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1. [ Videotex Canada : understanding the  
Canadian videotex marketplace (1985: Toronto,  
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2. [ UNDERSTANDING THE CANADIAN VIDEOTEX MARKETPLACE ]

REPORT ON THE VIDEOTEX CANADA MEETING

4-5 March 1985

Toronto, Canada ]

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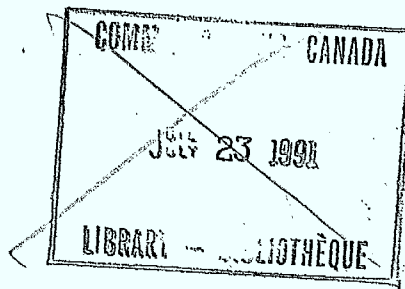
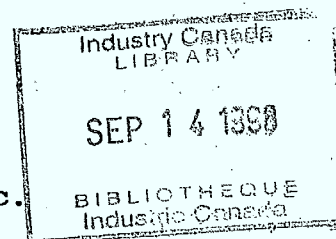


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## QUELQUES DÉFINITIONS

### VIDÉOTEX

Le vidéotex est un service interactif, transactionnel et bidirectionnel donnant accès à des banques et des services d'information. La gamme des terminaux permettant l'accès à ces banques d'information va d'un simple décodeur vidéotex relié à un moniteur ou téléviseur en couleur jusqu'à un micro-ordinateur.

### TÉLÉTEXTE

Le télétexte est un service unidirectionnel donnant accès à des banques d'information. Les télédiffuseurs et les câblodistributeurs utilisent une partie du signal du canal de télévision pour y insérer et diffuser le contenu des banques d'information. Pour rendre le service interactif, l'utilisateur a besoin d'un décodeur télétexte relié au téléviseur. On utilise également le terme vidéotex diffusé pour signifier télétexte.

### TÉLIDON

Télidon est un protocole de communication d'informations graphiques développé par le ministère des Communications. Il est la base des normes nord-américaines et internationales pour le vidéotex et est identique à NAPLPS.

### NAPLPS

La syntaxe du protocole de la couche présentation du vidéotex/télétexte en Amérique du Nord est la norme pour les services vidéotex et télétexte publiée conjointement par l'Association canadienne de normalisation (ACNOR) et l'American National Standards Institute (ANSI). Télidon et NAPLPS sont des synonymes. On utilise parfois la norme T500. T500 est le numéro assigné par l'ACNOR au document contenant la NAPLPS.

### NABTS

La North American Basic Teletext Specification (NABTS) est la norme du service télétexte qui a été conjointement publiée par l'Electronic Industries Association (EIA) et le Comité consultatif sur le vidéotex canadien (CVCC). La NABTS fait appel à la NAPLPS pour le codage des informations graphiques telle que publiée par l'ACNOR dans son document T500.

### MODELE DE RÉFÉRENCE DE SERVICE (MRS)

Le modèle de référence de service est les spécifications de l'ensemble minimal de caractéristiques que doit matérialiser un appareil récepteur pour satisfaire aux exigences d'un service particulier, ainsi que de l'ensemble maximal de caractéristiques que devrait offrir un fournisseur d'information pour le codage de l'information de texte et d'image. Le MRS de la NAPLPS, en accord avec l'industrie, est l'ensemble d'exigences pour le vidéotex grand public. Par exemple, la résolution de l'affichage physique doit être de l'ordre de 256 pixels horizontalement et 200 pixels verticalement. Ou encore, l'appareil doit être capable d'afficher 16 couleurs simultanées, parmi un jeu de 512 couleurs.

### SERVEUR

Un serveur est un organisme exploitant un système informatique permettant à un demandeur la consultation et l'utilisation directes d'une ou plusieurs banques d'information vidéotex ou télétexte.

### FOURNISSEUR D'INFORMATION

Un fournisseur d'information est un organisme ou une personne dont la fonction est d'approvisionner une banque d'information offerte par un serveur.

### CRÉATION DE PAGES

La création de pages est la transformation de l'information en pages vidéotex qui seront mises dans la banque d'information. On considère normalement que l'image affichée sur un écran est le contenu d'une page vidéotex. On appelle créateur de pages, la personne qui fait des pages vidéotex.

### CVCC

Le Comité consultatif sur le vidéotex canadien (CVCC) a été établi en 1979 pour aider le gouvernement à mettre en place un nouveau secteur industriel utilisant Télidon. Les membres du comité provenaient du secteur privé et le gouvernement en assumait la présidence. Plusieurs de ses sous-comités sont encore actuellement actifs. Il y a au moins deux ans que le comité principal ne s'est pas réuni.

### MSAT

Le MSAT, " M " signifiant mobile, est un satellite proposé du service mobile qui pourra assurer des services de radio et de radiotéléphone interactifs, sans égard à la distance. Ce genre de service pourra satisfaire de nombreux besoins dans toutes les régions du Canada. Son lancement est prévu pour 1988.

## DEFINITIONS

### VIDEOTEK

Videotex is a two way interactive service which provides access to databanks of information. Terminals used for access to the databanks can be of various kinds ranging from dedicated videotex terminals connected to display monitors or TV sets to micro-computers which also serve other purposes.

### TELETEXT

Teletex is a one way broadcast of limited amounts of information to users. TV broadcasters and cable companies, who utilize unused portions of a broadcast channel for the transmission of teletext data, are the normal sources for this service. Reception is usually with a teletext decoder connected to a TV set.

### TELIDON

Telidon is the graphics communication protocol which was developed by the Department of Communications. It formed the basis of the North American and international standards for videotex and is identical to NAPLPS

### NAPLPS

North American Presentation Level Protocol Syntax is the standard for videotex services which is published jointly by the American National Standards Institute (ANSI) and the Canadian Standards Association. Telidon and NAPLPS are identical. NAPLPS is also sometimes referred to by T500 which is the document number given to this standard by the Canadian Standards Association.

### NABTS

The North American Basic Teletext Specification is the standard for teletext services which is jointly published by the Electronic Industries Association (EIA) and the Canadian Videotex Consultative Committee (CVCC). It specifies as its presentation level the NAPLPS coding schemas documented in CSA document T500.

### SERVICE REFERENCE MODEL (SRM)

The SRM is an implementation level of the NAPLPS standard which the industry has generally agreed should be used for public videotex services. Examples of requirements of the SRM are that the display parameters shall be on the order of 256 pixels horizontal by 200 pixels vertical and the colour functions shall allow presentation of 16 simultaneous colours from a choice of 512.

### SERVICE PROVIDER

A service provider is the operator of a videotex or teletext database. Information is distributed free of charge or for a fee depending on the situation.

### INFORMATION PROVIDER

An information provider is the supplier of information for distribution by a service provider. Information is not necessarily in the videotex format until it is distributed by the service provider.

### PAGE CREATION

Page creation is the packaging of information into the videotex format for distribution by a service provider. An image on the screen of a videotex terminal is usually considered to be a page. A page creator is a person who creates pages in the videotex format.

### CVCC

The Canadian Videotex Consultative Committee set up in 1979 as a guide to the government support to the developing Telidon industry. Its membership came from the industry leaders and was chaired by Government. Several subcommittees are still active but the main committee has not met for almost two years.

### MOBILE SATELLITE (MSAT)

MSAT is a satellite which will provide capability for both voice and data mobile communications. It will considerably enhance mobile communications for many different applications in all regions of the country. The scheduled launch is 1988.

TÉLIDON



VIDÉOTEX CANADA

Telidon is an advanced information communications technology which is best known for its capability to enable access to graphical and textual information. At the heart of Telidon are the picture description instructions which permit the encoding of pictorial information in a very compact form. This code is ideally suited for accessing information in data banks not only by telephone, but also via other communication media such as: cable television systems; satellite links; and optical fibers. It is used for a variety of applications including:

- a) electronic messaging and mail services, especially for those containing graphics
- b) audio visual presentation systems
- c) computer aided learning systems
- d) transactional services for banking, shopping, or making reservations
- e) tourist and public information systems
- f) graphical presentation of information stored in alpha-numeric databases
- g) teleconferencing which involves the sharing of graphical images as well as voice.

The generic names for these services are videotex and teletext.

Videotex refers to a service where the information is transmitted in response to a user's request via a two way communications medium.

Teletext refers to a broadcast version which is normally provided by inserting information into a television broadcast signal.

Telidon was developed by the Communications Research Centre of the Department of Communications. It was announced in August 1978 and since that time has become a vital part of the information technology which will be required in offices, homes, and industrial enterprises.

Telidon has been recognized as the standard for videotex services in North America by both the Canadian Standards Association (CSA) and the American National Standards Institute (ANSI).

Télidon est une technologie avancée de communication de l'information. Il est surtout connu pour sa capacité de donner accès à de l'information sous forme de graphiques et de textes. L'élément essentiel de Télidon est fourni par les instructions de description de l'image, qui permettent le codage des images d'une manière très compacte. Ces instructions constituent le moyen le mieux adapté pour permettre l'accès à l'information contenue dans les banques de données non seulement par téléphone mais également à l'aide d'autres moyens de diffusion tels que le câble (télévision), les satellites et la fibre optique. Les applications de Télidon sont multiples:

- a) messages électroniques et courrier électronique; plus précisément, dans le cas des graphiques;
- b) systèmes audio-visuels;
- c) systèmes d'enseignement automatisés;
- d) opérations à distance pour les services bancaires, les emplettes et les réservations;
- e) information touristique et systèmes d'information destinés au grand public;
- f) présentation graphique d'information stockée dans des banques de données alpha-numériques;
- g) téléconférence permettant l'échange d'images graphiques aussi bien que de la voix.

Les appellations génériques de ces services sont vidéotex et télétexte. Lorsqu'en réponse à la demande d'un utilisateur, l'information est transmise par un média de communication bidirectionnel, il s'agit du service vidéotex.

Lorsque l'information est média, par exemple au moyen des signaux de télévision, le service utilisé est le télétexte.

Le système Télidon a été mis au point par le Centre de recherches sur les communications du ministère des Communications. Il a été rendu public en août 1978 et depuis lors, il est devenu un élément essentiel de la technologie de communication de l'information qui deviendra indispensable dans nos bureaux, nos foyers et nos entreprises industrielles. Télidon est reconnu comme la norme vidéotex en Amérique du Nord par l'Association canadienne de normalisation (ACNOR) et l'American National Standards Institute (ANSI).

04/02/85

VIDEOTEX CANADA: UNDERSTANDING THE CANADIAN MARKETPLACE

Metro Toronto Convention Centre

MONDAY, MARCH 4, 1985

9:00 - 10:30 THE CANADIAN PERSPECTIVE: PAST PRESENT FUTURE

Chair: John Madden - New Media Technologies  
Speakers: Jocelyne Picot - AAU  
David Carlisle - Network Videotex  
Douglas Parkhill

The short history of Telidon in Canada is marked by a number of major achievements. From its debut as the first alphanumeric version of videotex, through field trials and standards negotiations, to viable commercial services today - the markets and strategies for the technology have evolved. Presenting a review of this evolution, leading experts in the field highlight the milestones and explore future avenues for videotex development in Canada.

10:30 - 11:00 COFFEE

11:00-12:30 THE CANADIAN MARKET: EXPLORING THE OPPORTUNITIES

Chair: Herb LaPier - Electrohome  
Speakers: Robert McConnell - Infomart  
Claude Pineault - Formic  
John McLaughlan - Faxtel

Today, videotex services and applications are finding niches in the Canadian marketplace. The broad spectrum of possibilities, from audio-visual presentations to large operating systems, encourages access to a variety of markets. In this session, the Canadian market potential for videotex system operators, service providers and page creators is explored. Where are the opportunities in Canada and how can industry exploit them?

12:30 - 2:00 LUNCH

2:00 - 3:30 LIVING WITH THE STANDARD

Chair: Herb Bown - IDON  
Speakers: Robert Vaive - DOC  
Bob Morin - Manitoba Telephone Systems  
Yun Foo Lum - DOC  
Dan O'Leary - New Media Technologies

The development and acceptance of a North American videotex standard has been a challenging process with its promises and pitfalls. How has this process affected the growth of videotex in Canada? What problems remain for videotex communicators today? This session addresses the issues surrounding the implementation of full NAPLPS services as well as the position of NAPLPS on the international scene.

3:30 - 4:00 COFFEE

4:00 - 5:00 GOVERNMENT AND PUBLIC SERVICES APPLICATIONS

Chair: Roy Marsh - DOC  
Speakers: John Lomoro - Museum of Man  
Don Tapscott - Trigon  
Bill Dawson - Descon

As the developer of Telidon, the Government of Canada with the co-operation of provincial governments has invested in the technology since 1978. From early videotex services such as Teleguide and Cantel to more recent applications such as TABS (Telidon Aviation Briefing System), government support for service start-up has been significant. Primarily, the government has supported public service applications.

5:00 - 7:30 RECEPTION & MINISTER'S PRESENTATION

TUESDAY, MARCH 5, 1985

9:00 - 10:30 THE AMERICAN SCENE

Chair: Haines Gaffner - Link Resources  
Speakers: Bruno Leps - Grassroots America  
Sam Berkman - AT&T  
Paul Orme - Viewtron

Increased investment by major American corporations promises new opportunities for the sales of Canadian services, products and expertise south of the border. This session explores videotex services, developments and the current market environment in the United States.

10:30 - 11:00 COFFEE

11:00 - 12:30 PUBLIC ACCESS AND BUSINESS SERVICES:  
A PROVEN TRACK RECORD

Chair: Maurice Sprumont - Infomart  
Speakers: Martin Lane - Link Resources  
J. D. MacCulloch - Videotex Atlantic  
Gunter Kurz - Genesys Group  
Cathie Irwin - Bank of Montreal

Profitable markets for videotex are in the provision of public access information services in public locations and the use of videotex as a support to the business process. The display characteristics of videotex are well-suited to the delivery of information to the public as well as the presentation of the advertiser's message. It also enhances display of information in the workplace. Canadian expertise in the development and operation of public access systems and business applications is a guarantee of future growth.

12:30 - 1:30 LUNCH

1:30 - 3:00 GOVERNMENT/INDUSTRY: A PARTNERSHIP

Chair: Ken Hepburn - DOC  
Speakers: Richard Stursberg - DOC  
Rex Schofield - VISAPAC  
Peter Desbarts - University Western Ontario  
Mike Heney - DRIE

A panel of representatives will discuss the respective roles of government and industry in the development of the videotex industry. They will discuss the issues and challenges critical to the growth of videotex in Canada. All delegates are invited to participate in this session.

3:00 - 3:30 COFFEE

3:30 - 5:00 NEW FRONTIERS

Chair: Bill Sawchuk - CRC  
Speakers: Allister Pedersen - DOC  
George McCabe - Cableshare  
Jim Carruthers - Norpak  
Gordon Hutchison - Electronics Communicator

The microcomputer, new cable services, satellites and office automation systems are some of the avenues of future growth for the videotex industry. In this session, speakers evaluate areas of potential expansion and present current initiatives for the videotex industry.



Metro Toronto Convention Centre

LE LUNDI 4 MARS 1985

9 h 00 - 10 h 30 LA PERSPECTIVE CANADIENNE: LE PASSÉ, LE PRÉSENT, L'AVENIR

Président : John Madden - New Media Technologies  
Orateurs: Jocelyne Picot - AUA  
David Carlisle - Network Videotex  
Douglas Parkhill

La courte histoire du Télidon au Canada est ponctuée d'un certain nombre d'événements importants. Son lancement en tant que première version alphagéométrique du vidéotex, a été suivi de projets pilotes et de négociations pour l'établissement de normes en la matière, pour aboutir aux services commerciaux viables qu'il fournit aujourd'hui; tout au long de ce processus, les marchés et les stratégies dans ce domaine n'ont cessé d'évoluer. Passant en revue cette évolution, d'éminents experts relèvent les faits saillants et examinent les perspectives de développement futur du vidéotex au Canada.

10 h 30 - 11 h 00 PAUSE-CAFÉ

11 h 00 - 12 h 30 LE MARCHÉ CANADIEN: LES DÉBOUCHÉS

Président : Herb LaPier - Electrohome  
Orateurs: Robert McConnell - Infomart  
Claude Pineault - Formic  
John MaLauchlan - Faxtel

Aujourd'hui, des créneaux s'ouvrent pour les services vidéotex et leurs applications sur le marché canadien. Le large éventail de possibilités qui s'offrent au vidéotex, allant de la simple présentation audio-visuelle aux grands systèmes d'exploitation, encourage l'accès à divers marchés. Cet atelier a pour but d'examiner les débouchés en perspective sur le marché canadien pour les exploitants de systèmes vidéotex, les fournisseurs de services et les créateurs de pages. Quels sont, au Canada, ces secteurs prometteurs et comment l'industrie peut-elle les exploiter?

12 h 30 - 14 h 00 DÉJEUNER

14 h 00 - 15 h 30 VIVRE AVEC LA NORME

Président : Herb Bown - IDON  
Orateurs: Robert Vaive - MDC  
Bob Morin - Manitoba Telephone System  
Yun Foo Lum - MDC  
Dan O'Leary - New Media Technologies

L'établissement et l'approbation d'une norme vidéotex nord-américaine ont donné lieu à des travaux passionnants, comportant des hauts et des bas. Comment ce processus a-t-il influé sur la croissance de l'industrie du vidéotex du Canada? Quels sont les problèmes auxquels font face, aujourd'hui, les exploitants du vidéotex? On parlera, dans cet atelier, de la mise en oeuvre de services complets fonctionnant selon la SPCP nord-américaine ainsi que de la position de la SPCP nord-américaine sur la scène internationale.

15 h 30 - 16 h 00 PAUSE-CAFÉ

16 h 00 - 17 h 00 APPLICATIONS AU GOUVERNEMENT ET AUX SERVICES PUBLICS

Président : Roy Marsh - MDC  
Orateurs: John Lomoro - Musée de l'homme  
Don Tapscott - Trigon  
Bill Dawson - Descon

En tant que créateur de Télidon, le gouvernement du Canada, en collaboration avec les gouvernements provinciaux, investit dans la technologie depuis 1979. Depuis les premiers services vidéotex, comme Téléguide et Cantel, jusqu'aux applications plus récentes comme le TABS (Télidon Aviation Briefing System), le gouvernement a largement contribué au lancement du service. Le gouvernement est davantage intéressé dans l'application aux services publics.

17 h 00 - 19 h 30 RÉCEPTION ET ALLOCUTION DU MINISTRE

LE MARDI 5 MARS 1985

9 h 00 - 10 h 30 LA SCÈNE AMÉRICAINE

Président : Haines Gaffner - Link Resources  
Orateurs: Bruno Leps - Grassroots America  
Sam Berkman - AT&T  
Paul Orme - Viewtron

Grâce aux investissements accrus consentis par d'importantes compagnies américaines, le Canada peut profiter de nouvelles occasions pour la vente de ses services, techniques et produits au sud de la frontière. Cet atelier porte sur les services vidéotex, les progrès réalisés dans ce domaine et le marché actuel aux États-Unis.

