A Case Study

for the

Science Council of Canada's

Study of Public Awareness $Q224.3$

of Science and Technology in Canada

THE TELIDON PROGRAM

OF THE

DEPARTMENT OF COMMUNICATIONS

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- Final Report -

Prepared by:
M. Chetcuti,
Government Projects Division
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Science & Technology,
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TELIDON

Introduction

Videotex is a name used to refer to public-accessed, interactive, information retrieval services which use domestic television receivers, suitably modified or supplemented, as terminal equipment. Users of videotex systems are able to retrieve, via the common-carrier telephone lines or cable TV, information stored in computer-controlled data bases and have it displayed on their augmented TV receivers or video business terminals. They can access textual information or graphic images from data banks by conducting systematic searches using simple numeric keypads. Individuals with slightly more complex terminals are able to compose their own information to be stored in the data banks for access by others. In the future, when mass production reduces the cost of electronic components, individuals will be able to see the same images displayed on their individual television screens. Such systems allow the introduction of many different services for home and business applications. Electronic newspapers, electronic mail, electronic advertising, electronic games, business transactions and many other services are all possible with the new communication technology.

In operation, a subscriber to videotex would be able to select from a number of "pages" of material which he may wish to display and view. A "page" in this context refers to the information that can be displayed on the screen at one time.

Information suppliers would provide a central data bank of information covering a wide range of topics. A subscriber selects the information he would like to have by keying the appropriate number into a keypad attached to his television set. As an example, a user who wishes to know the latest sports scores selects the sports page which then presents him with a list of sports to choose from. By keying in the selection for hockey, the current hockey scores would be presented.

It would be useful at this stage to distinguish between videotex and teletext services. Whereas videotex systems are interactive and allow the user to access computer stored information, teletext services are one-way information transmission and retrieval systems employing a broadcast mode of transmission for data signals. A teletext user with a decoder and TV set may "grab" a page as it is being broadcast and display it on his TV screen. The term videotex, however, has been used by some telecommunications standards bodies to refer to both one-way and two-way systems. The rationale for this is that there should be no need to separate the two types of systems with different generic names since they essentially provide the same type of services, that is, access to data banks containing pages of text or graphic information for use by the public.

Two broadcast teletext services, Oracle and Ceefax have been developed in Great Britain by the BBC and the Independent Broadcasting Authority. They now give British viewers ready access to news, weather, community entertainment guides, and other general interest topics. Viewers who have special decoding equipment may select from more than one hundred pages of material which are broadcast in a continuous loop on a normally unused portion of the television signal.

It was while the British Post Office was exploring the possibilities of videotex technology that it came up with Viewdata, now known as Prestel, using telephone lines to transmit more information in terms of quantity and variety than either Ceefax or Oracle. Prestel is a two-way service which could allow viewers to participate in televised opinion polls, perform calculations, or otherwise respond to the information displayed on their screens.

The British Post Office launched the Prestel test service early in 1979 with 1500 user sets - almost all new TV sets equipped with built-in decoders. It committed $40 million for 1979 to set up 25 Prestel centres across Britain, each equipped with dual computers to provide sufficient capacity to service 100,000 customers.

The relatively large number of companies that have purchased Prestel software is partly due to the early lead gained by the Post Office in this field. Early purchasers such as the

post and telecommunications authorities in West Germany and the Netherlands saw the merits of buying a system that was already operational. Outside Europe, Hong Kong, Singapore and the United States have bought Prestel software. After discussions with the British Post Office, Sweden and Finland began developing their own videotex services and both now have pilot trials underway.

In France, the French Television and Telecommunications Research Centre has developed a coded display called Antiope, and a broadcast packet system called Didon, which together form a teletext system.

France's TV authority already offers a number of teletext services, including weather reports and stock exchange information. In September, 1980, the French PTT (the national post and telecommunications authority) will market test its videotex service, known as Teletel, in the Paris suburb of Velizy, using terminals in about 3,000 homes.

Unlike the British Post Office, the French PTT will only provide the networks; other service operators will be free to set up and operate any information service they wish using their own computers. Already several government agencies and 140 organizations from the private sector have indicated their intention to supply information for the service.

Starting in 1981, France's telephone subscribers will have access to an electronic directory service using low-cost videotex terminals, which the French PTT will install free of

charge. From its inception in Britanny, the service will be gradually extended to the whole of France by 1992, accounting for some 30 million terminals.

Telidon is both a videotex and a teletext system which the Department of Communications believes represents a significant technological improvement over the European systems. Developed at the Department of Communications' Communications Research Centre, Telidon - from the Greek words meaning "I see (idon) at a distance (tele)"- is more flexible and can more easily accommodate future growth and improvements. As the European systems are character-oriented, they restrict the information displays to fixed format textual messages and rudimentary graphic images. Moreover, once a large number of terminals using these types of communications and display techniques are in homes and businesses, it will be difficult, if not impossible, to change to new communication methods in the future.

