RGB) versus RF input. VISPAC has taken the very strong position in relation to Bell VISTA trial that all, or the great majority of sets in that trial should be connected to the television by the RGB input. Our reasoning is quite simple: first, having seen the difference between RF and RGB input in terms of resolution and the ability to read graphics, we are convinced that only by putting its best foot forward can Telidon make a significant impression upon the marketplace. With RF input, one is limited to 32 characters of 16 lines and this means that only 63% of potential characters can appear on the screen when compared to 40 characters of 20 lines. There is simply no comparison between the quality of resolution in RGB input and the much inferior quality of RF.

Second, as information providers we are naturally desirous of having the greatest cost efficiency possible in the circumstances. That cost efficiency can only be achieved with RGB input.

We understand that the issue is basically one of dollars and cents. With RF input a Telidon terminal can be connected to an existing home television set; with RGB input either a modification is required or a new television set must be purchased. In the event that there is modification, the warranty on the television set is likely to be voided, thus causing all manner of problems for the system operator. A new color TV set obviously costs money - about \$650.

We suggest that field trial operators should ensure RGB input by purchasing the necessary television sets and in the event that further funds for this purpose are not available, that the number of total terminals in the trial be reduced to accomodate the additional expenditure for

television sets. Further, as in many other issues we would like to be able to create one page for all field trials rather than creating many different versions of the same page if some operators use RGB and others use RF. Therefore, we hope that the operators will agree that RGB input is the correct route to go.

2. Menu design. IPs require that there be no number dependency between the top levels of indexing controlled by the carriers and the IPs' numbering system. The connection between the two would then be by cross-referencing. For example, all carrier index pages should begin with the digit 0, while all IP pages should begin with the digits 1 through 9. Then a carrier index page (say, 052) could be cross-referenced to any IP's index page without any other direct connection.

We also believe that there should be two kinds of indexes agreed to by each of the field trial operators - an index of information providers by name with their access numbers, and a subject index with the names of information providers listed under subject headings agreed to in advance.

We think that four digit numbers should be allotted to information providers on an equitable basis so that in the future we avoid the problem of having to renumber pages when the number of IPs goes beyond 999. Ideally, an IP should have the same four digit number in all parts of the country, but we recognize that this is an ideal and will not necessarily be a reality.

3. Page numbers. A page on a data base should have the same number regardless of the routing choices the router used to access that page. That is to say, page numbers must be absolute rather than logical.

This will enable the user to access pages directly when the system applies a single unique number to each and every page for each and every access.

4. Headerfields and structure. Since IPs are desirous of placing the same pages on different field trial systems across the country, it is highly desirable to have consistency in the headerfields of pages and in any structures related thereto.

5. Cross-referencing. It must be possible for the information provider to allow users to access any page in the data base from any other page in the data base by keying a one digit number.

Any restrictions on total free cross-referencing as described above involve preconceptions of how information providers will want to structure their information (i.e., in document versus index pages that are arbitrary and likely to be wrong).

Data base structure is the single most important element in IP data base creation, and any changes or restrictions on the structure have significant implications for the form and context of the data base.

6. Videotex and teletext capability.

There are two issues here. A) There are some information providers who will wish to create a page for a videotex field trial and also to see that page in a teletext field trial. If at all possible, IPs would like to see the capability of interchange of pages between videotex and teletext systems using Telidon. B) IPs who are planning to become involved in teletext are most anxious to have terminals in field trials capable of receiving both videotex and teletext material.

VISPAC - DRAFT CODE OF ETHICS
SEPTEMBER 30, 1980

Recognizing the right of freedom of expression, VISPAC affirms the right of information providers to display on videotex and teletext systems any content of their choice. In the preparation and display of all content on public videotex and teletext systems, VISPAC members agree to abide by the laws and regulations of Canada and the respective provinces, as they apply to the medium, and in addition, agree to conform voluntarily to the following Code of Ethics:

1. The name of the organization or individual providing content on a videotex or teletext system shall be clearly stated on each frame and that organization or individual shall be fully responsible for the content contained on those frames, to the extent that the content is within the control of the information provider.
2. All content prepared and/or displayed by an information provider shall be accurate and shall not be designed to mislead or misrepresent. Topical content shall be kept up to date.
3. Each information provider will respect copyright ownership of another information provider's content. No information provider shall utilize content from another medium or another videotex or teletext system without the specific permission of the copyright holder or owner.
4. All frames whose purpose or intent, directly or indirectly, is to promote the sale of goods and/or services shall bear an identification stating that the content is an "ad" or "advertisement". All such advertisements shall conform to the code of ethics of the Canadian Advertising Advisory Board.
5. Where an information provider offers direct purchase of goods or services using the two-way facility of a videotex system, the user must be in no doubt as to the consequences of using response frames with respect both to financial obligations thereby incurred or to voluntary disclosure of private information.

6. Recognizing that videotex will serve persons of all age groups, backgrounds and value systems, no information provider will display content which is grossly offensive to users.
7. No information provider shall display content which offers unqualified or non-professional advice which may affect the physical or mental health of the user.
8. No content shall be displayed by an information provider which may result in harm to children physically, mentally or morally, or which takes advantage of the natural credulity and sense of loyalty of children.
9. No information provider will oppose in any way the principle of freedom of access to videotex and teletext of any other existing or potential information provider.
10. No information provider will collect or cause to be collected any data or information about a user which is not necessary to the specific conduct of the information provider's videotex or teletext operations, and no information provider will disseminate any such information or data on the basis that a user may be identified or his/her privacy violated, without the expressed consent of the user.
11. Where a complaint is made relating to this code of ethics concerning the actions or content displayed by a VISAPAC member, and if a satisfactory resolution has not been reached within a reasonable period between the complainant and the information provider, the complaint may then be submitted to the Ethics Committee of the association for consideration and disposition according to such rules as are adopted by VISAPAC.

Appendix A

Definitions

With respect to the VISPAC Code of Ethics, the following definitions will apply:

VISPAC	Videotex Information Service Providers Association of Canada
Videotex	Any system whereby a user, operating a simple keypad or keyboard, accesses content stored in a remote location on an interactive basis, over paired wire or coaxial cable, for display on a television set or other device sold for the purpose.
Teletext	Any broadcast system which acts as a frame-grabbing device by transmitting content in the vertical blanking interval or on a full channel for access by the consumer using a keypad.
Information Provider	Any person or organization which prepares and/or displays content on a videotex or teletext system.
Frame or Page	Any amount of content displayed on a videotex or teletext system under a specific single identifying number.
Content	Any material, static or interactive, which is displayed on a videotex or teletext system.

Canada