10 h 30 - 11 h 00 PAUSE-CAFÉ

11 h 00 - 12 h 30 SYSTÈMES COMMERCIAUX ET SYSTÈMES A ACCÈS PUBLIC:  
DES SYSTÈMES QUI ONT FAIT LEURS PREUVES

Président: Maurice Sprumont - Infomart  
Orateurs: Martin Lane - Link Resources  
J.D. MacCulloch - Videotex Atlantic  
Gunter Kurz - Genesys Group  
Cathie Irwin - Banque de Montréal

Le vidéotex peut trouver des débouchés avantageux dans la prestation de services d'information à accès public dans les centres commerciaux, les hôtels, les terminus, les centres touristiques et d'autres endroits publics. Les caractéristiques d'affichage du vidéotex se prêtent bien à la transmission de l'information au public ainsi qu'à la présentation du message du commanditaire. Grâce à la compétence du Canada dans les domaines de la mise au point et de l'exploitation de systèmes à accès public, ce secteur du marché est assuré de poursuivre son essor. On examinera dans cet atelier les systèmes à accès public des points de vue de sa valeur commerciale et de ses perspectives d'avenir.

12 h 30 - 13 h 30 DÉJEUNER

13 h 30 - 15 h 00 GOUVERNEMENT-INDUSTRIE: PARTENAIRES

Président : Ken Hepburn - MDC  
Orateurs: Richard Sturberg - MDC  
Rex Schofield - VISAPAC  
Peter Desbaretts - University Western Ontario  
Mike Heney - MEIR

Un groupe de représentants du gouvernement et de l'industrie discuteront du rôle qu'ils jouent dans leur secteur respectif quant au développement de l'industrie du vidéotex. Il sera également question des facteurs essentiels à la croissance du vidéotex au Canada et des défis qu'il importe de relever à cet égard. Tous les délégués sont invités à participer à cet atelier.

15 h 00 - 15 h 30 PAUSE-CAFÉ

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Président: Bill Sawchuk - MDC  
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George McCabe - Cablesshare  
Jim Carruthers - Norpak  
Gordon Hutchison - Electronics Communicator

Les micro-ordinateurs, les nouveaux services de câblodistribution, les satellites et les systèmes de bureautique ne sont que quelques-unes des voies qui s'ouvriront à l'industrie du vidéotex. Dans cet atelier, les conférenciers évaluent les domaines d'expansion possibles et présentent les initiatives actuelles de l'industrie du vidéotex.

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Le vidéotex peut trouver des débouchés avantageux dans la prestation de services d'information à accès public dans les centres commerciaux, les hôtels, les terminus, les centres touristiques et d'autres endroits publics. Les caractéristiques d'affichage du vidéotex se prêtent bien à la transmission de l'information au public ainsi qu'à la présentation du message du commanditaire. Grâce à la compétence du Canada dans les domaines de la mise au point et de l'exploitation de systèmes à accès public, ce secteur du marché est assuré de poursuivre son essor. On examinera dans cet atelier les systèmes à accès public des points de vue de sa valeur commerciale et de ses perspectives d'avenir.

12 h 30 - 13 h 30 DÉJEUNER

13 h 30 - 15 h 00 GOUVERNEMENT-INDUSTRIE; PARTENAIRES

Président : Bert Blevis - MDC  
Orateurs: Robert Ménard - Douserv Télécom  
Rex Schofield - Dominion Directory  
Peter Desbarats - University Western Ontario  
Mike Heney - MEIR

Un groupe de représentants du gouvernement et de l'industrie discuteront du rôle qu'ils jouent dans leur secteur respectif quant au développement de l'industrie du vidéotex. Il sera également question des facteurs essentiels à la croissance du vidéotex au Canada et des défis qu'il importe de relever à cet égard. Tous les délégués sont invités à participer à cet atelier.

15 h 00 - 15 h 30 PAUSE-CAFÉ

15 h 30 - 17 h 00 NOUVELLES FRONTIÈRES

Président: Bill Sawchuk - MDC  
Orateurs: Allister Pederson - MDC  
George McCabe - Cableshare  
Jim Carruthers - Norpak  
Gordon Hutchison - Electronics Communicator

Les micro-ordinateurs, les nouveaux services de câblodistribution, les satellites et les systèmes de bureautique ne sont que quelques-unes des voies qui s'ouvriront à l'industrie du vidéotex. Dans cet atelier, les conférenciers évaluent les domaines d'expansion possibles et présentent les initiatives actuelles de l'industrie du vidéotex.

VIDEOTEK CANADA: UNDERSTANDING THE CANADIAN MARKETPLACE

Metro Toronto Convention Centre

MONDAY, MARCH 4, 1985

9:00 - 10:30 THE CANADIAN PERSPECTIVE: PAST PRESENT FUTURE

Chair: John Madden - New Media Technologies  
 Speakers: Jocelyne Picot - AAU  
 David Carlisle - Network Videotex  
 Douglas Parkhill

The short history of Telidon in Canada is marked by a number of major achievements. From its debut as the first alphageometric version of videotex, through field trials and standards negotiations, to viable commercial services today - the markets and strategies for the technology have evolved. Presenting a review of this evolution, leading experts in the field highlight the milestones and explore future avenues for videotex development in Canada.

10:30 - 11:00 COFFEE

11:00-12:30 THE CANADIAN MARKET: EXPLORING THE OPPORTUNITIES

Chair: Herb LaPier - Electrohome  
 Speakers: Robert McConnell - Infomart  
 Claude Pineault - Formic  
 John McLauchlan - Marketfax

Today, videotex services and applications are finding niches in the Canadian marketplace. The broad spectrum of possibilities, from audio-visual presentations to large operating systems, encourages access to a variety of markets. In this session, the Canadian market potential for videotex system operators, service providers and page creators is explored. Where are the opportunities in Canada and how can industry exploit them?

12:30 - 2:00 LUNCH

2:00 - 3:30 LIVING WITH THE STANDARD

Chair: Herb Bown - IDON  
 Speakers: Robert Vaive - DOC  
 Bob Morin - Manitoba Telephone Systems  
 Yun-Foo Lum - DOC  
 Dan O'Leary - New Media Technologies

The development and acceptance of a North American videotex standard has been a challenging process with its promises and pitfalls. How has this process affected the growth of videotex in Canada? What problems remain for videotex communicators today? This session addresses the issues surrounding the implementation of full NAPLPS services as well as the position of NAPLPS on the international scene.

3:30 - 4:00 COFFEE

4:00 - 5:00 GOVERNMENT AND PUBLIC SERVICES APPLICATIONS

Chair: Roy Marsh - DOC  
 Speakers: John Lomoro - Museum of Man  
 Don Tapscott - Trigon  
 Bill Dawson - Descon

As the developer of Telidon, the Government of Canada with the co-operation of provincial governments has invested in the technology since 1978. From early videotex services such as Teleguide and Cantel to more recent applications such as TABS (Telidon Aviation Briefing System), government support for service start-up has been significant. Primarily, the government has supported public service applications.

5:00 - 7:30 MINISTER'S PRESENTATION AND RECEPTION

TUESDAY, MARCH 5, 1985

9:00 - 10:30 THE AMERICAN SCENE

Chair: Haines Gaffner - Link Resources  
Speakers: Bruno Leps - Grassroots America  
Sam Berkman - AT&T  
Paul Orme - Viewtron

Increased investment by major American corporations promises new opportunities for the sales of Canadian services, products and expertise south of the border. This session explores videotex services, developments and the current market environment in the United States.

10:30 - 11:00 COFFEE

11:00 - 12:30 PUBLIC ACCESS AND BUSINESS SERVICES:  
A PROVEN TRACK RECORD

Chair: Maurice Sprumont - Infomart  
Speakers: Martin Lane - Link Resources  
J. D. MacCulloch - Videotex Atlantic  
Gunter Kurz - Genesys Group  
Cathie Irwin - Bank of Montreal

Profitable markets for videotex are in the provision of public access information services in public locations and the use of videotex as a support to the business process. The display characteristics of videotex are well-suited to the delivery of information to the public as well as the presentation of the advertiser's message. It also enhances display of information in the workplace. Canadian expertise in the development and operation of public access systems and business applications is a guarantee of future growth.

12:30 - 1:30 LUNCH

1:30 - 3:00 GOVERNMENT/INDUSTRY: A PARTNERSHIP

Chair: Bert Blevis - DOC  
Speakers: Robert Ménard - Douserv Telecom  
Rex Schofield - Dominion Directory  
Peter Desbarats - University Western Ontario  
Mike Heney - DRIE

A panel of representatives will discuss the respective roles of government and industry in the development of the videotex industry. They will discuss the issues and challenges critical to the growth of videotex in Canada. All delegates are invited to participate in this session.

3:00 - 3:30 COFFEE

3:30 - 5:00 NEW FRONTIERS

Chair: Bill Sawchuk - CRC  
Speakers: Allister Pedersen - DOC  
George McCabe - Cablesshare  
Jim Carruthers - Norpak  
Gordon Hutchison - Electronics Communicator

The microcomputer, new cable services, satellites and office automation systems are some of the avenues of future growth for the videotex industry. In this session, speakers evaluate areas of potential expansion and present current initiatives for the videotex industry.

## EXECUTIVE SUMMARY

### VIDEOTEX CANADA: UNDERSTANDING THE CANADIAN MARKETPLACE

The Canadian Department of Communications (DOC) sponsored a meeting of the Canadian videotex industry in Toronto, on 4-5 March, 1985. The meeting, which marked the end of the DOC Telidon Program, saw the convergence of five hundred people involved or interested in videotex. (The speakers and the majority of the attendees possess a high degree of knowledge about videotex and this is reflected in the Report.) The two-day conference coincided with one of Toronto's worst snow storms: the conference program was adjusted to accommodate late arrivals and stranded speakers.

The Report of the Videotex Canada Meeting highlights the major points made by the speakers during the eight sessions. Each session is dealt with in four parts: Panel Speakers, Major Points, Discussion and Main Conclusions. There is some repetition to be found in the main conclusions of various sessions, a fact which attests to the significance of the conclusion. Since some readers may look at selected sessions, it would have been misleading to exclude major conclusions simply because they had already been stated. Those wishing to find the general conference conclusions may go to that section. A number of useful documents have been appended to this Report, including: the Meeting Agenda, the List of Attendees, the Address of the Minister of Communications and an Outline of the Historical Developments Regarding the Evolution of the Canadian Videotex Industry.

The panel speakers emphasized in various ways that videotex is not an isolated technology and service. Rather, it should be viewed as part of the evolutionary process involving interactive graphics and the electronic service industry. Integration was the recurring theme. Integration was seen as a completed, desired or inevitable trend. There was consensus that on the technical side, integration was proceeding: VLSI chip development for hardware, micro-videotex capabilities. However, it was noted in Session 1 that research is required to enable videotex systems to process and support large databanks of information and improved networking to facilitate multi-user, real-time participation.

While some spoke of past experiences with trial services, the majority concentrated on the present and future offerings. Public access services; vertical market, targeted services; closed-user business services were mentioned as areas of development. Videotex service to the home is labouring under the weight of subscribers' high expectations, but it is expected to be the "gold mine", the entry into the consumer's home, in the difficult-to-fix future.

Without doubt, the challenge for the videotex industry is to find unbiased research methods that will help to ascertain user needs and therefore, lead to services that offer users the content that they want and need and will pay for. The success of the industry lies in the content and the development of applications with perceived value.

Of interest to the Canadian videotex industry is the American scene. Speakers remarked that there is a positive, if somewhat chaotic, feeling about videotex in the U.S. Large American businesses are forming consortia to examine this area: they know that this is a money-losing R&D activity, but they also feel that their future business development is associated with this medium. At present financial institutions and telephone companies are driving U.S. videotex activities. As competition to provide certain types of services (e.g. public access) increases, marketing skills will be emphasized.

The general opinion in Session 6 held that the Canadian videotex industry has a two-year advantage over their American counterparts. They will witness increased competition from the U.S. industry, although they should be able to hold that lead at least in the public access area.

Teletext is making more headway in the U.S. than in Canada. Businesses view the broadcast signal as a valuable resource for "telephone bypass". At first glance, point-to-multipoint distribution seems to be the way to make money. More evaluation of this medium is required.

Session 7 examined the role (past and future) of the government and industry. The government role should involve international standards negotiations and the development of policies that will foster the videotex industry e.g. copyright protection, transborder data flow, government procurement. Industry must continue to focus on the development, packaging and marketing of content that fulfills user needs. The industry should form a trade association immediately to protect its interests and facilitate information sharing. (A meeting was held at the end of the conference, attended by some twenty interested parties.)

A challenge was issued to government and industry: to establish a national videotex/teletext network, comprising existing services. Canadians would have the opportunity to use their own medium and all aspects of the industry (technical, systems operators, information providers, researchers) could use this services as a testbed. This national network would be the next stage in the evolution of communications in Canada.



## 2. INTRODUCTION FROM THE DEPARTMENT OF COMMUNICATIONS

The Videotex Canada meeting, sponsored by the federal Department of Communications was the last major event in the Department's six-year Telidon Program. The meeting, initiated at the request of the Canadian videotex industry, was patterned after a smaller meeting that had occurred in March, 1983. The industry felt that the time had come for another gathering, one that would focus on the Canadian scene, establish a forum for discussion of important issues facing the industry and provide opportunities for industry members to meet and develop business contacts.

The objectives of the Videotex Canada meeting were:

- i. To bring together the members of the Canadian videotex industry and their potential clients.
- ii. To provide a forum for the discussion of common goals, problems and solutions.
- iii. To provide a forum for industry concerns; thereby, giving the federal government necessary information that could be used when planning future government programs in the informatics and videotex areas.

The planning committee consisted of representatives from the Department of Communications' Telidon Program Office, Ontario Regional Office and Information Services; the Department of External Affairs and the Ontario Ministry of Transport and Communications.

Invitations were sent to more than 1500 organizations including those in the videotex industry, many provincial and federal government departments, publishers, press and those companies deemed to have a potential interest in the development of the videotex industry. Just under five hundred people attended the meeting, representing some two hundred organizations. One of the worst storms of the season greeted delegates. Unfortunately, some panel members were stranded in airports and stalled on blocked roads. The changed program is reflected throughout Part 3 of this report, The Sessions.

The sessions were developed to give both the videotex veteran and the novice an appreciation for the history and the development of videotex in Canada and an assessment of the potential marketplace in Canada and the U.S.. The panel members selected represented a wide range of companies and concerns. (It should be noted that, despite intentions to the contrary, the detailed substance of the meeting might be difficult for a novice to comprehend.) Many presentations incorporated videotex graphics and some demonstrated videotex products. Audience participation was encouraged in the sessions. Key to the success of the meeting were long breaks between sessions that gave attendees an opportunity to converse.

Initial plans for the meeting included a trade show and seminars. However, as the deadline approached, it became clear that there was not enough time to implement a trade show of the quality desired.

Marcel Masse, the Minister of Communications, gave the closing address on the first day. Afterwards, he hosted a reception that gave attendees an opportunity to discuss matters concerning the Canadian videotex industry.

### 3. THE SESSIONS

#### SESSION 1: The Canadian Perspective: Past, Present, Future

##### i. Panel Speakers:

- John Madden, New Media Technologies, Chair
- Jocelyne Picot, Association of Atlantic Universities
- Douglas Parkhill, former Assistant Deputy Minister, Research, DOC
- David Carlisle, Network Videotex

(Note: D. Carlisle could not appear at this session. His remarks were given in another session, but are included here to preserve the context.)

##### ii. Major points:

#### The Past: Establishing Telidon Internationally

"The Telidon Program is a unique and inspiring example of government-industry cooperation that has created an important new industry in this country...and made a magnificent contribution to the worldwide videotex venture."

Douglas Parkhill

Doug Parkhill placed the development of Telidon in an historical context encompassing the evolution of computers (prior to 1978) and the realization that an information revolution was beginning.

Prior to 1978, there was a growing international recognition that an "information revolution" was starting to occur, one that would fundamentally transform human capabilities:

Yoneji Masuda in Japan, who coined the term "Computopia" and whose report, "The Plan for an Information Society: Japan's Goal Toward the Year 2000" was an international event in 1972.

Marc Porat and Edwin Parker in the U.S., developers of the concept of the Information Economy.

Simon Nora and Alain Minc in France, whose report "L'informatisation de la Societe" led to the Tel-Informatique program and eventually the largest videotex program in the world.

Stafford Beer, in Great Britain and Paul Armer and Daniel Bell in the U.S., all prophets of the post-industrial society and its implications.

Peter Rainger, John Chambers and their colleagues; and Sam Fedida, the Englishmen who invented teletext and videotex respectively.

Shortly after the Canadian Department of Communications was formed in 1969, it organized a comprehensive review of present and future prospects for telecommunications. These Telecommission Reports spawned a flurry of activity including a 1973 Green Paper on "Computer Communications Policy" and three White Papers in 1975. The world's first two transcontinental, all-digital data networks, the Trans-Canada Telephone System and the CNCP network, were completed in this period.

The year, 1978 was pivotal: in the spring, a Canadian program based on Telidon was announced and after a press conference on 15 August, the Telidon Program was established at the Department of Communications (under the direction of Doug Parkhill).

In retrospect, Parkhill feels that the ambitious goals set in the early days of the Program--by the government and industry--were largely unfulfilled.

The successes that did result from the Telidon Program include:

- The model for government/industry cooperation, i.e. The Canadian Videotex Consultative Committee.
- Canada's recognition in the international videotex scene.
- The establishment of a new Canadian industry.

#### The Present: Steady Industry Growth

"Canada has a better standard [with NAPLPS than with the original provisional Telidon standard]. It was better to fix the direction of the standard early on...even though Canadian industry was set back two years."

John Madden

In May, 1981, AT&T announced support of the Telidon standard. This enabled the Canadian standard to be used as the basis for the North American Presentation Level Protocol Syntax (NAPLPS). This more complex standard caused problems and confusion for those involved in Telidon field trials.

In December, 1983, a joint Canadian Standards Association/American National Standards Institute(CSA/ANSI) proposal led to the official acceptance of NAPLPS.

Initially, there was an unreal expectation on the part of industry and government regarding the growth of a videotex industry.

Presently in Canada, there is slow, steady growth in the videotex industry. The growth areas for videotex are:

- Public Access: More than 50 companies have identified this as an area of interest. Companies may enter this area at a reasonable cost, establish an infrastructure and learn about the various aspects of the videotex business.

- Business Uses: Makers of large, business computers (e.g. DEC) are developing videotex software as options for business to use. Target vertical markets are being developed such as Grassroots for the agricultural community. Others are finding sales opportunities by putting videotex terminals on the workers'desks (i.e. Marketfax).

- Educational Applications: Use of videotex in educational institutions and in the home have long been viewed as areas of opportunity.