Superior quality graphics make Telidon the first in the second generation of interactive technologies. Using the more sophisticated alpha-geometric method, Telidon has improved the graphic image from a crude outline composed of a pattern of squares or building.blocks (the alpha-mosaic process used by both the British and French systems) to a reproduction much more closely resembling a photograph. With this imaging technique, Telidon can display charts, diagrams, cartoons, maps and photographs in much finer detail than other existing

videotex systems. This valuable feature could allow a prospective homeowner, for example, to discuss details of a new home with an architect located in a distant city. Perhaps the most exciting potential for such multicolored graphic displays is in distance education. Students and teachers, although geographically separated, could carry on an educational dialogue using their TV screens as a common electronic blackboard.

The basic Telidon system comprises the following elements:

(a) A visual display unit consisting essentially of an ordinary or slightly modified TV set.

(b) A calculator-like keypad or typewriter-like keyboard by which a subscriber can gain access to the information available.

(c) A central computer to store the information and to distribute it to the user. The material stored in the computer's memory will be provided by information suppliers such as news-gathering organizations, governments, financial institutions, publishing houses, retail outlets, and even individual entrepreneurs operating from their homes or offices.

(d) A communications link to carry the information between the computer and the subscriber. Communications between computer data banks and the Telidon set can be provided by standard telephone lines, two-way video

cable or even optical fibres. Information in the Telidon computer could also be broadcast to the subscribers' sets. In this way a few thousand pages of information are broadcast consecutively. Subscribers choose the page they want to see, and the Telidon terminal finds it within a few seconds, then translates it into a form suitable for display on the TV screen.

(e) <u>A Telidon adaptor to translate signals exchanged between the subscriber and the central computer.</u> An adaptor converts incoming signals into texts and images suitable for visual display. The adaptor also converts the instructions or messages entered by the subscriber into a form suitable for transmission on the communications link. This unit may be attached to the domestic TV set or, later on, installed during the manufacturing process.

History

In April 1973, the federal government's Green Paper on Computer Communications Policy noted that the key element in the current revolution in information technology has been the bringing together of the technologies of telecommunications and computers. This has led, the Green Paper stated,

"to the perfection of techniques for employing telecommunications channels to directly connect individuals, whether in their offices, schools

or homes to centrally located computers or
databanks. These computers and databanks can
again be connected via communications links, to
create computer/communications information networks
which someday will blanket the globe".

Following the publication of the Green Paper, a small
research unit was established at the Communications Research
Centre (CRC) of the Department of Communications. The CRC
quickly became immersed in a class of general problems related
to the communication of graphical images via the telephone line.

Several special purpose systems were developed over the
years for military and other applications. In 1976, a techno-
logy transfer agreement was signed with Norpak Limited of Pakenham,
Ont., under which Norpak was licensed to use the CRC technology
for the development and sale of commercial graphics terminals.

The CRC developments were primarily in software - that
is, they related to development of the concepts and the
necessary computer programs which allowed graphical images to
be rapidly and easily created and efficiently transmitted.
Norpak designed and developed the hardware in which the
software was clothed.

In 1977, when the importance of the British Prestel system
had been realized within the Department of Communications,
Herb Bown, manager of the research unit, was asked to create
a simulation of Prestel using his laboratory graphics
system. As the simulation software was being demonstrated,

Mr. Bown indicated some reservations about the design
of the British videotex system and suggested that the CRC
could develop a better one. Therefore, a short time
later, using the experience gained since 1973, CRC developed
the first Telidon system (though not yet of that name). It was
used primarily for giving briefings, since its graphics, projected
on a large screen display, made a most effective briefing tool.
While being used in this way, the fledgling system attracted the
attention of the Minister and Deputy Minister who quickly understood
its significance and potential.

By mid-summer 1978, DOC officials discovered that several
broadcasting, cable TV and telephone companies in Canada were
either copying or purchasing videotex systems, some of which
were modelled on the French and some on the British videotex
developments. The decision was thus taken to hold a press
conference in order to demonstrate the Telidon system (then called
simply "Canadian Videotex") so that those considering investing in
videotex systems would at least add Telidon to their list of
possible choices.

Telidon was unveiled at a press conference and demonstration
on August 15, 1978. Communications Minister Jeanne Sauvé said in
a statement at the time:

"With interactive television technology, we have the
opportunity to introduce a system designed and
manufactured by Canadians, and developed according
to Canadian social and cultural needs - not those of

other countries. It may be our last opportunity to
innovate and refine a Canadian technology that
will ensure a strong domestic electronics industry
and contribute to the strengthening and enrichment
of our cultural sovereignty."

Since that time, several significant events and develop-
ments have occurred. The following list (gathered from such
sources as DOC news releases, magazines and newspaper articles)
briefly highlights in chronological order the recent history
of Telidon:

(1) February 20, 1979 - Communications Minister Jeanne
Sauvé and Don Cruickshank, President of the Canadian Telecommunica-
tions Carriers Association, signed an agreement for a joint $6.1
million field trial of fibre optics technology, to take place in
Elie, Manitoba. Telidon would be one of the new services to be
tried out during the project.