The Canadian videotex industry sees that its future growth is tied to reducing content production costs, thereby increasing the availability of more content; while at the same time, pushing for cheaper hardware to facilitate wider audience acceptance.

Reference was made to market research done in the U.S. (CSP International) indicating that the current costs of videotex services are in the order of \$30-40/month, about three times too expensive for penetration of the residential market (i.e. mass market penetration). This research indicated that there might be significant penetration of the mass market if videotex services cost \$4-6/month. At costs of \$8-12/month, urban professionals might be attracted.

#### Consumer Videotex

"Consumer videotex is still in its very, very early developmental stages; therefore, I would suggest that rumours of its demise are highly premature."

David Carlisle

Dave Carlisle presented an overview of consumer videotex (videotex services in the home) and its future. In Canada, there has never been a consumer videotex service commercially available.

In the U.S., a potential fifty consumer services are under development. The existing ones are struggling because of technical problems, poor marketing and failure to assemble the amount and type of content that the market wants. Even services with large numbers of subscribers (e.g. Compucard, banking services) find that the amount of connect (usage) time is small.

A number of things must occur before meaningful market penetration and significant sales of consumer videotex is a reality:

- There must be improved content. Content must be packaged in a recognizable, meaningful way. For example, services that are useful provide an essential reason to buy videotex: bill payment service, grocery as comparison shopping service, reservation and ticketing services. More content must be developed to give the consumer the feeling that the information is complete. Reference was made to a Touche Ross study indicating that 75% of the information on a particular theme had to be present to avoid user disappointment. Currently, services have about 5% representation. Further, there must be improved automation of the content development process to reduce costs and offer services to the consumer in the \$10/month range.

- The computer power of videotex terminals must be more fully utilized to support multi-user interaction and offer larger databases of information to avoid disappointing the user.

Despite the fact that no one quite knows how to tap the consumer market, large companies are investing in an examination of the area: Sears, IBM, RCA, CBS, AT&T, City Corp, Source, Bank of America, Chemical Bank, Knight Ridder, Ganett, Times Mirror, Compuserve.

Is the videotex consumer market fact or fiction?

Market research from six test markets show a strong interest in consumer videotex, with potential initial sales in the \$5-6 million range/year.

It is impossible to predict when the consumer videotex will begin to unfold. Carlisle guessed that it would be 3 years or more and that it would represent a market of several hundreds of millions of dollars.

Market research forecasts that when the critical mass of content is achieved to make videotex attractive to the home consumer, it will then have the potential for penetrating 90% of households. At this point it is a "must have" item, a utility; videotex will then be a mass medium.

## The Future: Understanding User Needs

"The user and his needs have not been given enough consideration in videotex development so far. Still, user needs are crucial to the future development of this industry."

Jocelyne Picot

Jocelyne Picot emphasized that the key to the future of videotex lies in understanding the user needs.

Various frameworks or perspectives have been used for the study of new technologies, such as videotex systems, ranging from concern with human factors to preoccupation with design and markets. For example, Ted Grusec, Associate Director of the OCS Program of the Department of Communications saw three levels of human factor research interest, corresponding to concerns with hardware, with conviviality and finally with "socioware"--or the intensity and frequency of use.

By comparison, research into user needs has received inadequate attention, possibly because of difficulties involved in defining needs, the consideration of which involves complex factors. One important set of factors resides in the user's context.

Researchers must avoid: looking for a typical user in isolation of the user's context, asking the user to image his needs in an unknown future, and formulating the user's long term needs based on a simple trial where the novelty element clouds the issues.

The challenge for researchers is to find a multi-dimensional framework to assess user needs, one that is apt to produce a comprehensive picture of the user and his milieu. The case study approach was suggested as a suitable starting point.

The implication for the future of videotex is clear: until the needs of the new generation of users can be addressed, videotex will remain targeted to small, specialized services.

### iii. Discussion Period

QUESTION to Jocelyne Picot: Would you apply McLuhan's tetrads to videotex?

ANSWER: McLuhan believes that technology goes through four stages of application (the tetrads):

i. New technology amplifies what already exists. Videotex amplifies computer information with colour, graphics, real-time access. Videotex amplifies communications by having the potential to link mass audiences with each other, as well as with information sources.

ii. New technology makes obsolete existing methods. Videotex makes obsolete older ways of presenting information e.g., information is presented in graphs rather than as numbers.

iii. New technologies retrieve aspects of former technology. Videotex retrieves the concepts of: mainframe-terminal communications, the global village network concept, the old forms of banking and buying.

iv. New technology flips from its originally-conceived use into its real role. The big question is: What will videotex "flip" into? At present, there is no certainty as to what videotex will become.

QUESTION to the panel: Would they comment on the future of videotex-assisted education?

ANSWER: Jocelyne Picot replied that little computer-assisted-learning (CAL) using videotex existed but that an increasing use of videotex with video disc might be the precursor for CAL. She mentioned the Inter-Provincial Association for Telematics and Telidon (formerly the CVCC Education Subcommittee) as a cohesive group examining various educational applications including the future exchange of courseware and information via CONSORTEL, the national, educational computer network consortium.

(Author's note: Videotex-assisted training is being conducted by Hydro Quebec, the Department of National Defense, Parategac, Ford Canada and General Motors Canada)

QUESTION: Why is there a gap in the pricing?

ANSWER: Doug Parkhill replied that a tremendously significant and unexpected development occurred in 1981, software that enabled micros to decode and create videotex-format information. Further, he suggested that by 1995 the term, "videotex" would be made redundant by the universal use of the personal computer terminal. The point emphasized that users may access information worldwide without concern for the standard format.

QUESTION: Is there a resistance to terminals in the home because it may isolate the user?

ANSWER: Jocelyne Picot noted that European research finds that videotex is not as convivial as previously thought, but it is good for users who are not mobile. User needs should be addressed in case studies.

**QUESTION:** What is the role of video disk in videotex?

**ANSWER:** Doug Parkhill contends that video disk is an adjunct of videotex. Video disk may enter the home as another information source and a possible support for videotex.

**QUESTION:** Recent deregulation of telecommunications in the U.S. have spawned new services, is the same likely to occur in Canada?

**ANSWER:** Doug Parkhill commented that regulation of telecommunications monopolies (phone, cable, broadcasting) are meant to protect the interests of the subscribers. He admitted that he personally would not recommend following the U.S. example.

**COMMENTS FROM THE FLOOR:**

There is a critical need to integrate computer/videotex people with the business and university communities to foster new ideas for videotex applications.

We have yet to reach the point where potential videotex applications are financially self-supporting. Outside support is still needed.

A national conference, where computer companies can explain and show their hardware and videotex firmware and software, is urgently needed. As well, there should be an opportunity for various videotex applications to be demonstrated.

**iv. Main conclusions**

1. The first pre-requisite in the evolution of Canadian videotex was the integration of Telidon with an international standard and the formation of a model (CVCC) for government/industry cooperation.
2. Consumer acceptance of videotex rests on the integration of user needs with the product offered. The challenge is to find frameworks for research to give valid assessment of user needs.
3. Mass market penetration of videotex is contingent upon the integration of videotex chips with consumer hardware (television sets and microcomputers) and the development of a critical mass of content that the user can identify as meaningful and therefore, valuable.
4. Market research suggests that costs for videotex services should be in the range of \$4-6/month ideally and in any case, not more than \$12/month, if significant penetration of the consumer home market is to occur.



## SESSION 2 The Canadian Market: Exploring the Opportunities

### i. Panel Speakers

- Herb LaPier, Electrohome, Chair
- Robert McConnell, Infomart
- Claude Pineault, Formic
- John McLauchlan, Marketfax

### ii. Major Points

#### Videotex: A Communications Medium

"Videotex is an incremental medium; that is, once connection is made with the user (either technically or financially), new services and data can be added at low cost."

Robert McConnell

An updated version of the story of the invention of the Gutenberg Press was used to illustrate that videotex, as a medium, is an idea ahead of its time.

McConnell characterized videotex as:

- a communications medium. This means that market opportunities lay in the content, in the sort of information that is best conveyed by the videotex medium.
- an incremental medium. Once a user is connected to videotex (technically and financially) new services and information can be added at low cost. The cost and the value of information are not related therefore, since an application may have a high value to the customer but cost little.
- an interface between computer databases and the naive user. As a front end to any computer database, it allows the user to introduce variables and receive the resulting information in a readable form (charts or graphs rather than columns of numbers).
- a management system. Tokyo Power and Light Company appreciate that information is the foundation of management and control. They are using the information provided via videotex as a management system.

In comparing the Canadian videotex industry to that of the U.S., Europe and Japan, McConnell noted that:

- Large businesses, either as consortia or individually, are getting into the area of information services e.g. banks, publishers, retailers, newspapers, computer companies and communications companies.

- Canada, with an open economy, is in a vulnerable position, pinned between Japan and the U.S.

- Canadian businesses should take advantage of the Canadian situation: experience in this field, and a country of manageable size and scale i.e., the amount of useful information and the size of the audience are in manageable proportions.

- Videotex is the key to realizing Canada's potential in the information business because it is a medium that anyone can use and it can be tailored to specific elements of interest at low cost. For example, Infomart, is refining the lessons learned from past experience and applying them to a new system for the business market.

#### Market Opportunities: Micro-Videotex

"Le micro-videotex est-il une alternative, ou n'est-il pas la solution?" [Is micro-videotex an alternative or the solution?]

Claude Pineault

Claude Pineault sees the present and future success of Telidon in market niches based upon the integration of videotex and microcomputers.

The emergence of videotex and micros. Micros have rapidly penetrated various facets of life: business, home, education and their numbers continue to grow. Microcomputer users are constantly looking for new applications, a golden opportunity for NAPLPS. Meanwhile, as the power of micros increase and prices drop, they become attractive systems for business use. These systems can support videotex.

Significant developments beginning in 1978, formed the basis for the evolution of micro-videotex:

- The IBM-PC is released and finds ready acceptance in the business world.

- Cheaper, high-speed modems become available.

- Dramatic increase in the memory capacity of micros.

- Introduction of the hard disk and powerful local networks.

- Introduction of compact micros like the Apple 2c and simplified user-machine interfaces e.g. the mouse for the Apple Macintosh.

Pineault's company, Formic, was established in 1981, to provide a selection of videotex products based on micros rather than dedicated computers.

The range of micro-videtex applications includes:

- Page creation: There are page creation software packages for both micro and mini computers. For example, some system operators have a series of dedicated, page creation micros connected to a central, hard disk storage, while other, use mini computers to create, store and access videtex pages. Another configuration involves creating pages on micros and sending the finished product via a communications link to a main-frame host.

- Applications currently on large computer systems will be made available for micros. For example, digitized images, which use massive amounts of computer memory, will be automatically transferred into NAPLPS code which requires much less memory to store the basic geometric elements. Groups of micros, each with a specific task, will be joined by a local area network to provide the necessary computer power.

Market opportunities lie in the provision of micro-videtex products that are solutions to users' needs:

- A portable system for audio-visual presentation based on a micro permits a large data base of videtex information to be selected, down-loaded and updated in real time for a highly interactive presentation.

- Public access systems based on micros are more flexible and cost efficient than ones based on larger computer systems since information can be down-loaded and stored in a micro terminal for quick response to the user.

Micros provide effective terminals for videtex services in vertical markets. For example, Grassroots, MarketFax, Videolog sell an information service to an installed base of micros rather than requiring the subscriber to have a dedicated videtex terminal.

(It should be noted that some micro-videtex products do not adhere to the full NAPLPS Service Reference Model due to limitations of the micros.)

Information systems where information is sequentially cycled. For example, for cable companies offering several channels of information and for convention centre information systems, there are micro-videtex software products that create the NAPLPS-format pages and control the simultaneous cycling of information on several channels.

Micro-videtex products can improve the effectiveness of other products. For example, Formic has developed a micro-videtex controller that can control up to ten Sony videtex/videtex units simultaneously to superimpose graphics, video and text on the screen. As the market for interactive video products matures so do the opportunities:

An IBM PC-based system simultaneously controls up to 16 interactive Electrohome videotex terminals, each terminal has stand alone capability for computer-managed-learning.

Formic offers micro-videotex products in the above-mentioned categories.

#### Videotex: On The Way To Full, Interactive Video

"There is no such thing as a Telidon industry. Telidon is simply a superb, economic, graphics communications technique that is one giant step on the road towards full, interactive video."

John McLauchlan

McLauchlan feels strongly that those who take videotex in the context of interactive, visual communication, will create successful videotex products.

Videotex applications must add value to information; that is, increase comprehension, aid retention of information, make reading easier, present a more usable format, give the user control over defining the information required. For example, his company has products that add value to information such as:

- On-line, real time, digitized page creation.
- Graphics tele-conferencing capabilities.
- Dynamic charting of the 37,000 items in the Statistics Canada CANSIM data base.
- Dynamic charting of 7,000 stocks trading on the NYSE, AMEX, TSE, MSE and VSE.

Canadian companies must consider international markets, particularly the U.S., as the prime focus for broadening their opportunities. For example, there are 500 stock brokerage firms in Canada, 1,000 in New York and 9,000 in the U.S. Faxtel products for this target market are market tested in Canada prior to marketing abroad.

#### iii. Discussion Period

COMMENTS from Jim Carruthers, Norpak.

He supported John McLauchlan's comments. Carruthers said that NABTS, the teletext standard, should be seen in the larger context: an excellent, packet, single-point-to-multi-point distribution system on which to build applications. Viewing NAPLPS and NABTS as ends in themselves is short-sighted and will not lead to successful market applications.

#### iv. Main Conclusions

1. Videotex is a communications medium and as such the market opportunities lay in the content.
2. Videotex is an aspect of full, interactive video.
3. Successful videotex applications add value to the content e.g., increase comprehension, aid retention, make reading easier, present a more usable format, give the user control over defining the information required.
4. The cost and the value of information are not proportionately related. An application may have a high value to the user but cost little to obtain. Once a user is connected to videotex, new services and information can be added a low cost.
5. Videotex is the key to realizing Canada's potential in the information business.
6. The area of micro-videotex is one that initially offered alternatives to users but now there are applications that are solutions to user needs.
7. The international market affords larger market opportunities than Canada. Canada videotex companies enjoy some market development and having a test ground of manageable proportions in terms of the required amount of information and the population size.

#### SESSION 3: Living With the Standard

##### i. Panel Speakers:

- Doug O'Brien, IDON, Chair
- Yun-Foo Lum, DOC
- Robert Vaive, DOC
- Bob Morin, Manitoba Telephone System
- Dan O'Leary, New Media Technologies

##### ii. Major Points

"NAPLPS is a basic presentation standard on which to build an information industry"  
Doug O'Brien

Doug O'Brien presented an overview showing that international standards (from Morse Code to NAPLPS) are part of the evolutionary process of establishing an industry.

## Behind The International Standards

"The politics of international standards is seen in the development of the colour television standard. The first standard, the North American NTSC is said to mean Never The Same Colour Twice. The next standard, the French SECAM system, is often referred to as a System Entirely Contrary to the American Method and finally, the German PAL standard is called Peace At Last."

Dr. Yun-Foo Lum

Dr. Lum summarized the six-year battle (1978-1984) to have the alphageometric (Telidon) format recognized as an international videotex standard.

There are advantages of having one's own standard:

- It eliminates or reduces the non-tariff barrier to trade.
- It improves the export potential for products and services. Third World Countries buy CCITT or CCIR approved equipment and services.

Despite acceptance of alpha-geometric in the definition of the videotex standard, there are still some areas of the standard that are incomplete. The international interworking for videotex systems, CCITT T101, is the new battle ground. The unresolved problem is how to interwork the various videotex systems.

Direct transcoding/conversion. The terminal in one standard can access the database in another standard. This facilitates interworking between private videotex systems.

Intermediary data syntax (the European approach). The terminal of one standard must use a single gateway to access terminals of the other standard, thereby giving the PTT full control over international traffic.

## The History of Teletext Development

"The year 1980 was a difficult time for teletext: the changing teletext standard had a big impact on the manufacturers and in turn, on the teletext trials at TVOntario, Alternate Media Center/WETA, and CBC."

Robert Vaive

Robert Vaive capsulized the history of teletext in Canada culminating in the acceptance of a joint Canada/U.S. teletext standard, NABTS.

Although NABTS was published in March, 1984, several policy and regulatory issues remain:

- Teletext is still operating under an "experimental" classification in Canada.
- The question of who owns the Vertical Blanking Interval, the broadcaster or the information service provider, is not officially resolved.
- Policies allowing advertising on the teletext medium have not been adopted in Canada.

#### Hardware Manufacturers and the Moving Standard

"It takes a competent technical person a few months to reach a level of understanding where the complexity of NAPLPS is no longer a problem, and the standard is seen for what it is: a powerful graphic 'tool'." Dan O'Leary

Dan O'Leary discussed some of the issues arising in the design and integration of equipment to decode and display NAPLPS images. This presentation was the most technical in detail.

The graphic communication protocol embodied in the Telidon/NAPLPS standard is powerful and complex even though its structure and syntax are rigorous and well-integrated.

Once a technical person views the standard as a powerful graphic tool, the NAPLPS document is treated as a reference manual, rather than something to be "lived with".

The necessary hardware required to build a decoder is quite simple:

- The terminal model is a single display area, capable of holding about 256 X 200 pixels, each pixel can be one of 16 colours from a look-up table of 512 colours.
- The decoder uses a raster-scan refreshed colour CRT, with a video memory of 25.6 Kbytes (comprising 256 X 200 pixels, 4 bits/pixel, 2 pixels/byte), refreshing the CRT via a colour look-up table memory that holds 16 values, each 9 bits wide.
- A microprocessor and program decode and display the NAPLPS data as images to be displayed.
- There are also input/output devices for communication to the host computer and to the user.
- This circuitry is not complex to design or build.

Raw manufacturing costs continue to decrease as integrated circuit memory capacity increases.

Problems arise when one attempts to add NAPLPS to existing hardware:

- Most personal computers have a suitable pixel resolution for NAPLPS but inadequate colour resolution.
- NAPLPS added to existing hardware requires decoder software writers and the image creators to adopt techniques to aid page portability. For example, an image should be constructed in such a way that it will not be lost if shades of colour are displayed as the same colour. The colour look-up table should be re-loaded after every RESET with colour values for the "pure" colours.
- Current problems with using NAPLPS on personal computers will soon be resolved as new generations of computers have improved colour map capability.

The major problem area in living with the standard is the software.

The NAPLPS standard, in a few areas, intentionally leaves the precise definition of semantics (rules of action in response to a command) up to the implementor e.g. the font for text and the proportional spacing of the particular font.

Consideration is currently being given to a North American guideline on proportional spacing with techniques for handling implementation on existing hardware.

#### The User: Trying to Live with a Moving Standard

"I was the guy implementing [the moving standards], always a year behind the others [developing the standards]."

Robert Morin

In 1980, Manitoba Telephone System began carrying the Infomart Grassroots service including the provision of terminals to subscribers. Robert Morin, Manitoba Telephone System (MTS), represented the users' requirements on the various technical subcommittees dealing with development of the NAPLPS standard.