(2) April 2, 1979 - Communications Minister Jeanne Sauvé
announced at the Canadian Cable Television Association's
annual convention in Toronto that the federal government was
committing $9 million in a co-operative program with industry
to further the development of Telidon over the next four years.

(3) July, 1979 - Telidon was successfully tested using
the Hermes communications satellite and a portable earth
station, opening the possibility of Telidon service to remote
areas of the country.

(4) July 20, 1979 - Communications Minister David MacDonald announced that DOC was to supply the Manitoba Telephone System with 19 Telidon user terminals and 6 information provider terminals for a major field trial.

(5) August 28, 1979 - Bell Canada President J.C. Thackray and Communications Minister David MacDonald announced a co-operative, $10 million venture on Telidon consisting of a field trial using 1,000 user terminals. Bell Canada had previously been testing a system of first-generation, alpha-mosaic technology under the name of Vista. Mr. MacDonald commented at the press conference that "the reaching of this agreement with one of the world's largest, most technologically-advanced common carriers is the biggest milestone to date in the development of videotex services in Canada".

(6) September 20, 1979 - An electronic newspaper to be delivered via Telidon on an experimental basis in Canada and across the Atlantic simultaneously was a feature of the Department of Communications' exhibit in the Canadian pavillion at Telecom '79 in Geneva - the prestigious international telecommunications exhibition sponsored by the International Telecommunications Union.

(7) October 12, 1979 - Communications Minister David MacDonald and the French Ambassador to Canada, His Excellency Xavier Daufresne de la Chevalerie, signed a memorandum of understanding related to research concerning common problems associated with videotex system design.

(8) November 15 & 16, 1979 - The first meeting of the Canadian Videotex Consultative Committee (CVCC) was held in Ottawa. On the initiative of the Department of Communications, twenty-seven persons from the private and public sector met for two days to provide advice to the Deputy Minister of Communications on all aspects of videotex development in Canada.

(9) November 26, 1979 - The Videotex Information Service Providers Association of Canada (VISPAC) officially came into being at a meeting of prospective information providers in Toronto. It was formed to promote the use of videotex systems and to represent the common interests of its members.

(10) February 1, 1980 - The Department of Communications and the Ontario Educational Communications Authority (OECA) announced the launching of a one-year trial program encompassing both technological field tests and development and exploration of potential educational applications of broadcast and inter-active Telidon. Thirty-five pages of Telidon text and graphics were experimentally broadcast by TV Ontario, OECA's educational television network. First public demonstrations of this broadcast began on February 1 at the 1980 television conference of the Society of Motion Picture and Television Engineers in Toronto.

(11) June 2-20, 1980 .- Study Groups I and VIII of the International Telegraph and Telephone Consultative Committee (CCITT) of the International Telecommunications Union (ITU) met in Montreal and decided to recommend to the ITU that Telidon be included in the world standards for videotex.

(12) June 6, 1980 - Communications Minister Francis Fox announced that Telidon had been selected for the first United States consumer trial of teletext, to be conducted at PBS station WETA in Washington, D.C., starting in late 1980.

(13) June 18, 1980 - Communications Minister Francis Fox announced that 40 Telidon terminals would be supplied to the Manitoba Telephone System's Project Ida in South Headingley, Manitoba, in which 100 homes would be provided with advanced communications services.

(14) July 8, 1980 - It was announced that Venezuela had chosen the Telidon videotex system for use in a major government project in·Caracas. The initial system, to be installed in December 1980, will include 30 user terminals and 6 information provider terminals. Telidon will be used in the System for Orientation and Information, a high profile project of the Venezuelan government designed to respond to the problem of disseminating government information regarding social services, education, statistics, health and other services to the public.

Public Awareness of Telidon

A. Media Relations

When Bernard Ostry, at the time the recently appointed Deputy Minister of the Department of Communications, was given a demonstration of the Telidon videotex system developed by the Communications Research Centre, he realized its great potential and significance. It was due greatly to his decisions and actions that Telidon was removed from the laboratory and put into public view. He may have seen Telidon as a promising, high visibility program for DOC. Mr. Ostry had also been very interested in the various aspects of what was termed the computer or information revolution.

He commented on this in a January 30, 1979, article in the _Globe and Mail_ by saying that "Canada is going through a revolution whose social, economic and cultural effects are likely to be more far-reaching than most of us can imagine, more drastic in its transformation of human lives and society than any revolution in history". He went on to emphasize that Canadians must be made aware of the various and complex aspects of the new technology and that what was needed was "a great deal more intelligent public discussion followed by action".