The period 1979-1984, was a difficult one for videotex users. The challenge was to implement the changing technical standards in a way that was the least disruptive to the subscribers. This meant that the service providers and the information providers took the brunt of the change, working with terminals and databases of various technical formats. For example:

- MTS started with 699 terminals accessing a 699-format database.



- In May, 1981, AT&T announced its Presentation Level Protocol and CRC began work to upgrade Telidon (699E format) accordingly to the interim format, Technical Note 709E. Subsets of both 699E and 709E, known as "699/709 Retrofit Level", were implemented on the old 699 terminals. The 709 subset that was implemented is compatible with the current NAPLPS standard.

- In the interim period 1982-83, MTS thus had 699 and 699/709 retrofit terminals accessing two different types of databases: one with information created in 699 format for 699 and 699/709 terminals, and one in 709 format for either 699/709 or NAPLPS terminals.

- The 699 terminals were not compatible with databases created in the new 709 format; therefore, all the 699 terminals throughout Manitoba had to be retrofitted before Infomart could convert the Grassroots database (then in 699 format) to the NAPLPS compatible 709 format.

- The final system configuration allowed the upgraded "699/709 Retrofit Level" terminals to access both a 709 database and a NAPLPS database.

In retrospect, Morin concluded that:

- Even an evolving standard was a help since it provides some basis for comparison.

- In particular, the NAPLPS standard permits future development and innovation since the system coding architecture is specifically hardware independent to allow manufacturers latitude in implementing the standard. It also has hooks that allow future improvements such as: 3-D graphics, increase in the number of simultaneous colours displayed, backward compatibility and default to the basic implementation.

### iii. Discussion Period

Comment from Jim Carruthers, Norpak: The standards must be resolved and frozen or else, the Canadian videotex industry will suffer irreparable harm in its attempt to implement the latest version of the standard. The aim should be to get something that is workable, as quickly as possible.

Comment from Yun-Foo Lum: A good NAPLPS test package (about 500 frames) was essential for testing all presentation aspects of the decoder.

#### iv. Main Conclusions:

1. Canada fought hard to have Telidon incorporated into the international videotex and teletext standards. The gains far out-weigh the difficulty of the task.
2. Even though the NAPLPS and NABTS standards have been accepted for videotex and teletext respectively, incomplete areas remain. For example, in the NAPLPS videotex standard, T101, how to interwork international videotex systems, is unresolved. In the NABTS standard, a number of regulatory/policy questions remain.
3. Evolving technical standards are difficult for manufacturers to cope with. NAPLPS is a complex standard; however, good technicians come to see it for what it is: a powerful graphic tool. Interpreting the standard remains difficult particularly where the standard intentionally leaves the implementation "dependent" upon the implementor.
4. Building a NAPLPS decoder is a relatively straight forward process. Much more challenging, is adding NAPLPS capability to personal computers because of the deficiencies inherent in the personal computer architecture. The evolution toward more powerful personal computers with improved colour capabilities will solve these difficulties.
5. The videotex system operators and the information providers bare the brunt of the evolving standard as they attempt to maintain the least disruptive service for their subscribers and clients. In fact, they are the last in the chain to have a say in how the standard should be implemented and they are the ones that have to deal with a hodgepodge of equipment and databases of varying standards format. Even here, the majority view is that a moving standard is better than nothing.

#### SESSION 4: Government and Public Services Applications

##### i. Panel Speakers

- Roy Marsh, DOC, Chair
- Donald Tapscott, Trigon Technologies Inc.
- Bill Dawson, Descom

(Note: David Carlisle appeared on this panel. His comments have been included with Session 1 to preserve the original context. John Lomoro, National Museum of Man, was prevented from attending by the inclement weather.)

## ii. Major Points

### An Examination of Office Automation and Videotex

"The tools of personal productivity and the tools of communications are converging in the world of office automation and videotex."  
Donald Tapscott

Donald Tapscott outlined the evaluation of office automation and videotex that his company is conducting with a small test sample from the Manitoba public service, DOC and DSS. Specifically, the task is to test the viability of integrating videotex with new office automation systems.

A field test was established in September, 1984. The proposed tools offered in the trial include:

- access to external public videotex databases,
- videotex page transfer,
- access to other computer systems,
- use of business graphics package, slide creation and presentation,
- forms facility,
- shared workspace for teleconferencing,
- on-line videotex format documentation
- a full range of business applications.

Although the field trial is still in progress, some tentative conclusions were made:

- there appears to be synergy between videotex and office automation.
- medium resolution is required for graphics displays and a printer is needed.
- there is a dilemma: a low resolution monitor and an inexpensive printer are not sufficient to provide quality graphic presentation. On the other hand, a higher resolution monitor that gives better graphic presentation is often too expensive for the average office.
- the present hardware configuration is unsatisfactory because there are two monitors per work station: one for graphics and one for text. A one-monitor workstation is required.

- there is a significant effort required to integrate videotex into an office system ( about twice that originally anticipated).

### The Usefulness of Videotex in the Construction Industry

"In the construction industry there is data pollution. The need is straight forward: to find the right information each time it is required and verify that it is the latest version, preferably in graphic form."  
Bill Dawson

Bill Dawson made it clear that he used videotex because it satisfied his needs. He set the scene for his graphic presentation by stressing that each construction project must be considered a prototype; that is, one starts from scratch every time with an ad-hoc group. The result is:

- a lot of information is required in graphic form.
- Many people view and take the information away with them, thus there has to be a mechanism to assure that the information they have is the latest and correct version.
- There is a need to store and retrieve graphic information quickly and cheaply.

With these needs in mind, Dawson undertook a bench mark test: The objective was to incorporate NAPLPS with high resolution graphics running on an IBM PC using mainly off-the-shelf packages thereby adding little additional cost.

A CAD/CAM machine produced a drawing of a building. With appropriate software, the user could focus on a section of the building and in about 60 seconds that area was transferred into a NAPLPS page that could be stored or transmitted via normal communications (e.g. telephone) to any location. Further, it could be stored or changed by either the client or the contractor, or both. All parties had access to the latest revision of the design.

This NAPLPS software is known as FACMAN, Facilities Management. The test was successful and met the needs set forth in the objective.

In sum, a comprehensive construction industry information system has many uses:

- To produce the latest product literature.
- Small manufacturers can obtain access to the construction industry at reasonable costs.

- Furniture manufacturers who have changing price lists can save money by updating the information electronically.

Graphics aid the promotion of products.

### iii. Discussion Period

Question from Ken Barclay, field trial evaluator, to Donald Tapscott: Is there a concern about the transmission speed of NAPLPS material?

Answer: Tapscott replied that it depended on the nature of the information.

Gary Phippard, Phippard & Assoc., volunteered that even a subset of NAPLPS appears to be of use in the office and that the incremental impact of graphics makes the work stations more acceptable to the workers in the office.

### iv. Main Conclusions:

1. The integration of personal production tools and communications with videotex in the office seems inevitable. The question is when and how?

2. Videotex has a place in the construction industry where it fulfills the user requirements for:

- the most current, correct version of the information
- graphic presentation of information
- a graphic communications system for transmitting information between client and contractor.

## SESSION 5: The American Scene

### i. Panel Speakers:

- Haines Gaffner, Link Resources, Chair
- Sam Berkman, AT&T
- Paul Orme, Viewtron
- Tom Gilboe, Grassroots

### ii. Major Points

#### A Summary of the American Videotex Scene

"In the U.S., everybody feels good about videotex but there is a kind of chaos."  
Haines Gaffner

Haines Gaffner sees four major trends in the American videotex scene:

1. There is a growing realization that videotex is part of a bigger scene, a component of video services to the mass market and an adjunct to telephone communications for the growing computer market. It will be a long haul to establish videotex in this milieu but it will happen. Videotex should be the leading light of the electronic services industry.

2. American companies are forming consortia to explore videotex. At the moment, corporations see videotex as an R&D expenditure. Although videotex is not expected to make a profit in the near future, there is a feeling that it is somehow integral to a company's future. Large corporations are testing the videotex waters: AT&T, Bank of America, Chemical Bank and Time; Dow Jones; IBM, Sears and CBS have formed Trintex; Tribune; Twentieth Century Fox; Control Data; Raintree Publishing; MCI; RCA and City Bank; etc. Companies are realizing that to make videotex successful a lot of support from companies in different fields is required.

3. Adding videotex capability to microcomputers will be a major thrust forward for videotex. The large and growing numbers of higher priced micros in the office and, increasingly, in the home provide the needed market penetration for videotex services.

4. Telecommunications companies and banks are currently the leaders in making videotex happen in the U.S. The deregulation of telephone companies (creating seven new Bell Operating companies) coupled with the projected growth of home banking services gives impetus to corporations in these areas to investigate videotex.

#### Integration is The Key to Videotex Success

"Why is videotex so difficult to define? One reason is that it is changing, the industry is evolving and will continue to evolve as the technological capabilities change and our understanding of consumer needs grow." Sam Berkman

Sam Berkman presented an historical synopsis of the evolution of videotex on the American scene, followed by comments on AT&T's current marketing efforts.

The four major AT&T videotex trials (1978-1982), showed that videotex:

- is dependent on a critical mass of information,
- must offer value in relation to cost,
- has unlimited potential as an advertising medium,

- advertising may provide the revenue necessary to lower or divert the cost of videotex to the consumer.

AT&T offers its customers videotex components or an entire videotex system. Videotex software modules can be added to business computer systems. Increasingly, business is realizing that videotex supplies useful, colour graphics, information that is easily updated and that it is generally easy to use.

Business is willing to invest in videotex and add it to the company's computer system because the advantages are recognized:

Internal communications:

- executive communications
- newsletters, inventory, modeling.
- personnel information
- headquarters - field office information sharing
- training
- updating information for presentations
- security is assured

In the U.S., there is activity in public access videotex.

- Public access in retail stores. It is projected to reach \$1.6 billion by 1986 and \$4.1 billion by 1988.

- Other systems provide entertainment, reservations and ticketing services e.g., San Francisco, Sacramento, Oklahoma,

- Electronic directories.

Berkman sees the importance of public access and business videotex systems as a means to educate the consumer about videotex.

The Viewtron Service in Southern Florida

I think that videotex will be a good business. Viewtron, is the test bed for assessing Knight Ridder's business future in videotex."  
Paul Orme

Details of the Viewtron service, began in southern Florida in November, 1983 were outlined:

- The target audience is 225,000 households out of a possible 1.5 million.

- The target group is between 25-49 years of age with an income of \$35,000.

- Currently, there are 3,000 subscribers, 3 million pages of information and 250 electronic marketers, 50 information providers and 450 restaurants participating.

- Subscriber satisfaction is high (86% are satisfied).

Future enhancements of Viewtron include:

- encouragement of national advertisers

- advertising from local merchants.

- "pro-active" content e.g. wine reviews and recommendations, book reviews.

- the addition of micros to the videotex network (AT&T Spectre, Commodore 64) for on-line access to databases in NAPLPS or ASCII format

- expansion into the business market.

Viewtron predicted market trends:

- The U.S. videotex scene will witness:

- growing competition for videotex markets.

- an attempt to accelerate videotex acceptance by subscribers by developing more micro-videotex applications; offering cheap, dedicated terminals for those not wanting a computer and inexpensive modems and reasonably priced communications.

#### Grassroots: A Market Opportunity for Canadians

"I would like to put into perspective the opportunities afforded to us as Canadians in terms of sales, service, products and expertise south of the border." Tom Gilboe

Tom Gilboe reviewed Grassroots and its success as a service for a target, vertical market. Having started Grassroots in Manitoba five years ago, the service has been tested and improved for introduction to the American market:

The objectives of the Grassroots service are:

- to permit the farmer to make more informed production decisions
- to permit the farmer to make more informed marketing decisions.

All content supports the above objectives. Information is constantly updated e.g. weather, commodities, stock market, product information on chemicals, fertilizers, equipment etc.; messaging services, access to external information sources,



transactional services (banking and shopping); interactive farm management tools (to improve productivity, crop planning, financial analysis).

There are two areas in the U.S. receiving Grassroots service:

i. Grassroots America joint venture between Videotex America (Infomart and Times Mirror) and three agricultural co-operatives ( Agway of Syracuse, Synex of Minneapolis and Southern States of Richmond).

The target market is 16,000 farmers with revenues in excess of \$100,000 annually in the Delmarva area.

- Phase I: began in fall 1984, resulted in 350 subscribers.

- Phase II: beginning in May, 1985 will broaden the geographical base.

- Phase III: a national service aimed at the 250,000 farmers earning in excess of \$100,000 annually.

ii. Grassroots California joint venture between Videotex America and McLachie Newspapers and TDC Publishing Inc.

The potential market is 4,500 farmers earning in the excess of \$100,000 annually in the richest agricultural state in the U.S.

- Phase I: announced in January, 1985, forecasts 350 subscribers by the end of 1985.

Investment in Grassroots is investment in a service for a large, stable, geographically-compact, target market.

The current subscribers are the innovators and they are reached via direct marketing. The wider subscriber base will be reached via distribution channels such as: agricultural associations, agricultural stores, agricultural computer stores,

The Information Providers involved in Grassroots are the ones that usually provide products and services to this target market e.g., Dupont, Ciba-Gigy, ICI, Agway etc. They are learning about the videotex medium and have a unique market opportunity to reach a sector of the U.S. economy that is geographically-compact, large and stable.

### iii. Discussion Period

Question to Paul Orme: The need for a critical mass of content was mentioned and yet, Viewtron will accept content only if it is developed on AT&T equipment. Why doesn't Viewtron adopt an open-door policy for content if it is truly interested in building volume?

**Answer:** Orme responded that there must be technical, operational reasons for the AT&T requirement. He said that Canadian companies were among the information providers.

**Question from Nick Russell, University of Regina:** Is there a future for news services on videotex?

**Answer:** Gilboe said that Grassroots supports a high news content with editorial comment to inform farmers of issues. He also said that newsletters were a vital area.

Orme felt that videotex is a new information medium. If value is added to information, then it will be offered.

**Question from Barry Ellis, University of Calgary:** The University of Calgary had integrated voice and data in NAPLPS form for teleconferencing continuing education courses. He asked what the panel is doing in the field of education?

**Answer:** Orme said that Viewtron recognizes the importance of education and carries Scholastic Aptitude Test (SAT) drills, information on colleges and scholarships, math drills, encyclopedic information and students have been encouraged to produce an on-line newspaper and interactive bulletin board.

Berkman commented that business is examining videotex for training and for adult education in the home.

Gaffner said that U.S. schools have little money; therefore, videotex in the school system will not happen for a time. When it does occur, it will be as an adjunct to the computer population in the schools.

#### iv. Main Conclusions

1. The current U.S. videotex scene is characterized by:

- the realization that videotex is part of the bigger scene of video communications.
- the formation of consortia to explore the applications of videotex.
- the integration of videotex and microcomputers.
- the entrance of telecommunications companies (since government deregulation) and banks on the American videotex scene.

2. The key to the immediate success of videotex is integration with business systems including video disc.
3. U.S. videotex activity is currently centred on business applications and public access.
4. There is a trend in the U.S. towards growing competition for videotex markets.
5. An established, tested videotex service for a target, vertical market will be well-received in the U.S. e.g., Grassroots.
6. Canadian videotex companies may want to consider forming joint ventures with American companies to exploit particular videotex market segments.

SESSION 6: Public Access and Business Services: A Proven Track Record.

i. Panel Speakers:

- Maurice Sprumont, Infomart, Chair
- Martin Lane, Link Resources
- J.D. MacCulloch, Videotex Atlantic
- Gunter Kurz, Genesys Group
- Cathie Irwin, Bank of Montreal

Main Points

U.S. Market Trends: Opportunities for Canadian Companies?

"Canada has about a two-year-lead in public access videotex and it has a chance of maintaining that lead." Martin Lane

Martin Lane outlined the current videotex trends as follows:

Smaller distribution networks are being used. The small, centralized system (such as the Genesys system) is gaining widespread acceptance. Micros are the terminals attached to these small networks and they are each capable of holding a database. This type of network configuration lowers the initial capital requirement and lessens the risk incurred if videotex is not successful.

Increased franchise activity. There is activity to lease franchises (e.g., Infomart Teleguide) and to establish dealer networks (e.g., Microvations, a semi-autonomous dealership). This type of arrangement makes it possible to line up national advertisers (similar to the national radio and television networks) and to defray costs.

Increased use of peripherals. Customers like to have a written record and so, the requirement for printers is growing. The hardware configuration for point-of-sale videotex involves a videotex/video disc hybrid. The added video makes selling easier; however, there are updating and editing restrictions with this hybrid.

Increased competition in market sectors. Recently, Infoview announced that it would move into Las Vegas, a city where Infomart offers service. In Louisville, Kentucky, Tayson won a contract for which Infomart was also vying. Increased competition means that marketing capability is critical to a company's success.

Increased market segmentation. Usage measurement techniques are viewed with skepticism. Companies are moving into markets where there is a proven result e.g., Microvation is moving into shopping malls, a domain previous staked out by Video Press.

Widespread acceptance of NAPLPS format for public access videotex. Public access is an area where Canadian companies have had success. For this application, dependable hardware is critical. AT&T, Sony/NCR have announced new hardware products for this niche, thereby placing market pressure on Canadian manufacturers. Public access software developed by Infomart has a good reputation in the U.S.; however, large American companies are beginning to enter this area.

#### A Small Business Perspective on Videotex Opportunities

"We work closely with the industries that we serve to develop videotex products that provide added value for our customers."

J.D. MacCulloch

Videotex Atlantic, J.D. MacCulloch's company, was incorporated in the fall of 1982 to provide videotex applications to the business sector. In a relatively short time they have developed a number of service and retail industry databases:

SEAGUIDE - targeted to the tourist and hospitality industry. It incorporates the on-line, provincial reservation service, Check-in, that gives immediate confirmation and lists 95% of the total accommodation available in Nova Scotia. The videotex database is organized around the seven tourist regions in Nova Scotia, there is a 2-minute video on each region and the information is updated regularly. The capabilities include text, slides, video, audio and videotex. Advertisers seem to prefer videotex rather than video for promotion in the database.

Electronic Flyer - An information/advertising system for point of purchase advertising displays consisting of scrolling and interactive databases. Remote, free-standing displays in retail food stores are updated weekly by down-line-loading a new information package.

Videotex Atlantic feels that as a small business its strength and success lies in working closely with the industries that it serves.

Small businesses need government support in the form of investment tax credits to encourage more investment dollars.

### Videotex Modules Linked to Business Systems Spells Opportunity

"The Genesys Videotex Software has its roots in the development undertaken Department of Communications lab during the 1970s and early 80s.. We have spent a considerable amount of money to bring the software package from the lab to the commercial arena to produce a mature product running successfully on a variety of hardware in Canada, the U.S. and Japan."