Initially there was controversy within the Department of Communications about going public on this project. However, when it became known that several broadcasting, cable TV and telephone companies in Canada were either copying or purchasing European-designed videotex systems, DOC decided to inform the public about the Telidon videotex system and did so at a press conference and demonstration on August 15, 1978. With this step, DOC undertook an aggressive, sustained public awareness and media relations campaign.

DOC's public awareness efforts with regard to Telidon were aimed at reaching as many of the public as possible, and convincing them of Telidon's capabilities and potential. Frequent press releases and news conferences kept reporters well aware of recent developments. Whenever possible, one-on-one relations between DOC personnel and the media were established. Departmental officials wrote many articles in various trade and popular magazines describing the Telidon system. Numerous demonstrations of Telidon equipment and technology were given in trade shows and exhibitions throughout Canada and the rest of the world. Brochures were printed and distributed outlining in simple language Telidon's features and capabilities. Much more

technical information was readily available for specialists in the field and potential purchasers. In February of this year, DOC produced the first issue of <u>Telidon Reports</u>, a newsletter intended to help keep those interested in Telidon informed about significant developments.

A videotape presentation was produced which described the technical features of Telidon, and DOC became associated with the production of a major TV-Ontario television series which focused attention on Canadian videotex developments, in addition to other advances in communications technology. A major exhibit was developed which provides for Telidon demonstrations and hands-on use by the public. This has been shown, so far, in Geneva, and at the Museum of Science and Technology in Ottawa and the CNE in Toronto.

Whether or not DOC officials specifically had it in mind, it becomes evident from an examination of the department's media relations campaign that the target "public" could be divided into four distinct groups: (1) the Canadian government itself, including DOC management, as well as the major decision makers, the Cabinet; (2) the telecommunications industry including carriers, cable TV companies and information providers; (3) potential purchasers of videotex, both in Canada and internationally; and (4) the public in general, both at home and abroad.

These target publics were inter-related in certain respects. For instance, Mr. Ostry, DOC's deputy minister at the time, used effective media relations as a tool to achieve funding and programming decisions within government. By generating awareness in the general public by means of press conferences, articles in magazines and journals, public demonstrations, media interviews, etc., Mr. Ostry informed and interested the key decision makers in the government of Telidon's capabilities and potential. As well, he used traditional political and bureaucratic means at his disposal to influence Cabinet and others.

B.   Marketing

In October 1978, the Department of Communications retained the management consultants, Hickling-Johnston Ltd., to develop a field marketing trial strategy for Telidon. The report, dated February 1979, regarded Telidon as a product with potential. It estimated a total number of subscribers for Telidon of 40,000 in 1981, 200,000 in 1984 and 620,000 in 1986. DOC officials believed the 1981 estimates, at least, to be optimistic and it seemed unlikely that there would be a commercial service offering much before 1982, although there would be extensive market trial activity in the intervening period.

The Hickling-Johnston report stated that "the Department of Communications' objective is simple: to propel Telidon into a successful product launch. The job of doing this, however, is not one for a department of government, and we propose a 'shared enterprise' corporation to which the rights to Telidon would be conveyed." The purpose of the corporation, to be known as The

Telidon Consortium Inc., would be the successful commercial
exploitation of the Telidon product, first in Canadian markets,
and ultimately in international mass markets. Parties directly
interested in Telidon would subscribe to the corporation's
shares. These would include the federal government, federally
and provincially chartered telephone companies, broadcasters,
cable system operators, manufacturers, potential serviceware
providers, including publishers, and any other Canadian organizations
who wish to participate in the equity of a speculative venture
of this kind.
                            at the time
     John C. Madden,/Director General, Special Research Programs
of the Department of Communications, in an interview with the
Financial Post said he was pleased with the report, but didn't
agree with everything it said. Specifically, he was skeptical
that the proposed Telidon Consortium would succeed as a
manufacturing enterprise. Madden's reservations were shared by
Michael Hind-Smith, president of the Canadian Cable Television
Association, and by Don Cruickshank, president of the Canadian
Telecommunications Carriers Association.

     Certain officials of the Department of Communications who
were interviewed for this study judged the Hickling-Johnston
report to be inadequate. In light of this, and due to the re-
cent development and future potential of the Telidon program,
DOC has commissioned a number of marketing studies which are
now underway.

c. Government Telidon Program

John Madden outlined his own ideas as to how Telidon should be brought to market in a government publication entitled Videotex in Canada. In it he stated that after the public announcement of Telidon in August 1978, the government's program altered from a purely R&D activity to an advance on a broader front which endeavored to see the Telidon concept widely accepted both at home and abroad. This activity had two primary objectives - the establishment and acceptance of the appropriate Canadian standards, and the maximization of the number of jobs available to Canadians with respect to both the service and the manufacturing aspects of videotex. Mr. Madden emphasized that he did not see it as the government's role to try to convince Canadian broadcasters, telephone companies and cable TV operators that they should be offering a videotex service. That is a business decision which they will make for themselves, based on their own assessment of market opportunities. However, the government is involved in endeavoring to persuade organizations that once they have decided to offer a videotex service, it would be in their interest to opt for Telidon.

In order for these organizations to be convinced of this, Mr. Madden believed a number of program elements needed to be in place. In brief, they were as follows:

(i) Product development activities

Anyone contemplating offering a service should be assured that a complete set of hardware and
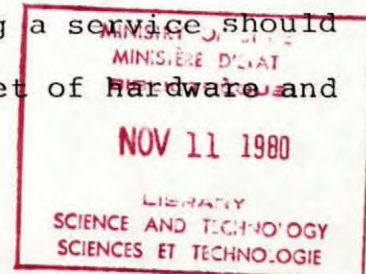
computer software will be available at the right price. Perhaps the single most important element in this category is the consumer Telidon terminal. Therefore to achieve this condition, the government, using a variety of means at its disposal, assisted the development of the necessary system components on an accelerated schedule.

(ii) Field trial activities

At the beginning, the Telidon program was several years behind that of its competitors. Hence the hardware had not yet had time to reach a competitively low price. In order, therefore, that organizations sponsoring field and market trials not suffer undue costs during such trials, the government either financially supported field trial activity, or provided Telidon equipment on loan, as well as other assistance.

(iii) Standards activities

The government worked with the appropriate Canadian standards organizations to ensure that Canadian views were well represented at international standards meetings. (As has been mentioned previously, this was done successfully as the International Telegraph and Telephone Consultative Committee has recently decided to

recommend to the International Telecommunications
Union that Telidon be included in the world
standards for videotex.)

(iv) Information provider activities

The importance of having valuable and interesting
information available for potential Telidon
users is at least as great as all the other
activities just described. Yet John Madden believes
this is a difficult area for government
involvement. The media are among those with the
greatest interest in Telidon, but any hint of
entanglement between government and the media is
potentially damaging to both parties.

Given that the success of Telidon is dependent
on the type and quantity of information it can
make available, it is essential that potential
information providers should have access to as
wide a market as possible, and as quickly as possible,
in order that the venture be worth their while. As
well, a large store of high quality content must
be rapidly accumulated to allow the Telidon market
to expand rapidly.

In non-commercial areas of information provision,
the government therefore pursued activities to
help strengthen the available data base. These
included assisting federal departments to prepare
relevant information for distribution on Telidon

systems and, more importantly, helping the community
of educators to become expert in the use of Telidon
for both format and recreational and educational
purposes. Yet Mr. Madden believed Telidon vitally
needed information providers in the private as well
as public sectors.

In this connection it is worthy to note that, in
late 1979, the 20 major potential information
providers in Canada formed their own trade
association, the Videotex Information Service
Providers Association of Canada (VISPAC). Its
members include newspaper publishers, represent-
atives of telephone companies and their yellow
pages organizations, computer companies, federal
and provincial government departments, universities
and other educational institutions, retailers and
organizations in the entertainment and travel
business.

At present, there is a great deal of activity among
Canadian information providers. Many are already
working closely with sponsors of major field
trials to establish the structures of their data
bases and plan how to make their information
accessible to videotex users in the most efficient
manner possible. Simultaneously, they are designing
the pages they will put on the system, as well as
working on the software needed to convert auto-

matically their machine readable information to a
Telidon format for insertion in the Telidon data
base. Others have already begun training their
page designers and information provider terminal
operators, and are establishing norms for the
creation of content.

In the United Kingdom, the Association of View-
data Information Providers (AVIP) is concerned
with relationships between information providers
and the Post Office, codes of practice and stand-
ards of behaviour, contracts and copyrights. In
July, 1979 the formation of an International
Association of Videotex Information Providers,
which is to operate from Switzerland, was announced.

D. DOC Regional Offices

The Department of Communications has regional offices in
Vancouver, Winnipeg, Toronto, Montreal and Moncton. All have
supported Telidon by various activities, mainly by giving demons-
trations to local, regional, provincial, and sometimes national
groups. The following paragraphs give a flavour of some of these
activities.

The Regional Office in Vancouver has given demonstrations
to personnel from Canadian Forest Products, the Coast Guard,
Canada Post, the CBC, and Statistics Canada, as well as a group
of cable TV operators.

The Regional Office in Toronto demonstrated Telidon to personnel from the Ministry of Education, Loyalist College, CBC, the Ministry of Community and Social Services, Revenue Canada and to those in attendance at the Canadian Computer Show, and the Data '80 Conference and Trade Show.

A series of demonstrations to introduce Telidon in the Atlantic Region have been very successful. Presentations have been given in Moncton, Fredericton, Charlottetown and St. John's. The demonstrations extended over a period of 3 to 4 days in each location. The first day was reserved for set-up and demonstrations to the press (newspaper,radio,TV,cablevision,etc.),in both official languages when required. On the second and third days demonstrations were held for invited officials. The invitation list included provincial deputy ministers and their officials, educational authorities, libraries, publication houses, telephone companies, interested provincial commissions and agencies and media executives.