Gunter Kurz

The Genesys Videotex Software consists of a videotex software kernel, on top of which various applications may be built. The Genesys videotex kernel runs on the RSX operating system and resides on DEC hardware.

Genesys serves three market sectors:

- Public Access Videotex. The Genesys package consists of self-monitoring software that can also gather data on usage and location statistics. This is the basis for the Infoview system in Oklahoma City, Springfield and Las Vegas and OTranspo (Ottawa) bus schedule information that is updated each minute. These public access turnkey systems serve up to 96 simultaneous users.

- Banking. The Genesys Banking Software is a transaction-preparation, front-end subsystem connected to the bank's mainframe computer. It permits bill payment, account transfer, balance inquiry, messaging, financial information and financial modeling. This software is used in the Empire Savings Bank and Metroteller in Buffalo, N.Y. It can support IBM PCs, Commodore 64 and Apple computers.

- Videodisc Display Systems. This system is designed for promotions, exhibitions, point of sale and electronic catalog applications. Configured in single or multi-user applications, it offers touch screen, coupon printer and a telephone specially secured for public access use.

## Videotex and On-line Banking: An Opportunity?

"There are still a mass of technological, behavioral, placing and timing uncertainties involved in trying to define a home banking opportunity. The Bank of Montreal's underlying objective is to resolve as many uncertainties as soon as possible."

Cathie Irwin

Participation in Grassroots was based on the Bank of Montreal's desire to expand its access points, to reduce the costs of providing retail banking services and also, because the bank was used to responding to the market.

Bank involvement was phased in. First it sponsored access to: the commodities exchange, bank product and service information and interest rates, then it offered on-line banking services.

On-line services included: checking account balances, transferring funds and getting account statements via a Bank of Montreal gateway from Grassroots to the bank's real-time banking system.

The consumer response indicated that: bill paying was in high demand, new customers were attracted by home banking and that customers really are concerned about privacy and confidentiality.

The Home Banking Interchange is a consumer research pilot test, by a consortium of thirteen American banks and the Bank of Montreal. One hundred Toronto homes and twelve hundred U.S. homes may check their accounts, transfer funds, pay bills electronically, open accounts and send messages and instructions to their branch.

The Bank of Montreal's experience indicates that these factors effect home banking:

- Customers' concerns about security and confidentiality are very real and low cost technical solutions remain unresolved.
- Audio and ASCII (the international standard for text for microcomputers) enhancements are desirable.
- There must be an acceptable pricing structure in relation to the perceived usefulness of services.
- Vertical, highly targeted markets e.g., small business sector is a way to market the service.
- Increased participation by big companies will raise needed capital and the level of public awareness.

### iii. Discussion Period

Comment from Bruce Grayson, Loyalist College: He suggested that public access was an entrepreneurial way to become involved in videotex and that Canadian software companies seem to have a leading edge.

Comment from Ken Barker, Market Research : He defended the use of professional market research results. Martin Lane, Link Resources said that focus groups have been overrated. There is a great need for a research infrastructure that permits reasonable market research to be done.

Question from Elizabeth Wray, Toronto Community Information Centre: What is the future for information of social benefit? Since 1981 they have been exploring videotex and find that no one wants to underwrite this type of content.

Answer: Martin Lane said that this area is attracting some interest. The state of New York agencies are investigating videotex.

Question from J. Delorme, Burotel 2000 Inc.: How can information be shared by the various systems across Canada?

Answer: Martin Lane said that the issue of portability of content has not been addressed even though there is a NAPLPS Service Reference Model. (SRM)

Maurice Sprumont replied that the session level protocols were different for various systems.

Yun-Foo Lum stated that equipment compliant the the SRM was just now on the market. Further, host-to-host or gateway level protocols should resolve this problem.

Jim Carruthers, Norpak, said that this problem should be resolved by 1988.

Question from Murray McKerracher, Bell Canada to Martin Lane: Would you comment further on your opinion that Canadian companies have an inability to penetrate the U.S. market?

Answer: Martin Lane's reply was based on happenings between 1981-84, during which, Canadian hardware disappeared from the American scene not only because of problems with prototypes, but more importantly, due to inadequate servicing. In his opinion, Canadian companies are still reluctant to make arrangements with American companies to service their equipment. Given this major problem, Lane felt that "it is possible, but not probable, that Canadian success will continue in the U.S."

iv. Main Conclusions:

1. The current videotex trends in Canada and the U.S. are:
  - smaller distribution networks.
  - increased franchise and dealership activities.
  - growing use of peripherals to meet user needs.
  - increased competition in market segments.
  - increased market segmentation.
  - acceptance of the NAPLPS format for public access videotex.
2. Canada currently enjoys a head start in securing videotex opportunities in the U.S. Canada may maintain this advantage for the next two years; however, the competition will increase steadily as large U.S. companies enter the market.
3. Several Canadian companies have achieved success with videotex products aimed at particular market niches such as public access and targeted business applications. Some Canadian companies are pursuing business opportunities internationally e.g. Genesys, Videotex Atlantic, Infomart, Tayson, Formic, etc.
4. The Bank of Montreal has been exploring the issue of providing banking services to the home; however, several issues remain unresolved. Until these issues are addressed, widespread home banking services in Canada will be delayed. As noted earlier, banks in the U.S. are a driving force behind the expansion of videotex services.

SESSION 7: Government/Industry: A Partnership?

i. Panel Speakers:

- Bert Blevis, DOC, Chair
- Robert Menard, Douserv Telecom
- Rex Schofield, Dominion Information Services
- Peter Desbarats, University of Western Ontario
- Ray Koski, Department of Regional and Industrial Expansion (DRIE)

ii. Major Points

"This session will explore further and clarify the respective roles of the government and industry in shaping the future of the videotex industry."

Bert Blevis

Dr. Blevis clarified the roles of government and industry in videotex from the government's point of view:

The Minister of Communications stated that videotex is part of a larger informatics industry and as such, must contribute to the improvement of Canada's balance of payments through



international sales. [See appendix for the entire text of the Minister's speech.]

In the past, the government initiated and also funded certain mechanisms in an effort to seed the growing videotex industry. E.g. the Canadian Videotex Consultative Committee, the IISP, the Public Initiatives Program, the Telidon Exploration Program, the Telidon Content Program and the recently established Canadian Workplace Automation Centre at Laval

The government can continue to support videotex by establishing conducive policies in those areas under government jurisdiction. E.g. establishing sound policy, regulations and legislation, continuing the international standards battle, on-going R&D, technology transfer to industry and government procurement policies that support the Canadian videotex industry.

#### Is Canada Ready for a National Teletext/Videotex Network?

"My presentation is based on this assumption: industry has long-term goals but is shortsighted; while government has the resources to be foresighted, it has short-term goals. If the two can work together in a complementary way, then government can improve industry's long-term viability and industry will have a more long-term view of its place in the economy, thereby helping government."

Robert Menard

Robert Menard outlined his view of the roles of government and industry regarding videotex.

The role of the government:

The government, with its considerable human and financial resources should provide orientation, funding and market research; identify future target markets; undertake feasibility tests (with results available to industry).

In the area of research, the government should encourage industry evaluation of market research studies and provide more checks and balances in the government programs to counter self-interest and bias on the part of the researchers.

On the financial side, the government should stimulate joint-venture mergers and the formation of consortia and provide the muscle required to penetrate international markets. Government seed money should be put into targeted R&D projects to spur new applications. Further, the government could act as a catalyst and/or partner to assure that a project has long-term viability through funding. As industry matures, the government should phase out funding.

The role of industry:

Industry concentrate on producing the product, providing service, developing expertise, creating more job opportunities and in general, fostering growth in the industry.

Menard issued this challenge to both government and industry: create a national teletext/videotex service network.

A study conducted by Dousery, estimates a cost of \$4-6 million to implement two commercial services, built upon existing networks.

The network would involve satellite, telephone, broadcast and cable distribution using the existing infrastructure (IRIS, Inet, Videoway, satellites).

The subscribers would be the test bed for:

- trying target services,
- testing behavioral perceptions e.g. price vs. value.

The initial services offered would include an economic/financial service and an air and travel information service.

The information providers could test the cost effectiveness of gathering, producing, transforming and delivering information. They could also evaluate value-added applications.

In time, service vendors would be responsible for maintaining the service.

#### The Need for a Videotex Industry Association

"I personally believe that there is a place and a very great need for an industry association on the Canadian scene. It should be information-based rather than market-based and it should be aimed at the broad cross-section of participants in the videotex industry."

Rex Schofield

Rex Schofield, urged the industry to form an association to share information and to defend itself when needed.

Schofield views the role of the government as one that:

- concentrates on improving the laws regarding intellectual property and copyright,
- examines the ramifications of trans-boarder data flow,

- supports the adoption of videotex use within the various government departments
- stimulates the industry through financial policies such as tax incentives.

Industry, on the other hand, should leave the problems associated with implementing the standard and move on to other concerns such as:

- producing a critical mass of content to attract subscribers,
- improving the tools of content production,
- developing quality communications at lower costs to foster interactive transactions.

The industry was cautioned not to forget the educational community and the non-profit organizations, sectors responsible for innovation and economic and job growth. These groups provide a useful and a different perspective.

Schofield appealed to the those present to meet after the conference to discuss formation of an industry trade association.

## The Role of the Educational Community in the Videotex Industry

"I am very surprised that the contribution of the academic community to videotex is not reflected in the program of this conference."  
Peter Desbarats

Desbarats, Dean of the School of Journalism at the University of Western Ontario, commented that CONSORTEL (a national, educational, hardware-independent network via which universities and colleges can transfer NAPLPS materials) contains more than 300 pages of educational services using NAPLPS.

As an example of the involvement of the educational community with NAPLPS, Desbarats cited activities at the University of Western Ontario:

- provision of a daily videotex news service to Grassroots and another daily feed to Agrastar in Minneapolis.
- the establishment of a university-level course in videotex journalism.
- sponsorship of the first international conference on videotex journalism in 1984.

A \$500,000 grant from the Department of the Secretary of State has aided the establishment of a centre for mass media studies research and development.

Desbarats believes that future government programs would benefit greatly from university participation because it is the area that provides the most return. The combination of government, industry and university gives more value for the funding dollar.

### Some Federal Government Funding Programs

"The challenge to industry when applying for government assistance is to make clear the net economic benefits of the proposal; that is, the sales expected, the export potential, the number of new jobs created, how it will assist Canada's balance of trade."  
Ray Koski

A brief summary of the various federal government assistance programs for industry was given.

There are various kinds of funding available from the federal government:

- departments with a specific mission e.g. the Department of Communications and Telidon.

- departments that have operational needs.
- funds to develop technology and applications.  
     E.g. The Source Development Fund  
         The Unsolicited Proposal Fund
- funds assigned for the development of technology.  
     E.g. The National Research Council IRAP program will  
         pay 85% of the salaries of technical personnel
- industrial development funding.  
     E.g. i. the Department of Defense program for Defense  
         Industry Productivity (DIP)  
         ii. the Department of Regional & Industrial  
             Expansion (DRIE) commercial and export programs.

In order to obtain funds from DRIE the following criteria must be met:

It is necessary to show the economic benefits accruing from the proposal e.g., job creation, sales, export potential, balance of trade.

The funding may cover market research studies, new production design, any aspects that entail innovation.

Funding of this type will cover 33-50% of direct costs.

Various export programs exist that cover: market research abroad, trade fairs, subsidizing incoming buyers, the formation of export consortia and assistance to pursue large sales.

### iii. Discussion Period

Comment from Roger Elmes: CONSORTEL was further clarified. It is a machine-independent network linking a consortium of colleges, universities and Ministries of Education formed for the purpose of transferring NAPLPS materials. The network is based on a software package, EAN, developed at the University of British Columbia under an NSERC grant. A company will soon be marketing EAN commercially. CONSORTEL would be pleased to participate in a national videotex network.

Comment from John Markle, Federal Business Development Bank: A national videotex/teletext network based on the European or Japanese models was laudible.

Comment from Yun-Foo Lum: He rephrased the Menard challenge: Do you see a market for linking various videotex and teletext projects? If the answer is yes, then industry should link them and a common gateway standard should be developed.

Comment from Jim Carruthers, Norpak: Canadian companies (including Norpak) are in a life-and-death situation in international markets. He said that the government should support international marketing and in this light, it is shocking that the government permitted IRIS (the CBC teletext service) to be cancelled.

Comment from Peter Desbarats: The public awareness of Telidon is so low because the industry does nothing to raise the image of the videotex industry. When the IRIS service ceased there was no public reaction. This attests to lack of awareness of videotex.

Comment from Roy Marsh, DOC: The CBC is still broadcasting a teletext test signal, although the IRIS service has been disbanded.

#### iv. Main Conclusions

1. A Canadian videotex industry trade association should be established. Based on the sharing of information, such an association is fundamental to developing, maintaining and furthering a videotex industry in Canada.

(Note: At the end of the Conference, a number of videotex companies met to discuss the formation of a videotex industry association.)

2. Despite the fact that the Telidon Program is over, there is a strong feeling that government involvement in videotex is still required to assist the nascent industry.

3. The main areas where government should be involved include:

- financial assistance in the form of tax incentives to encourage investment capital in the videotex industry.
- continued work on international standards.
- assistance in the international marketing area, e.g. stimulating joint ventures and consortia.
- establishing government policies that are conducive to the growth of the videotex industry. E.g. government procurement policies, regulatory and legislative policies (intellectual and copyright protection, advertising on cable, trans-border data flow, data base access and communications charges), large R&D programs.

4. A national Canadian videotex/teletext service network should be established immediately by linking existing services. This network would be the test bed for all aspects of the videotex industry from user studies, to applications, to system operation and development. Foreign visitors could see Canadian technology in use in Canada.

5. The educational community has been involved in videotex from the start. Business and government should realize the contribution of this sector and avail themselves of the high calibre of work that is done at the university and college level with minimal funding. The combination of government, industry and university gives more value for the funding dollar.

6. Traditional government funding programs exist and some may be of assistance to the videotex industry.

7. The level of public awareness of Canadian information technologies should be raised. The responsibility lies with the government and the videotex industry.

8. The government believes that a videotex industry exists in Canada. Further, videotex is seen as part of the overall informatics industry. As such, the videotex industry is increasingly expected to contribute to Canadian productivity and to assist in developing a positive balance of trade.

## SESSION 8: New Frontiers

### i. Panel Speakers:

- Bill Sawchuk, DOC, Chair
- Allister Pedersen, DOC
- Jim Carruthers, Norpak
- Gordon Hutchison, Electronic Communicator

(Note: George McCabe, Cablesare, was scheduled to appear on this panel. Unfortunately, family illness prevented his attendance.)

### ii. Major Points

#### Videotex For Mobile Locations

"Consider a new category of videotex/teletext application, mobile applications, the delivery of graphics and information via mobile radio or broadcast frequencies to cars, trucks, ships and aircraft."  
Allister Pedersen

Recent government actions are assisting the spread of mobile radio services:

- The CRTC mobile radio interconnect decision allows private mobile radio systems to interconnect with the federally-regulated telephone systems.

- The Department of Communications has authorized the implementation of cellular mobile telephone services in Canada.

- Pending final government approval, a mobile satellite service (MSAT) may be implemented as early as 1989, to provide mobile radio, telephone and data services to vehicles equipped with small antennas. MSAT service coverage extends 200 miles beyond each coast.

- Relaying NAPLES data via mobile radio signals entails some technical innovations in error correction techniques.

There are various applications for mobile videotex:

- Meteorological briefings for aviation, shipping, oil rigs, etc.

- Aviation information, e.g. airport runway diagrams, pilot information.

- Road and traffic conditions, e.g. highway construction, severe weather conditions.

- Emergency information, e.g. location of hospitals, highway phones, highway patrols. The Phoenix Fire Department transmits pictorial information showing hydrant locations, etc.

- Law enforcement, e.g. digitized mug shots, composite sketches

- Engineering diagrams, e.g. electrical power distribution systems, natural gas pipelines etc.

- Marine: oil rig platforms can chart ice flows, information for commercial fishermen concerning currents, weather, position of schools of fish.

- Forestry: mapping, wind analysis for fire fighting; locating lightning strikes.

#### The Consumer Mass Market May Soon Become A Reality

"My experience is that it takes ten years to form an industry. The Canadian videotex industry is eight years old. We are about to see the birth of that industry: The videotex hardware has stabilized and the addition of the Rockwell/Norpak VLSI R6549 chip to the hardware has greatly reduced the price. This should help videotex to achieve market penetration."

Jim Carruthers



Carruthers previewed the new NAPLPS hardware that Norpak will be releasing:

Videotex Decoders:

- VTX 6 - a new, low cost, portable, hand-held decoder.

A multi-mode teletext and Videotex professional decoder suitable for cabletext, teletext and open captioned service.

Videotex interface cards for computers will be available, e.g. the IBM PC card has the videotex chips and extra room for various options.

Picture Creation Systems: The follow on IPS product will feature tools which dramatically increase productivity. Automatic picture capture is implemented with low byte count.

The big news is on the teletext front. Carruthers emphasized that NABTS is a very powerful point-to-multipoint packet distribution protocol: Teletext is one application.

Data/Teletext Broadcast Encoder: Modular cards for the teletext decoder enable the system operator to provide up to 19 different services.

The 19 teletext service modules include: data, stock market, down-line-loading software, captioning, local and regional inserts, etc.

Decoders have a data port for connection to a printer or computer.

Service operators at all levels (national, regional, local) can re-mix the content and send out a teletext service of their choice.

A NAPLPS-based cable service can be implemented with autocycling with pages from broadcast services.

A number of companies will announce new data and broadcasting services. For example, record stores on the U.S. west coast will provide information displays that dispense coupons, the Dallas/Fort Worth Marriott will have an in-house, unique information system delivered via CBS broadcast. CBS will also provide information to various shopping centres in the U.S. and a major financial publisher will announce service. Samsung has announced that their new television sets, on the market in early 1986 and their converters available in late 1985, will include the Norpak NABTS chips.

## Content is Key

"The meat of this conference is that business opportunities lie in exploiting the application rather than the technology."

Gordon Hutchison

As the final speaker, Gordon Hutchison took the opportunity to outline the major themes of the conference.

Two main concepts emerged:

### i. The technology

The government should maintain its activities in the international standards process.

### ii. The content

The business opportunities lie in exploiting the application of the technology.

To develop marketable applications the industry should be asking itself: What does the user want? How can it be delivered?

### iii. Discussion Period

Comments: Several people remarked that the educational community and the non-profit groups have much to contribute and that they should have access to the videotex systems. New ideas will come from this sector.

Comment from John Storey, DOC: The broadcast signal is a very powerful medium for delivering data and it has yet to be explored. He said that he would be interested in examining new service potential with interested parties.

### iv. Main Conclusions:

1. The videotex/teletext hardware is stabilizing and the prices are falling. For the first time, videotex as a mass medium may be a reality as consumer products with built-in videotex/teletext enter the marketplace.