The Atlantic Regional Office has also responded to special requests, and demonstrations were given to the Board of Directors of the New Brunswick Telephone Co., now participating in a Telidon field trial, to the Professional Engineering Association of P.E.I., and to the Regional Directors of Emergency Planning Canada. Telidon was present at a "Communications for the Future" seminar sponsored by the Society of Acadians of New Brunswick in January, 1980,and was a very popular attraction at the Université de Moncton science open-house. A demonstration was also given at the Symposium on Electronics in the 80's at the University of New Brunswick in Fredericton.

E.   International Activities in Public Awareness

When the Department of Communications began its public
awareness and promotion activities on behalf of Telidon, it
recognized the need for access to international markets,
especially those countries which had not yet developed a videotex
or teletext system. A prime target area, of course, was the
United States with a market of enormous potential and where
videotex and teletext systems were still in the developmental
and experimental stages with the principal thrust coming
from television networks, cable TV firms and telephone companies.

In conjunction with the above, DOC officers realized that
any public awareness or marketing campaign would be irrelevant
if Telidon was not accepted as an international standard for
videotex. Consequently, many of the department's efforts
concentrated on this important aspect of public awareness
and promotion with a large measure of success. As has been
mentioned in this paper, Study Groups I and VIII of the Inter-
national Telegraph and Telephone Consultative Committee (CCITT)
of the International Telecommunications Union (ITU) decided
in June, 1980 to recommend that Telidon be included in the world
standards for videotex.

The Department of External Affairs foresaw that the types
of public awareness activities that the Telidon program would
need in order to achieve international acceptance would put
tremendous demands on overseas posts and consulates. External

Affairs officials sensed that DOC did not appreciate the
magnitude and complexity of such an endeavour, nor did that
department have sufficient knowledge of the scope of over-
seas resources. Furthermore, External Affairs saw Telidon
as a perfect vehicle for creating an image in the eyes of
the world of Canada as a leader in high technology industry.
In order to avoid the many organizational problems they
perceived would arise and to enhance Canada's image as a high
technology leader, External Affairs officials approached DOC
to suggest that a centrally co-ordinated effort was needed.

Such an effort would necessarily involve the Department
of Industry, Trade and Commerce, which is responsible for
fostering trade of Canadian goods and services and exploiting
international markets. That department, however,
did not have a totally integrated strategy or overall policy
for marketing high technology products such as Telidon.
Telidon officials have commented that there is a need for
joint DOC/IT&C action and policy in the marketing of Telidon.
(At the time of this writing, meetings between the two depart-
ments on such matters were about to take place.) This is
not to suggest that Industry, Trade and Commerce did not
assist the Telidon program. On the contrary, IT&C trade
commissioners have been extremely co-operative and helpful
in making various international publics aware of Telidon. In
fact, owing to limited manpower resources, DOC officials
have not been able to meet all the requests for information
and assistance made by the trade commissioners.

A major marketing initiative launched in the United States and involving demonstrations and discussions in various cities can be cited as a specific example of the international efforts made to market Telidon. This Telidon awareness program was planned with the following three objectives in mind:

(a) to raise the consciousness of senior executives and high level officials making decisions on videotex selection;

(b) to support promotion of Telidon-like videotex standards; and

(c) to encourage Telidon field trials by cable and telephone companies.

DOC personnel believe these objectives have been successfully met.

The staff of Canadian consulates in the United States, with the advice of DOC officials, organized the preparation, logistics, media coverage and follow-up activities of various Telidon demonstrations. Being well informed of the various technical and communications aspects of Telidon, as well as having a sense of what was newsworthy, consulate staff ensured that substantial, accurate and timely information was disseminated throughout various media and forums.

To date, major Telidon demonstrations have been held in San Francisco (February 25-29), New York (March 20-April 9) and Dallas (May 19-23). These were held in conjunction with large electronics and communications trade shows and exhibits

occurring in the same cities. Personnel from the DOC Telidon group conducted seminars and gave demonstrations for potential Telidon users, or information providers, such as telephone and cable TV companies and publishing representatives.

In addition to the planned campaign in the United States, there were a number of associated efforts which are worth noting. In particular, DOC gave a demonstration to 75 cable companies at a conference in Orlando, Florida in February, 1980. There were also demonstrations in Washington for the Public Broadcasting System and others. Finally, there were a series of speakers who appeared in different forums in the U.S. over the last year or so. These various efforts were somewhat ad hoc or haphazard in nature, but they did contribute to getting Telidon known and recognized. In June 1980, it was announced that Telidon had been selected for the first United States consumer trial of teletext starting in late 1980. There also appear to be good possibilities for sales arising from the demonstrations in San Francisco, New York and Dallas.