2. The power and potential of teletext has yet to be explored. This is a major area for future opportunities.

3. The success of videotex industry is in the content and the development of applications with a perceived value.

4. The federal government should maintain its role in the international standards.

5. Once the videotex industry is more established it may wish to consider future market opportunities. One of the areas of interest may be the mobile videotex market and developing highly specialized services for companies and government agencies with mobile field units.

#### 4. CONCLUSIONS

Inherent in the title of this conference, **Videotex Canada: Understanding the Canadian Marketplace**, are a number of questions that panel speakers addressed. For example:

1. What is the Canadian market for videotex?
2. What is the state of the videotex industry in Canada?
3. How do the Canadian industry activities compare in the international world of videotex?
4. What type of videotex services are required (and will be successful)?
5. Is the necessary technology in place to support these services?
6. Do we have research methodologies that give us unbiased assessments of user needs?
7. Should the government play some role in supporting the Canadian videotex industry?

There was a recurring theme in answering these questions. This theme may be summed up in one word: **INTEGRATION**. The presenters saw integration as a completed, desired or inevitable trend taking many different forms. They spoke of :

- i. The integration of Telidon with an international videotex/teletext standard.
- ii. The integration of the NAPLPS and NABTS chips (VLSI) with television sets and microcomputers. Consumers may buy these items for reasons other than videotex; however, once purchased, the videotex capability is there when the user is ready.
- iii. The integration of the videotex and teletext standards into the newest (and also the previous) models of hardware.

iv. The integration of videotex with computers --mainframe, mini and micro and turnkey systems --in an office environment to enhance the needs of the business community.

iv. The integration of private business, university and government activities with in a program aimed at conducting advanced technical and market research to assure leading edge technology and applications.

vi. The integration of the content, the medium and user needs as fundamental to user acceptance and mass audience appeal.

vii. The integration of videotex with interactive video technology.

viii. The integration of the videotex industry with the larger informatics or electronic services industry.

ix. The integration of content and value added service e.g., time saving, graphic presentation aids quick comprehension, easy to use, latest information automatically updated, saves money.

x. The integration of vertical markets and targeted videotex services for those markets.

xi. The integration of computer power with unique videotex services that offer larger databases of information to the user and support multi-user interaction.

xii. The integration of unbiased frameworks of evaluation with user-needs assessment to ascertain how users perceive and use videotex.

The conference program placed a marked emphasis on the role of the government, past and future. This concern was understandable since the conference was sponsored by the federal Department of Communications (DOC), since that department funded and fostered the nascent Canadian videotex industry and since the Telidon Program officially expired on 31 March, 1985. Some presenters toasted the government's historical role: the birth of the DOC Telidon Program in 1978, the fight to have Telidon recognized at the international standards level, the underlying government philosophy that government and industry were partners in establishing a Canadian videotex industry. The Minister of Communications acknowledged the growing Canadian videotex industry and told the conference that the government expected the industry, as part of the informatics industry, to contribute to Canada's balance of trade. The conference intuitively expected an outline of some government policies that would help the videotex industry to rise to the Minister's expectations, policies regarding government procurement, copyright to protect Canadian databases and software and financial tax incentives, to name a few. These expectations were unfulfilled.

The conference unanimously urged the government to continue working in the international standards arena and to continue research and development work.

A challenge was put before government and industry, a challenge that received growing support throughout the conference: To establish a national Canadian videotex/teletext network. The network would comprise existing services and represent all aspects of the industry (private and public). The merit of this proposal lies in Canadians using Canadian services and technology in the information age and recognition by the government, through its support, that videotex is an important information and network fundamental to Canada's sovereignty. Defining the Canadian Marketplace in 1985, did not seem to be a difficult task:

- vertical, target markets, e.g. Grassroots, the construction industry, advertising agencies

- the office - optional addition to installed computer base (mainframe, mini or micro level)

- public access

- education and social agencies

What proved difficult, was defining the services and the content of the services based on the user needs in the Canadian Marketplace in 1985. Consensus held that:

- there must be value added to the information, e.g. front end processing of large databases to produce the information graphically.

- home banking service may prove strong.

- the amount of information offered to a home user must be indepth and extensive. It will take several years for this market segment to mature.

In general, the U.S. videotex scene seems to be more active and more confused than the Canadian marketplace. For instance:

- large, American companies are forming consortia to explore the business potential of videotex.

- the major question is: how can videotex make money?

- U.S. videotex activities are being driven by financial institutions and phone companies.

- There is much more interest and exploration of teletext in the U.S. Teletext is regarded as point-to-multipoint distribution or "phone bypass", a powerful distribution medium.

- Services to the home are not doing well. It is difficult to define and meet the consumers' needs.

- Competition is increasing in those market areas that have been successful to date. This means that marketing prowess will become even more important.

- The Canadian videotex industry enjoys about a two-year lead over the Americans. They will have to work hard to maintain that overall advantage, although particular market segments, e.g. public access, may be successfully defended.

As the saying goes, "You can always be assured of support if you help yourself". There were suggestions that the Canadian videotex industry could help itself by:

- establishing an industry trade association

- supporting the establishment of a national videotex and teletext network

- recognizing that innovation also comes from the public sector

- joining with academia and/or government to explore technical, marketing and research projects.

The future of the Canadian videotex industry may be summed up in one question: What services? Inherent in this question is the emphasis on content, exploring ways to add value to content so that the subscriber perceives a product of value and finding accurate, and unbiased frameworks with which to evaluate user needs.

APPENDIX A  
THE CONFERENCE PROGRAMME

VIDEOTEX CANADA: UNDERSTANDING THE CANADIAN MARKETPLACE

Metro Toronto Convention Centre

MONDAY, MARCH 4, 1985

9:00 - 10:30 THE CANADIAN PERSPECTIVE: PAST PRESENT FUTURE

Chair: John Madden - New Media Technologies

Speakers: Jocelyne Picot - AAU  
David Carlisle - Network Videotex  
Douglas Parkhill

The short history of Telidon in Canada is marked by a number of major achievements. From its debut as the first alpheageometric version of videotex, through field trials and standards negotiations, to viable commercial services today - the markets and strategies for the technology have evolved. Presenting a review of this evolution, leading experts in the field highlight the milestones and explore future avenues for videotex development in Canada.

10:30 - 11:00 COFFEE

11:00-12:30 THE CANADIAN MARKET: EXPLORING THE OPPORTUNITIES

Chair: Herb LaPier - Electrohome

Speakers: Robert McConnell - Infomart  
Claude Pineault - Formic  
John McLauchlan - Marketfax

Today, videotex services and applications are finding niches in the Canadian marketplace. The broad spectrum of possibilities, from audio-visual presentations to large operating systems, encourages access to a variety of markets. In this session, the Canadian market potential for videotex system operators, service providers and page creators is explored. Where are the opportunities in Canada and how can industry exploit them?

12:30 - 2:00 LUNCH

2:00 - 3:30 LIVING WITH THE STANDARD

Chair: Herb Bown - IDON

Speakers: Robert Vaive - DOC  
Bob Morin - Manitoba Telephone Systems  
Yun-Foo Lum - DOC  
Dan O'Leary - New Media Technologies

The development and acceptance of a North American videotex standard has been a challenging process with its promises and pitfalls. How has this process affected the growth of videotex

in Canada? What problems remain for videotex communicators today? This session addresses the issues surrounding the implementation of full NAPLPS services as well as the position of NAPLPS on the international scene.

3:30 - 4:00 COFFEE

4:00 - 5:00 GOVERNMENT AND PUBLIC SERVICES APPLICATIONS

Chair: Roy Marsh - DOC  
Speakers: John Lomoro - Museum of Man  
Don Tapscott - Trigon  
Bill Dawson - Descon

As the developer of Telidon, the Government of Canada with the co-operation of provincial governments has invested in the technology since 1978. From early videotex services such as Teleguide and Cantel to more recent applications such as TABS (Telidon Aviation Briefing System), government support for service start-up has been significant. Primarily, the government has supported public service applications.

5:00 - 7:30 MINISTER'S PRESENTATION AND RECEPTION

TUESDAY, MARCH 5, 1985

9:00 - 10:30 THE AMERICAN SCENE

Chair: Haines Gaffner - Link Resources  
Speakers: Bruno Leps - Grassroots America  
Sam Berkman - AT&T  
Paul Orme - Viewtron

Increased investment by major American corporations promises new opportunities for the sales of Canadian services, products and expertise south of the border. This session explores videotex services, developments and the current market environment in the United States.

10:30 - 11:00 COFFEE

11:00 - 12:30 PUBLIC ACCESS AND BUSINESS SERVICES:  
A PROVEN TRACK RECORD

Chair: Maurice Sprumont - Infomart  
Speakers: Martin Lane - Link Resources  
J. D. MacCulloch - Videotex Atlantic  
Gunter Kurz - Genesys Group  
Cathie Irwin - Bank of Montreal

Profitable markets for videotex are in the provision of public access information services in public locations and the use of videotex as a support to the business process. The display characteristics of videotex are well-suited to the delivery of information to the public as well as the presentation of the



advertiser's message. It also enhances display of information in the workplace. Canadian expertise in the development and operation of public access systems and business applications is a guarantee of future growth.

12:30 - 1:30 LUNCH

1:30 - 3:00 GOVERNMENT/INDUSTRY: A PARTNERSHIP

Chair: Bert Blevis - DOC  
Speakers: Robert Menard - Douserv Telecom  
Rex Schofield - Dominion Directory  
Peter Desbarats - University Western Ontario  
Ray Koski - DRIE

A panel of representatives will discuss the respective roles of government and industry in the development of the videotex industry. They will discuss the issues and challenges critical to the growth of videotex in Canada. All delegates are invited to participate in this session.

3:00 - 3:30 COFFEE

3:30 - 5:00 NEW FRONTIERS

Chair: Bill Sawchuk - CRC  
Speakers: Allister Pedersen - DOC  
George McCabe - Cablesare  
Jim Carruthers - Norpak  
Gordon Hutchison - Electronics Communicator

The microcomputer, new cable services, satellites and office automation systems are some of the avenues of future growth for the videotex industry. In this session, speakers evaluate areas of potential expansion and present current initiatives for the videotex industry.

APPENDIX B

SPEECH GIVEN BY MARCEL MASSE

FROM TELIDON

LE ROLE DES GOUVERNEMENTS

TO INFORMATICS

EN MATIERE D'INFORMATIQUE

I AM EXTREMELY PLEASED TO MEET WITH A GROUP OF PEOPLE WHO HAVE SO ENTHUSIASTICALLY EMBRACED A TECHNOLOGY DEVELOPED IN CANADA. I NOTE THAT YOUR NUMBER INCLUDES BOTH PROPONENTS AND USERS OF THE TELIDON TECHNOLOGY AS WELL AS THOSE WHOSE INTEREST IS RECENT AND WHO ARE EAGER TO LEARN MORE. ALTHOUGH I AM A COMPARATIVE NEWCOMER TO THE DEPARTMENT OF COMMUNICATIONS, I HAVE FOLLOWED CLOSELY THE DEVELOPMENT OF TELIDON AND THE ESTABLISHMENT OF INTERNATIONAL STANDARDS BECAUSE THEY ARE IMPORTANT TO CANADA IN SO MANY WAYS.

TO OUR INTERNATIONAL VISITORS, I EXTEND A SPECIAL WELCOME. THANK YOU FOR YOUR INTEREST AND YOUR PARTICIPATION.

GRACE AU DEVELOPPEMENT DE TELIDON, LE CANADA EST RECONNU PARTOUT AU MONDE COMME L'UN DES CHEFS DE FILE DANS LA REALISATION DES NORMES ET DES PRODUITS PERFECTIONNES DE VIDEOTEX ET DE TELETTEXTE. TELIDON EST UNE TECHNOLOGIE AVANCEE DE COMMUNICATIONS DE L'INFORMATION. ELLE EST SURTOUT CONNUE POUR SA CAPACITE D'ACCES A L'INFORMATION SOUS FORME DE GRAPHIQUES ET DE TEXTES. L'ELEMENT ESSENTIEL DE TELIDON EST FOURNI PAR LES INSTRUCTIONS DE DESCRIPTION DE L'IMAGE, QUI PERMETTENT LE CODAGE DES IMAGES D'UNE MANIERE TRES COMPACTE.

IN 1978, IN THE MIDST OF CONSIDERABLE INTERNATIONAL COMPETITION, THE TELIDON PROGRAMME WAS STARTED TO TRANSFER TECHNOLOGY AVAILABLE IN THE GOVERNMENT LABORATORIES TO THE PRIVATE SECTOR. IT WAS FELT THAT THIS TECHNOLOGY WOULD RESPOND BETTER TO OUR NEEDS IN CANADA THAN THE OTHER EMERGING VIDEOTEX SYSTEMS. WE HAVE BEEN ABLE TO STIMULATE PRIVATE SECTOR INVESTMENT IN HARDWARE AND CONTENT DEVELOPMENT, SPONSOR FIELD TRIALS AND APPLICATIONS AND TO FURTHER RESEARCH AND DEVELOPMENT.

THE DEDICATION OF THE MEN AND WOMEN IN INDUSTRY, SMALL BUSINESS, GOVERNMENT AND THE ACADEMIC AND NON-PROFIT COMMUNITIES HELPED TO TRANSFORM TELIDON FROM A CONCEPT TO A WIDELY ACCEPTED INTERNATIONAL STANDARD. THANKS TO THEIR IMAGINATION, HARD WORK, ENTHUSIASM AND COMMITMENT TO EXCELLENCE, TELIDON HAS BEEN RECOGNIZED BY THE CCITT. THIS, IN TURN, HAS CONTRIBUTED IMMENSELY TO CANADA'S REPUTATION IN THE CRITICALLY IMPORTANT HIGH TECHNOLOGY MARKETPLACE.

YOUR CO-OPERATION IN FIELD TRIALS ENSURED THAT WE COULD EVALUATE THE TECHNOLOGY THOROUGHLY AS THE SYSTEMS AND SOFTWARE WERE BEING REFINED. ABOVE ALL, YOUR FAITH IN THE EVOLVING TECHNOLOGY HAS BEEN REWARDED BY SEEING IT DEVELOP TO THE POINT WHERE IT HAS BEEN ADOPTED HERE IN CANADA, IN THE UNITED STATES, JAPAN AND ELSEWHERE.

SINCE TAKING OFFICE LAST YEAR, THE CHIEF CONCERN OF THE GOVERNMENT OF CANADA HAS BEEN TO SHAPE A POLICY TO REVIVE A LAGGING ECONOMY. OUR PRINCIPAL OBJECTIVES ARE TO DECREASE THE DEFICIT, TO REDUCE THE UNACCEPTABLE LEVEL OF UNEMPLOYMENT AND, ABOVE ALL, TO GET THE ECONOMY MOVING AGAIN. THE LATTER MEANS THAT WE MUST ADOPT POLICIES THAT REWARD ENTREPRENEURSHIP AND RISK TAKING, FACILITATE ADJUSTMENT TO THE CHANGING REALITIES OF NEW MARKETS AND TECHNOLOGIES, AND FOSTER HIGHER INVESTMENTS, GREATER INNOVATION AND INCREASED INTERNATIONAL COMPETITIVENESS.

THIS GOVERNMENT'S NEW POLICIES ARE STILL BEING DEVELOPED. THEY WILL BE ELABORATED THROUGH A PROCESS OF CONSULTATION BASED ON UNDERSTANDING, DISCUSSION AND ABOVE ALL, FAIRNESS; A PROCESS WHICH IS A VITAL PART OF OUR MANDATE. WE SHALL CONSULT WITH PROVINCIAL GOVERNMENTS, WITH PRIVATE ENTERPRISE, WITH CONCERNED ASSOCIATIONS, WITH UNIONS, AND I HOPE WITH ALL THE PARTICIPANTS IN THIS MEETING. THE GOVERNMENT OF CANADA IS ACTIVELY SEEKING THE VIEWS OF CANADIANS IN ALL REGIONS AND FROM ALL WALKS OF LIFE TO HELP US REACH THE APPROPRIATE MIXTURE OF REGULATORY POLICIES, RESEARCH AND DEVELOPMENT PROGRAMS, FISCAL INCENTIVES AND MARKETING SUPPORT MECHANISMS TO FOSTER A CLIMATE OF GROWTH. I WANT AGAIN TO UNDERLINE THE FACT THAT EMPHASIS WILL BE ON PRIVATE SECTOR INITIATIVES.

WE ARE STILL IN AN ERA MARKED BY RAPID AND FUNDAMENTAL CHANGES IN COMMUNICATIONS AND COMPUTER TECHNOLOGIES. SOCIETY IS FACING AN EXPLOSION OF MEDIA INPUT AND THESE CHANGES HAVE HAD A PROFOUND EFFECT ON SOCIAL AND CULTURAL REALITIES.

CETTE NOUVELLE EXPLOSION DES MEDIAS BOMBARDERA A TOUTES FINES PRATIQUES LE CLIENT QUI S'INTERESSE AUX NOUVEAUX TYPES D'INFORMATION ET AUX NOUVEAUX MOYENS D'Y ACCEDER ET D'Y CONTRIBUER. FACE A TOUTES CES TECHNOLOGIES, L'USAGER PEUT DECIDER DE PARTICIPER ACTIVEMENT, OU IL PEUT AU CONTRAIRE SE SENTIR INTIMIDER ET SE LAISSER INONDER PAR CETTE SATURATION DES MEDIAS ET PAR CETTE SURCHARGE D'INFORMATION.

LE VIDEOTEX A UN CERTAIN AVANTAGE DANS CETTE CONCURRENCE CROISSANTE POUR LE TEMPS ET L'ARGENT DU CONSOMMATEUR, QU'IL SOIT AU BUREAU, AU FOYER OU EN DEPLACEMENT. LE VIDEOTEX POSSEDE UNE ELEGANCE VISUELLE ET UNE UTILITE CERTAINE. IDEALEMENT, IL REAGIT ASSEZ RAPIDEMENT ET IL POSSEDE UNE PROFONDE CAPACITE GRACE AUX BASES DE DONNEES ACCESSIBLES. LE VIDEOTEX DOIT CEPENDANT ENTRER EN CONCURRENCE AVEC D'AUTRES MEDIAS FOURNISSANT DES SERVICES IDENTIQUES OU SEMBLABLES.

AS MINISTER OF COMMUNICATIONS, I HAVE THE RESPONSIBILITY FOR BOTH COMMUNICATIONS CARRIAGE AND FOR ITS CONTENT.

C'EST EFFECTIVEMENT DANS SON CONTENU QUE SE TROUVE L'ESSENCE DU VIDEOTEX ET DES AUTRES NOUVEAUX MEDIAS, TEL QUE LA TELEDIFFUSION PAR CABLE ET PAR SATELLITE; PAR CONTENU, IL FAUT ENTENDRE LA DIVERSITE ET LA QUALITE DES SERVICES OFFERTS, LEUR UTILITE FONCTIONNELLE EVIDENTE ET LEUR CAPACITE DE SATISFAIRE LES BESOINS ET LES ATTENTES DES USAGERS. LE DEVELOPPEMENT DU CONTENU DU VIDEOTEX ET SA RAPIDE MATURATION SONT LES PIERRES D'ANGLE DE CETTE TECHNOLOGIE INNOVATRICE.