The European tactic for promoting their videotex systems in the U.S. seems to be to reach an agreement with an American company (such as AT&T) that leaves marketing and public aware- ness to it. DOC personnel generally agree that Canadian industry should take the lead in marketing Telidon, and recent indications are that industry, after some initial hesitation is starting to become more involved.

It has also been noted that the Europeans give away videotex and teletext equipment as a tactic for inducing companies to eventually make large-scale purchases. DOC disagrees with this marketing strategy, believing that if companies want the systems they will be willing to buy them. DOC personnel have been in direct contact with large American companies and believe they have been favourably impressed. A definite advantage for Telidon in the U.S. market is the geographic proximity of Canada. This greatly facilitates the accessibility of potential customers to demonstrations, discussions and basic information on Telidon.

F. Field Trials

By 1982, there will be over 2,000 Telidon terminals in use for field trials in 21 cities, towns and suburbs across Canada. These pilot projects have been termed "show and tell" programs designed to stir up public awareness of the technology and applications of Telidon. As of January 1980, the following trials had been planned:

Sponsor	Estimated Start	Location	Approximate Number of Terminals	Transmission
Ontario Educational Communications Authority (Telidon Project)	Early 1980	Throughout Ontario	55	Broadcast & Telephone
Manitoba Telephone System (Project IDA)	Early 1980	South Headingley, Manitoba	37	Cable
Alberta Government Telephones (Project VIDON)	Mid-1980	Calgary, Alberta	120	Dedicated wire pair
New Brunswick Telephone Co. (Project MERCURY)	Fall 1980	St. John, New Brunswick	20	Dedicated cable pair
Bell Canada (Project VISTA)	Jan. 1981	Toronto, Ontario and Montreal, Quebec	1,000	Telephone
Télécâble Vidéotron	Early 1981	Montreal, Quebec	250 (by 1982)	Cable
Manitoba Telephone System (ELIE Project)	Mid-1981	Elie, Manitoba	150	Optical Fibre

These tests will assess the technical features of the Telidon system, its appeal in a large number of different markets, its many applications and its compatibility with a broad range of different telecommunications systems. They also would monitor the public's overall reaction to the capabilities and potential of the system, assessing human factors, technological aspects and the relative popularity of different information offerings.

Observations and Conclusions

1. Telidon may be described as a government program which
    has enjoyed a high degree of public awareness impact.
    This may be attributed predominantly to an aggressive media
    relations, public information and marketing campaign by
    the federal government, and to the technological superior-
    ity of the product itself.

    Certain qualifications should be noted, however,
    concerning the above statements. Although DOC's public
    awareness campaign is fairly extensive, European efforts
    at promoting their videotex and teletext systems are, by
    comparison, enormous and much more generously funded. The
    point that should be made is that DOC has done very well
    with resources (both manpower and financial) which are
    limited in proportion to the size and ambitions of the
    Telidon program.

    Some observers believe that if the number of personnel
    and the amount of funding were increased significantly,
    the success of the public awareness and marketing activities
    of the Telidon program would be much greater. Others,
    however, argue that, although the Telidon program could bene-
    fit from increased activity and funding, it should not go
    to the extent of the Europeans (notably Britain and France).
    They think the Europeans, in pouring a large amount of money

into public awareness and marketing aspects, would need
to sell a great number of systems to recoup their invest-
ments. Telidon, on the other hand, has invested pro-
portionately less, and can learn from European efforts
by watching, studying and analyzing the various activities
they have undertaken at great cost. Furthermore, it should
be pointed out that Telidon is a few years behind the
Europeans in terms of production and marketing. Considering
this, the Telidon program has done remarkably well.

Observations have also been made that the public aware-
ness activities DOC has undertaken on behalf of Telidon
were not adequately co-ordinated, nor centrally directed,
but were, rather, the result of a series of initiatives
springing up here and there in the department. DOC
officials involved in the Telidon program judge this view
to be unfair for a number of reasons.

For one thing, these officials believe that co-ordination
of the Telidon program has been as good as that found in
any large organization. Some unco-ordinated activity has
taken place, but much has been accomplished if one takes
into consideration limited resources and normal technical
problems. These problems include a number of equipment
failures and breakdowns during Telidon demonstrations and
tests. These have been primarily due to the fact that
most of Telidon is laboratory equipment, as compared with
the European systems which are under commercial production.

In any case, such breakdowns are detrimental to a public awareness campaign. Also, the time and effort needed to solve such problems, as well as the frustration and inconvenience they cause, contribute to the exhausting workload of Telidon personnel.

Furthermore, Telidon officials state that Canada as a country does not lend itself easily to central co-ordination. DOC could not implement a Telidon system on a country-wide basis as can the Europeans. The political context for videotex systems in countries such as the United Kingdom and France are different,with many of the companies involved in various aspects of the systems being publicly owned. This creates a different technology and information transfer situation.