SO BOTH ASPECTS OF MY MINISTRY ARE AFFECTED BY ACTIVITY ESSENTIAL TO TELIDON.

INCREASED INVESTMENT IN THE DEVELOPMENT AND APPLICATION OF INFORMATICS PRODUCTS AND SERVICES CAN BE AN IMPORTANT ELEMENT IN CANADA'S ECONOMIC REVIVAL. THIS GOVERNMENT AND ESPECIALLY MY DEPARTMENT CAN CREATE A CLIMATE FAVOURABLE TO INDUSTRY DEVELOPMENT AND FACILITATE THE CHANGES REQUIRED IN ADAPTING TO NEW TECHNOLOGIES.

THE DEPARTMENT OF COMMUNICATIONS IS PROUD OF ITS ROLE IN ENCOURAGING THE DEVELOPMENT OF THE VIDEOTEX INDUSTRY. THE CLOSE COOPERATION THAT OCCURRED AMONG ALL LEVELS OF GOVERNMENT, BUSINESS, EDUCATIONAL INSTITUTIONS AND NON-PROFIT ORGANIZATIONS IN THE TELIDON SUCCESS STORY IS A MODEL FOR FUTURE TECHNOLOGICAL CHALLENGES.

AND THERE ARE PLENTY OF CHALLENGES. INFORMATICS IS NOW RECOGNIZED AS A MAJOR GROWTH INDUSTRY. THE WORLD MARKET FOR INFORMATICS PRODUCTS, CURRENTLY APPROXIMATELY 100 BILLION DOLLARS, IS EXPECTED TO TRIPLE BY 1990. THE IMPACT ON OUR LIVES WILL BE ENORMOUS.

DESPITE CANADA'S CAPABILITY IN TELECOMMUNICATIONS, OUR TRADE DEFICIT IN INFORMATICS PRODUCTS IS 3 BILLION DOLLARS PER YEAR AND IS RISING RAPIDLY. THERE IS AN OBVIOUS NEED TO REVERSE THIS TREND. WE MUST STRENGTHEN THE CANADIAN INDUSTRY IN ORDER TO SUPPLY A LARGER PORTION OF OUR NATIONAL MARKET AND COMPETE MORE EFFECTIVELY INTERNATIONALLY. OUR GOAL MUST BE TO SEIZE THE OPPORTUNITIES POSED BY THE GROWING DEMANDS OF THE GLOBAL MARKETPLACE.

THE APPLICATION OF INFORMATICS SYSTEMS AND SERVICES IN ALL SECTORS OF OUR ECONOMY CAN IMPROVE EFFICIENCY AND COMPETITIVENESS AND CONTRIBUTE SIGNIFICANTLY TO ECONOMIC RECOVERY. THE GOVERNMENT WILL DO ALL IT CAN TO CREATE A FAVOURABLE ENVIRONMENT FOR THE INFORMATICS INDUSTRY.

DURING THE LAST FEW MONTHS, FOR EXAMPLE, THE GOVERNMENT HAS INTRODUCED A NUMBER OF PROPOSALS FOR LEGISLATION TO ASSIST THE CANADIAN INDUSTRY. THEY INCLUDE AMENDMENTS TO THE CRIMINAL CODE TO DISCOURAGE UNAUTHORIZED ACCESS TO DATABASES; AMENDMENTS TO EXISTING COPYRIGHT LEGISLATION WHICH IS INADEQUATE FOR TODAY'S ELECTRONIC ENVIRONMENT; AND AMENDMENTS TO THE CANADIAN RADIO, TELEVISION AND TELECOMMUNICATIONS ACT (BILL C-20).

OTHER ACTIVITIES ARE ALSO UNDERWAY. WITHIN THE DEPARTMENT OF COMMUNICATIONS A WORKING GROUP IS DRAWING UP A POLICY FRAMEWORK FOR NEW CONTENT SERVICES, INCLUDING VIDEOTEX AND TELETEXT.

WE ALSO RECOGNIZE THAT THE GOVERNMENT SHOULD BE ACTIVE IN FOSTERING THE INTRODUCTION OF NEW INFORMATICS SERVICES OF GENERAL BENEFIT TO THE POPULATION. WE HAVE RECENTLY CONCLUDED AGREEMENTS WITH MANITOBA AND QUEBEC FOR MAJOR INITIATIVES LEADING TO THE INTRODUCTION OF NEW INFORMATICS SERVICES AND THE RELATED INDUSTRY DEVELOPMENT. SIMILAR AGREEMENTS WITH OTHER PROVINCES ARE UNDER CONSIDERATION. FREQUENT DISCUSSIONS WITH OUR PROVINCIAL COLLEAGUES ALLOW US TO ADDRESS THE CHALLENGES OF THE INTRODUCTION OF INFORMATICS IN A COORDINATED FASHION.

THE ESTABLISHMENT OF STANDARDS HAS BEEN A MAJOR FACTOR IN THIS COORDINATED GROWTH OF VIDEOTEX AND TELETEXT IN CANADA. WE WILL CONTINUE TO BE CONCERNED WITH SUCH ORDERLY AND TIMELY DEVELOPMENT, ACCEPTANCE AND UTILIZATION OF STANDARDS FOR INFORMATICS. WE LOOK FORWARD TO CONTINUING CLOSE COOPERATION WITH INDUSTRY AND STANDARD-SETTING BODIES SUCH AS THE CANADIAN STANDARDS ASSOCIATION AND WE WILL SEEK TO COOPERATE WITH OUR INTERNATIONAL PARTNERS AS WELL.

EFFECTIVE APPLICATION OF RESEARCH RESULTS IS ESSENTIAL. IN FACT THE EFFICIENT APPLICATION OF RESULTS FROM RESEARCH AND DEVELOPMENT IS IMPORTANT IN HELPING PUT CANADA BACK ON TRACK ECONOMICALLY. THE FINAL SESSION OF THIS MEETING IS DESIGNED TO PROVIDE A GLIMPSE AT SOME OF THE FUTURE AREAS OF COOPERATION BETWEEN GOVERNMENT AND INDUSTRY.

THE ANNUAL INFORMATICS SYSTEMS AND SERVICES REQUIREMENTS OF THE FEDERAL GOVERNMENT CURRENTLY TOTAL \$900 MILLION AND ARE PREDICTED TO INCREASE TO MORE THAN \$1.5 BILLION BY 1990. BECAUSE OF THE COSTS INVOLVED, WE WILL CAREFULLY LOOK AT YOUR PROCURMENT STRATEGIES TO ENSURE NOT ONLY THAT WE RECEIVE THE BEST VALUE FOR PRICE AND PERFORMANCE, BUT ALSO TO ENSURE WE GIVE CANADIAN INDUSTRY THE CHANCE TO SUPPLY GOVERNMENT REQUIREMENTS IN VOLUMES THAT MAKE SPECIALIZED AND NEW PRODUCT DEVELOPMENT WORTHWHILE.

ALLOW ME TO ILLUSTRATE. SOME OF YOU MAY BE AWARE THAT A NEW MUSEUM IS BEING BUILT ON THE BANKS OF THE OTTAWA RIVER IN HULL. WE ARE LOOKING VERY CAREFULLY AT THE INFORMATICS SYSTEMS AND SERVICES WHICH WILL BE NEEDED BY THE NEW MUSEUM WHEN IT IS COMPLETED IN 1988. THESE SYSTEMS SHOULD IMPROVE THE HANDLING AND PROCESSING OF INFORMATION AND THEY SHOULD ALSO MAKE THE MUSEUM'S TREASURE HOUSE OF INFORMATION MORE ACCESSIBLE TO ALL CANADIANS. THIS WILL ASSIST INFORMATICS DEVELOPMENT IN THREE WAYS. INDUSTRY WILL BE HELPED BY HELPING THE GOVERNMENT; THE GOVERNMENT'S EFFICIENCY WILL BE INCREASED; AND OUR CULTURAL HERITAGE WILL BECOME MORE ACCESSIBLE TO EVERYONE. WE INTEND TO EXAMINE OTHER OPPORTUNITIES TO MAKE INFORMATICS WORK IN THE SAME WAY FOR THE BENEFIT OF ALL CANADIANS.

THE GOVERNMENT NEEDS THE COOPERATION OF INDUSTRY IN ESTABLISHING A CONSENSUS FOR ACTION. FOR THIS REASON, THE DEPARTMENT OF COMMUNICATIONS IS EAGER TO CONTINUE AND EXPAND ON THE DIALOGUE WHICH SERVED US SO WELL IN THE TELIDON PROGRAM. I HOPE, THEREFORE, THAT YOU WILL TAKE THE OPPORTUNITY TO PARTICIPATE IN THE GOVERNMENT-INDUSTRY PANEL DISCUSSION WHICH HAS BEEN PLANNED FOR TOMORROW. I ALSO HOPE THAT YOU WILL CONTINUE TO BE OPEN AND FORTHRIGHT IN EXPRESSING YOUR VIEWS. OUR GOVERNMENT SEEKS A STRONG AND COMPETITIVE INFORMATICS INDUSTRY IN CANADA. YOU MUST HELP US TO MAKE THE RIGHT DECISIONS.

FEDERAL AND PROVINCIAL GOVERNMENTS MUST NOW WORK WITH INDUSTRY TO CREATE AN ENVIRONMENT THAT ALLOWS THE PRIVATE SECTOR TO FULFILL ITS POTENTIAL AS A WORLD-CLASS SUPPLIER OF INFORMATION TECHNOLOGY TO BOTH CANADIAN AND FOREIGN MARKETS. THE VIDEOTEX CANADA MEETING IS AN IMPORTANT STEP IN THIS PROCESS.

THANK YOU, I NOW INVITE YOU ALL TO JOIN ME FOR A RECEPTION IN THE NEXT ROOM.

## APPENDIX C

### HISTORICAL OUTLINE OF VIDEOTEX DEVELOPMENT IN CANADA

1978

- MAY CCITT Decision to study videotex as an international service
- AUGUST Canadian videotex system announced.
- SEPTEMBER Bell Canada announces Vista-1 trial based on British Prestel technology, but will consider Canadian technology for next phase.
- NOVEMBER Cabinet approves \$9 million Videotex Program.
- DECEMBER Canadian videotex system officially named TELIDON.

1979

- FEBRUARY TVOntario announces teletext and videotex trial of Telidon in education.
- MARCH First transatlantic transmission of Telidon.
- MAY Toronto Gamma Group meeting recommends the creation of a joint industry/government consultative committee (CVCC).
- Alberta Government Telephone announces Vidon trial.
- JULY Manitoba Telephone System (MTS) announces project IDA trial.
- AUGUST Bell Vista announced using Telidon. First transmission of Telidon via satellite to Australia.
- OCTOBER Infomart (Torstar/Southam) announces involvement with Telidon.
- NOVEMBER First meeting of the CVCC.
- Formation of VISPAC (Videotex Information Service Providers Association of Canada).

1980

- JANUARY First teletext (broadcast videotex) transmission via TVOntario television network.
- JUNE CCITT accepts Telidon as international videotex standard.
- NOVEMBER Grassroots Project announced by MTS and Infomart.

1981

- JANUARY Teleglobe Canada announces the Novatex Service.
- MAY Grassroots service begins.
- Videotex 81 held in Toronto.
- Announcement by AT&T of Presentation Level Protocol (PLP) based on Telidon.
- JUNE Start of the Alternate Media Centre/WETA teletext field trial in Washington D.C.
- JULY Provisional Broadcast Standard (BS-14) published by DOC as the teletext standard in Canada.
- AUGUST DOC announces the IISP program.
- The Ontario government commits support to TELEGUIDE.
- NOVEMBER CBC announces Project IRIS teletext service.

1982

- APRIL DOC announces the Public Initiatives Program (PIP)
- MAY Infomart/Times Mirror announce joint venture to launch videotex services in the U.S.
- JULY Start of Bell iNET trial (intelligent phone network).

1983

- FEBRUARY DOC announces the Telidon Exploitation Program
- AUGUST DOC announces the Content Development Program
- OCTOBER Project Vista closed down.
- DECEMBER Joint CSA/ANSI NAPLPS Standard published.

1985

- MARCH DOC Telidon program ends.
- Norpak announces that its videotex and teletext products incorporating the Norpak videotex chips are available.
- Canadian videotex industry meeting held in Toronto.



APPENDIX D  
GLOSSARY OF TELIDON TERMS

ANSI

The American National Standards Institute.

CCIR

The International Telecommunications Union (ITU) Consultative Committee For International Radio.

CRT

Cathode Ray Tube is a computer monitor.

CSA

The Canadian Standards Association is responsible for developing and publishing technical standards.

CCITT

The ITU Consultative Committee for International Telephone and Telecommunications.

CVCC

The Canadian Videotex Consultative Committee was set up in 1979 to guide the government support for the developing Telidon industry. Membership comprised industry, government and private citizens. Several subcommittees were established to deal with specific issues. Some of these subcommittees are still active although the main committee has not met for two years.

GATEWAY

A gateway uses a videotex service computer as the means to retrieve data stored in other computers, in other locations. The user may or may not be aware that the information is coming from another database or locale.

INFORMATION PROVIDER

An information provider supplies information (content) to a service provider. Information need not be in videotex format prior to delivery by the service provider.

MOBILE SATELLITE (MSAT)

MSAT is a satellite which will provide voice and data communications to mobile units. The scheduled launch of the Canadian MSAT is 1988.

**NABTS:**

North American Basic Teletext Specification is the standard for teletext services which is jointly published by the Electronic Industries Association(EIA) and the Canadian Videotex Consultative Committee( CVCC). It specifies as its presentation level the NAPLPS coding schemas documented in CSA document T500.

**NAPLPS:**

North American Presentation Level Protocol Syntax is the standard for videotex services which is published jointly by the American National Standards Institute (ANSI) and the Canadian Standards Association. Telidon and NAPLPS are identical. NAPLPS is also sometimes referred to by T500 which is the document number given to this standard by the Canadian Standards Association.

**PAGE CREATION**

is the packaging of information into the videotex format for distribution by a service provider. An image on the screen of a videotex terminal is usually considered to be a page. A page creator is a person who creates pages in the videotex format.

**SERVICE PROVIDER:**

is the operator of a videotex or teletext database. Information is distributed free of charge or for a fee depending on the situation.

**SERVICE REFERENCE MODEL (SRM)**

is an implementation level of the NAPLPS standard which the industry has generally agreed should be used for public videotex services. Examples of requirements of the SRM are that the display parameters shall be on the order of 256 pixels horizontal by 200 pixels vertical and the colour functions shall allow presentation of 16 simultaneous colours from a choice of 512.

**TELETEXT:**

is a one way broadcast of limited amounts of information to users. TV broadcasters and cable companies, who utilize unused portions of a broadcast channel for the transmission of teletext data, are the normal sources for this service. Reception is usually with a teletext decoder connected to a TV set.

**TELIDON:**

is the graphics communication protocol which was developed by the Department of Communications. It formed the basis of the North American and international standards for videotex and is identical to NAPLPS

**VIDEOTEK:**

is a two way interactive service which provides access to databanks of information. Terminals used for access to the databanks can be of various kinds ranging from dedicated videotex terminals connected to display monitors or TV sets to micro-computers which also serve other purposes.

APPENDIX E LIST OF PARTICIPANTS

ATTENDEES

VIDEOTEK CANADA: UNDERSTANDING THE CANADIAN MARKETPLACE

TORONTO - MARCH 4-5, 1985

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PARTICIPANTS

VIDÉOTEK CANADA: TOUR D'HORIZON DU MARCHÉ CANADIEN

TORONTO - 4-5 mars 1985

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M2J 4J8

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7 WALMER ROAD, SUITE 1507  
TORONTO  
ONT.  
M5R 2W8  
416 923 1559

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NORPAK CORP.  
10 HEARST WAY  
KANATA  
ONT.  
K2L 2P4  
613 592 4164

CASEY BRIAN  
EXTERNAL AFFAIRS CANADA  
125 SUSSEX DR., TTT C-5, LBPE  
OTTAWA  
ONT.  
K1A 0G2  
613 996 1918

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THE T. EATON COMPANY LTD.  
1 DUNDAS W., 8TH FLOOR TOWER  
TORONTO  
ONT.  
M5B 1C8  
416 591 2027

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SHARON PROFESSIONAL SERVICES  
215 COOPER ST.  
OTTAWA  
ONT.  
K2P 0G2  
613 238 7395

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ST. CATHERINE'S  
ONT.

CHALOM, NICOLE  
LE GROUPE VIDEOWAY INC.  
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KAMLOOPS  
B. C.  
V2C 5N3

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B. C.  
V2C 5N3

CHI DAO KIM  
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735 CHRISTOPHE COLOMB  
MONTREAL  
QUE.  
H2J 4C2  
514 522 3540

CIONI, MARIA  
MARIA CIONI & ASSOCIATES  
2 BRAEMORE  
TORONTO  
ONT  
M6G 2C8

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TECHNOLOGY BUILDING, ROOM A216  
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MD.  
20899  
301 921 3723

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PICKERING  
ONT.  
L1V 1L3  
416-286-2066

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ONT. CABLE & BROADCAST OFFICE  
1201 WILSON AVE.  
DOWNSVIEW  
ONT.  
M3M 1J8  
416 248 3736

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T.C.V., I.C.C.  
280 COLLEGE ST.  
TORONTO  
ONT.  
M5T 1R9  
921 8774

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SASKATCHEWAN JUSTICE  
218-3085 ALBERT ST.  
REGINA  
SASK.  
S4S 0B1  
306 565 2049

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TWR C, PLACE DE VILLE  
OTTAWA  
ONT.  
K1A 0N8  
613 996 7509

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215 PARK AVENUE SOUTH  
NEW YORK  
N.Y.  
10003  
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CORNELL RICK  
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ONT  
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DOC  
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ONT

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I C C  
293 BRIARHILL AVE.  
TORONTO  
ONT.  
M4R 1J3  
488 9519

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POLLEY INDUSTRIES  
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FRANCE  
NEW  
ZEALAND

CROZIER BASIL  
DOC  
300 SLATER ST  
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ONT.