Another point is that in the early stages of the program, no one in DOC had any idea of the amount of general interest which would be generated by Telidon. Ironically, in this regard, it could be argued that public awareness efforts were too successful. Personnel in the Telidon program have been inundated with requests for information and demonstrations from industry, governments and the public, both at home and abroad. Senior management at DOC realize this and thus, it has been argued, should provide the Telidon program with more substantial resources. Their failure to do so may be the result of common departmental or bureaucratic problems associated with priority determination (which program is of greater or lesser importance). inertia (a resistance to reallocation of resources), and budgetary and fiscal restraints.

In apparent contradiction, however, to the point made above is the following paragraph from a recently released joint study by DOC and MOSST:

"The extent of support of the senior management [at DOC for projects such as Telidon] while reflecting the relative status of a project in terms of the departmental priorities, also helped the research team in obtaining financial resources more easily, and acquiring relative flexibility in both allocation and control of the resources. This, combined with the provision of capitalized funding for a project... played a significant role in expediting the development of these technologies to enable both their early practical application and timely exploitation by industry."

(Technology Transfer by Department of Communications: A Study of Eight Innovations. pp.8-9)

Another point which should be made is that there seems to have been, at least in the initial stages of the public awareness activities, a lack of co-ordination and central direction between government departments with responsibilities and interests in this area. As was mentioned previously, the Department of External Affairs recommended to DOC that co-ordination of efforts was needed in the international arena. Also, the role and responsibilities of the Department of Industry, Trade and Commerce in the promotion of Telidon have yet to be clearly defined.

It has also been mentioned that no set of criteria
or performance indicators were established at the
beginning of the public awareness and marketing activities.
Such indicators would include: number of people
contacted, level and responsibilities of people contacted,
result or outcome of contact, media reaction, number of
resulting follow-ups, etc. DOC personnel agree that
perhaps this should have been done, but also point out
the enormous problem of evaluating and measuring certain
types of information. They also state that objectives were
set out and in many cases successfully met. This was
specifically evident in the U.S. campaign described above.

Although it would be difficult to clearly determine
whether or not the efforts to promote, market and enhance
public awareness of Telidon were centrally co-ordinated,
it is nevertheless apparent that any such efforts should
be properly planned, with clearly defined objectives,
performance indicators and proper resources, and that co-
ordination and central policy direction are also extremely
important.

2. The officials running the Telidon program cannot afford to
be complacent. Although they earnestly believe their
system to be technologically superior to competing systems,
DOC personnel realize that their marketing efforts are
still lagging behind those of their competitors. They argue,
however, that marketing should be the responsibility of

Canadian industry, financially assisted by the government by means of the programs of Industry, Trade and Commerce. Recent indications are that industry, after initial hesitation, is starting to get interested and involved in marketing Telidon. Also, as has been mentioned previously, discussions between DOC and IT&C are proceeding to determine the type of role the latter department should have in the future promotion of Telidon.

3. The Telidon program is far from complete; in fact, developments are occurring at a fairly rapid pace, in regard to both its technological and its public awareness aspects. Therefore, much information of a direct and relevant nature is still unobtainable. An obvious example of this is that the results of the monitoring of public reaction and attitudes towards Telidon during the present field trials will not be available for some months.

4. The Telidon program, in addition to the elements explored in this paper, also involves various concepts associated with what have been termed the "information revolution" and the "wired city". Such modern technology as Telidon will have profound social, political and economic implications throughout the world. These include the potential for significant increases in the quality of life and in the productivity of industry. Changes will also be seen in such areas as education, financial mechanisms, trade practices, public

administration, health services, transportation and culture. Attendant upon these changes are certain dangers associated with misuse, invasion of privacy, large-scale unemployment and the like.

Many observers have commented on these issues and urged that they must be examined thoughtfully and urgently by society. J. Ranald Ide, opening this year's series of Walter Gordon lectures at Carleton University, stated his concerns in this way:

"We cannot afford to ignore the impact that this new revolution will have on our economy, on our social institutions and on our way of life. It is important as it never was before to be masters in our own house.

"Over and above these issues is the need for a public awareness program regarding the opportunities and dangers associated with the microelectronic revolution. With this public awareness, it is hoped there will be created an environment in which all our various governments may act to create the policy framework and regulatory environment which will be crucial to our future growth and development as a nation." (Quoted in Toronto Star, March 21, 1980.)

5. Although time and other constraints prevent an elaboration of
    the following point, it should be mentioned that a distinction
    should be made between public awareness of Telidon as such
    (and as discussed in this paper), and Telidon as an instru-
    ment or vehicle for making the public more aware of various
    types of information, services, etc. For instance, Statistics
    Canada is already linking its data bank to the Telidon system,
    and Communications Minister Francis Fox has indicated that
    he would like to get all federal departments experimenting
    with Telidon as a means of disseminating the federal files to
    be made available under new freedom of information legislation.
    A proposal outlining the objectives, organization and costs
    involved in developing such a federal information service
    using Telidon is currently being drafted by the Department
    of Communications.

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