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SASK.  
S4P 2V7  
306 565 5855

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QUEBEC  
QUEBEC  
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418-643-1887

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SUDBURY  
ONT.  
P3E 2P3

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ONT.  
N2J 4B8  
884 2390

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QUE.  
H2P 2H4  
514 384 2655

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ONT.  
M5C 2R9  
416 862 8108

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ONT.  
M4Y 1T4  
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217 MAKI AVE.  
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ONT.  
P3E 2P3

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251 LAURIER AVE. W.  
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ONT.  
K1P 5J6

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PICTURE DATA INC.  
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ONT.  
M5C 1J3  
416 462 8942

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I OTEL 2000 INC  
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P.Q.  
H2X 2H5  
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ONT.  
K1A 0S5  
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ONT.  
NGA 5B7  
679 2144

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HULL  
QUE.  
K1A 0G4  
994 1943

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ONT.  
L3R 3W9  
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ONT.  
N2L 3G1  
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L6H 2L1

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ONT.  
M5C 2R0  
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SCARBOROUGH  
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M1P 4X5  
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ONT.  
M5B 2H1  
416 979 3133

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4 HUNTER STREET  
DUNDAS  
ONT.  
L9H 1E6  
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ONT.  
L0G 1K0  
416 833 6200

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QUE.  
H3C 3R4  
514 861 9901

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MISSISSAUGA  
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L4X 1K1  
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H3A 2R7  
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M9C 4Z5  
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ONT.  
L1H 7L7  
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ONT.  
M5V 2G5  
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ONT.  
M2J 4Z2

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K8N 5B9

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L6H 2L1  
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ONT.  
MSV 1X2  
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C T V NEWSROOM, STATION O  
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ONT.  
M4A 2M9  
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N6A 4L6  
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HAIG ENTERPRISES  
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TORONTO  
ONT.  
M4Y 1C9  
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K1A 0H4  
997 0011

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H B C TRAVEL  
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ONT.  
M3C 2E9  
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ONT.  
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K2E 7S6  
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ONT.  
P3E 2P3

K. JOHN  
KYMA CORP.  
280 ALBERT ST., SUITE 1002  
OTTAWA  
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ONT.  
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QUE.  
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LESLIE NATHAN  
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K1P 5G8  
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HALIFAX  
N. S.  
B3J 2R7

MACCALLUM, DOUG  
NETWORK VIDEOTEX  
235 YORKLAND BOULEVARD, # 300  
WILLOWDALE  
ONT.  
416-492-9803

MADDEN JOHN  
NEW MEDIA TECHNOLOGIES  
4664 LOUGHEED ST., SUITE 233  
BURNABY  
B. C.  
V5C 5T5

.GNER JOHN  
VIDEOPRESS  
148 KING RD E  
KING CITY  
ONT  
L06 1K0  
416 833 6202

MAMA DANNY  
IBM CANADA LTD.  
1150 EGLINTON AVE. E.,  
DON MILLS  
ONT.  
M3C 1H7  
443 6000

MARCHAND LOUISE  
UNIVERSITE DE MONTREAL  
CP 6203 SUCC A  
MONTREAL  
QUEBEC  
H3C 3T3  
514 343 7360

MARCHAND MANON  
LE GROUP VIDEOTRON  
2000 RUE BERRI  
MONTREAL  
QUEBEC  
H2L 4V7  
514 281 1232

MARKLE JOHN  
BANQUE FEDERALE DE DEV.  
800 SQUARE VICTORIA, ST. 900  
MONTREAL  
QUE.  
514 283 6894

MARLEAU DANIELLE  
GEMSYSTEL INC.  
2055 PEEL, SUITE 325  
MONTREAL  
QUE.  
H3A 1V4  
514 845 3205

MARSH PETER  
WEXFORD COLLEGIATE  
76 CARONDALE CRESC.  
SCARBOROUGH  
ONT.

MARSH ROY  
DOC  
300 SLATER ST.  
OTTAWA  
ONT.

MASSE MARCEL  
MINISTER OF COMMUNICATIONS  
DEPT OF COMMUNICATIONS  
OTTAWA  
ONT.

MATRI ANAT  
I.C.C.  
819 BROADVIEW AVE., APT. #5  
TORONTO  
ONT.  
M4K 2P9  
416 466 2199

MATTHEWS PETER E.  
MC GRAW-HILL RYERSON LIMITED  
330 PROGRESS AVE.  
SCARBOROUGH  
ONT.  
416 293 1911

MC AFEE RACHAEL  
PIXEL PRODUCTIONS  
82 PETER ST., SUITE 206  
TORONTO  
ONT.  
M5V 2G5  
416 591 9046

MC CABE GEORGE  
CABLESHARE INC.  
20 ENTERPRISE RD., BOX 5880  
LONDON  
ONT.  
N6A 4L6  
519 686 2900

MC CALL DIXIE  
CEDAR GRANGE ENTERPRISES LTD.  
CEDAR GRANGE, R.R. #6  
SMITHS FALLS  
ONT.  
K7A 4S7  
613 257 4581

MC CALL FRED  
CEDAR GRANGE ENTERPRISES LTD.  
CEDAR GRANGE, R.R. # 6  
SMITHS FALLS  
ONT.  
K7A 4S7  
613 257 4581

MC CANN TOM  
SENECA COLLEGE  
17 FAIRMEADOW AVE.  
WILLOWDALE  
ONT.  
M2P 1W6  
416 491 5050

MC CONNELL ROBERT, PRES.  
INFOMART  
515 CONSUMERS ROAD, SUITE 100  
TORONTO  
ONT.  
M2J 4Z2  
416 495 0022

MC DAID JIM  
NATIONAL DEFENCE  
101 COL. BY DRIVE  
OTTAWA  
ONT.  
K1E 0K2  
613 995 1868

MC GILL ROBERT  
SONY OF CANADA LTD.  
411 GORDON BAKER RD.  
WILLOWDALE  
ONT.  
M2H 2S6  
499 1414

MC GREGOR TYRIE  
FEAT MARWICK AND PARTNERS  
112 KENT ST., PL. DE VILLE T.B  
OTTAWA  
ONT.  
K1P 5P2  
613 237 6402

MC KERCHER R. MURRAY  
BELL CANADA  
483 BAY ST., GROUND FLOOR  
TORONTO  
ONT.  
M5G 2E1  
416 581 3131

MC LAUCHIAN JOHN  
MARKETFAX LTD.  
55 YONGE ST., SUITE 509  
TORONTO  
ONT.  
M5E 1J4  
416 365 1728

MC LAUGHLIN COLLEEN  
CDN. CO-ORD. COUNCIL ON DEAF.  
294 ALBERT ST., SUITE 201  
OTTAWA  
ONT.  
K1P 6E6  
613 232 2611

MC LEAN WAYNE  
CDN. CABLE TELEVISION ASSOC.  
85 ALBERT ST., SUITE 400  
OTTAWA  
ONT.  
K1P 6A4  
613 232 2631



MCBRIDE, RON  
E CREDIT VALLEY HOSPITAL  
2200 EGLINTON AVENUE WEST  
MISSISSAUGA  
ONT.  
L5M 2N1  
416-848-5000

MCDUGALL, SCOTT  
PICTURE DATA INC  
10 ADELAIDE STREET EAST # 14  
TORONTO  
ONT.  
416-862-8942

MC GEE, SCOTT  
CABLESHARE INC.  
20 ENTERPRISE RD., BOX 5880  
LONDON  
ONT.  
N6A 4L6  
519 686 2900

MCLEAN TED  
CABLESHARE INC.  
20 ENTERPRISE RD., BOX 5880  
LONDON  
ONT.  
N6A 4L6  
519 686 2900

MCNAUGHTON SHIRLEY  
BLISSYMBOLICS COMM. INST.  
350 RUMSEY RD.  
TORONTO  
ONT.  
M4G 1R8  
416 424 3806

MEDER WILLIAM  
COMP-U-CARD CANADA INC.  
2000 MANSFIELD ST., SUITE 600  
MONTREAL  
QUE.  
H3A 2Z3  
514 281 1996

MEDWETH, W.D.  
I B M CANADA LTD.  
105 MOATFIELD DRIVE  
DON MILLS  
ONT.  
M3B 3L9  
416 443 5562

MEHRA KEN L.  
CBS TECHNOLOGY CENTER  
227 HIGH RIDGE ROAD  
STAMFORD  
CT.  
06905  
203 327 2000

MELOCHE M.F.  
DOC  
300 SLATER ST.  
OTTAWA  
ONT.  
613 996 6888

MENARD ROBERT  
DOUSERU TELECOM INC.  
2055 PEEL ST., SUITE 325  
MONTREAL  
QUE.  
H3A 1V4

MENARD SUSAN  
KYMA CORPORATION INC.  
280 ALBERT ST., 10TH FLOOR  
OTTAWA  
ONT.  
K1P 5G8  
613 230 7661

MEUNIER CLAIRE  
UNIVERSITE DE MONTREAL  
C.P. 6128 SUCC. A  
MONTREAL  
QUE.  
H3C 3J7  
514 270 2255

MILLOY, BRIAN  
I. J. MART  
164 MERTON STREET  
TORONTO  
ONT.  
416-489-6640

MINUK MICHAEL  
METRO WORLD WEATHER WATCH  
7050 WOODBINE AVE.  
MARKHAM  
ONT.  
L3R 4G8  
477 0870

MISANCHUK EARL  
UNIVERSITY OF SASKATCHEWAN  
SASKATOON  
SASK.  
S7N 0W0  
306 966 5555

MORIN ROBERT  
MANITOBA TELEPHONE SYSTEM  
BOX 6666, 489 EMPRESS ST.  
WINNIPEG  
MAN.  
R3C 3V6  
204 942 7563

MUNSHAW, BRIAN  
SANDFORD COMPUTER SYSTEMS INC  
73 WALKER AVENUE  
TORONTO  
ONT.  
M4V 1G3  
416-962-3828

MURDOCH HEATHER  
AMBER GRAPHICS  
P.O. BOX 5486 STN. F  
OTTAWA  
ONT.  
613 729 4351

MURPHY DONNA  
CANADIAN RECORD CATALOGUE  
144 FRONT W., ST. 330  
TORONTO  
ONT.  
M5J 2L7  
416 593 4545

MURRAY JIM  
SAGE MANAGEMENT SYSTEMS,  
156 FRONT STREET W.  
TORONTO  
ONT.  
M5J 2L6  
416 596 1710

MUSSIO, JUDY  
DEPARTMENT OF COMMUNICATIONS  
TORONTO  
ONT.

MYERS DENNIS H.  
SONY OF CANADA LTD.  
411 GORDON BAKER LTD.  
WILLOWDALE  
ONT.  
M2H 2S6  
499 1414

NAFT NEIL  
CONTEX INFORMATION SERVICES  
63 CASTLEWOOD ROAD  
TORONTO  
ONT.  
M5N 2L1  
416 486 8328

NICHOLIS PATRICK  
P D I  
10 ADELAIDE ST E SUITE 14  
TORONTO  
ONT  
M5C 1J3  
416 862 8942

NORTHAM AL  
DOC  
WINNIPEG  
MAN.

O'BRIEN, DOUG  
IDON CORP.  
BOX 3728, STATION C  
OTTAWA  
ONT.  
K1Y 4J8

O'LEARY DAN  
NEW MEDIA TECHNOLOGIES  
4664 LOUGHEED ST., SUITE 233  
BURNABY  
B. C.  
V5C 5T5

ORD, JOHN  
TV ONTARIO  
HAMILTON  
ONT.  
416-488-2656

ORME PAUL  
VIEWTRON CORP.  
1111 LINCOLN ROAD, 7TH FLOOR  
MIAMI BEACH  
FLA.  
33199

ORR ALAN  
CDN CEN FOR OCC.HEALTH.SAFETY  
250 MAIN ST E  
HAMILTON  
ONT  
L8N 1H7  
416 523 2981

ORR, ERNEST P.  
IBM  
10805 ROCHESTER DRIVE  
DAMASCUS  
MD.  
20872  
301-253-4901

OVERDUIN HENRY, ASST.PROF  
UNIVERSITY OF WESTERN ONTARIO  
LONDON  
ONT.  
N6A 5B7  
519 679 2133

OWENS ANDREW  
IEPCO -INT. ELECT. PUBLISHING  
98 GRANBY ST.  
TORONTO  
ONT.  
M5B 1J1  
416 534 2141

PALMER PHILIP  
DEPARTMENT OF COMMUNICATIONS  
300 SLATER ST., ROOM 1758  
OTTAWA  
ONT.  
K1A 0C8  
613 995 0424

PAOLONE RICO  
BROCK UNIVERSITY  
ST.CATHERINE'S  
ONT.

PAQUET BRUNO  
RESEAU TELIDON SANTE  
C.P. 6207, SUCC. A  
MONTREAL  
QUE.  
H3C 3T7  
514 343 6457

PARKHILL DOUGLAS  
D  
20, SANDRIDGE ROAD  
ROCKCLIFFE  
ONT.  
K1L 5A2

PATRY PIERRE  
TELE-UNIVERSITE  
4835 AVE CHRISTOPHE COLOMB  
MONTREAL  
QUE.  
H2J 4C2  
514 522 3540

PAUL DANIELLE  
INST. OF CREATIVE COMM.  
720 - 25 ADELAIDE ST. E.  
TORONTO  
ONT.  
M5C 1Y2  
416 864 2128

PAVLUC VALYA  
CBLT MORNING  
500 CHURCH ST.  
TORONTO  
ONT.  
416 656 4107

PETRO, PAUL  
TORONTO COMMUNITY VIDEOTEX  
TORONTO  
ONT.  
416-977-7076

PHIPPARD GARY  
PHIPPARD & ASSOCIATES  
94 KNOLLSBROOK DRIVE  
NEFEAN  
ONT.  
K2J 1L8  
613 825 1893

PICOT JOCELYNE  
ASSOC. OF ATLANTIC COLL. & UN.  
6080 YONGE ST., SUITE 702  
HALIFAX  
N. S.  
B3K 5L2

PINEAULT CLAUDE  
FORMIC  
8571 ST-DENIS ST.  
MONTREAL  
QUE.  
J2P 2H4

PONTBRIAND PIERRE  
CDN. RADIO-TELE. & TELEC. COMM  
OTTAWA  
ONT.  
K1A 0N2  
819 997 0313

POORE, ROBERT M.  
NEW MEDIA TECHNOLOGIES  
233-4664 LOUGHEED HIGHWAY  
BURNABY  
B.C.  
604-291-7111

POSLUNS JOEL  
XEROX CANADA INC.  
703 DON MILLS ROAD  
DON MILLS  
ONT.  
M3C 1S2  
416 429 6750

POWER JAMES  
RCA  
BOX 432  
PRINCETON  
N. J.  
08540  
609 734 2726

FRANCE JEAN-GUY  
MINISTRE QUEBECOIS DES COMM.  
580 GRANDE ALLEE EST, BUR. 340  
QUEBEC  
QUE.  
G1R 2K2  
418 643 1887

PROSH, LINDA  
TV ONTARIO  
TORONTO  
ONT.  
416-484-2600

QUARLES PAT  
ALTERNATE MEDIA CENTER/NYU  
725 BROADWAY, 4TH FLOOR  
NEW YORK  
N Y.  
10003  
212 598 2852

RATCLIFFE TED  
ADEUM ELECTRONICS  
880 LADY ELLEN PLACE  
OTTAWA  
ONT.  
K1Z 5L9

REIMERS REV. AL  
SEARCHERS CHRISTIAN INFO. INC.  
BOX 759, STATION F  
TORONTO  
ONT.  
M4Y 2N6  
416 924 0438

RHEAULT CLAUDE  
MAHEU NOISEUX & COMPAGNIE  
1195 AVE. LAVIGERIE  
SAINTE-FOY  
QUE.  
G1V 4N3  
418 658 5564

RICHARDS LESLIE  
TELIDON PROD., UNIV. OF GUELPH  
UNIVERSITY OF GUELPH  
GUELPH  
ONT.  
N1G 2W1  
519 824 4120

RICHARDSON PETER  
TAYSON INFORMATION  
275 COMSTOCK ROAD  
SCARBOROUGH  
ONT.  
M1L 2H2  
416 288 0550

ROBERGE LOUISE  
BELL CANADA  
TORONTO  
ONT  
416 581 5605

ROBERTS HAZEL J.  
ASSOC. OF UNIV. & COLLEGES  
151 SLATER ST.  
OTTAWA  
ONT.  
K1V 5N1  
613 563 1236

ROCK KATHLEEN  
CSP INTERNAIONAL  
24 EAST 21ST ST.  
NEW YORK  
N. Y.  
10010  
212 505 2200

ROSA JOSEPH  
FBN SOFTWARE INC.  
331 SOMERSET ST. W.  
OTTAWA  
ONT.  
K2P 0J8  
613 234 0056

ROPER JAMES  
T . ONTARIO  
2180 YONGE ST.  
TORONTO  
ONT.  
416 484 2600

ROSSIGNOL LARRY  
MELOCHE COMMUNICATIONS GROUP  
70 YORKVILLE  
TORONTO  
ONT.  
M5R 1B9  
416 922 1361

ROSTUM HUSSEIN R.  
TEEGA RESEARCH CONSULTANTS INC  
85 SPARKS ST., SUITE 214  
OTTAWA  
ONT.  
K1P 5A7  
613 232 0531

ROWLAND ROBIN  
CBC  
TORONTO  
ONT.  
925 3311

RUDEEN T.  
D O C  
EDMONTON  
ALBT.

RUDY WORTEL  
TRIGON  
1 YONGE STREET, SUITE 2205  
TORONTO  
ONT.

RUSSELL JAN  
METRO TOR. CONV. & VISITORS  
220 YONGE ST., SUITE 110  
TORONTO  
ONT.  
M5B 2H1  
416 979 3133

RUSSELL NICK  
UNIVERSITY OF REGINA  
EDUCATION BUILDING, ROOM 1.24  
REGINA  
SASK.  
S4S 0A2  
584 4090

RUSSELL, DAN  
MINISTRY OF EDUCATION  
900 BAY STREET, QUEEN PARK  
TORONTO  
ONT.  
416-965-0771

RUSSELL-HILL D.Q.  
C I L INC.  
90 SHEPPARD AVE.  
NORTH YORK  
ONT.  
M2N 6H2  
416 229 7380

SABOURIN DWIGHT  
ADEUM ELECTRONICS  
880 LADY ELLEN PLACE  
OTTAWA  
ONT.  
K1Z 5L9

SAJED FRANCIS  
TOUCHE ROSS & PARTNERS  
100 KING ST.W. P.O.BOX 12  
TORONTO  
ONT.  
M5X 1B3  
416 364 4242

SAPATA SHOJI  
M SUI & CO. (CANADA) LTD.  
BOX 53, ROYAL BANK PLAZA, S.T.  
TORONTO  
ONT.  
MSJ 2J2  
416 865 0330

SANDFORD ELODIE C., PRES.  
SANDFORD COMPUTER SYSTEMS INC.  
73 WALKER AVE.  
TORONTO  
ONT.  
M4V 1G3  
416 962 3828

SAWCHUK WILLIAM  
DOC  
BOX 11490, STATION H  
OTTAWA  
ONT.  
KZH 8S2  
613 998 2332

SAYERS, JIM  
SHERIDAN COLLEGE  
1430 TRAFALGAR ROAD  
OAKVILLE  
ONT.  
L6H 2L1  
845 9430

SCHARRY LEOPOLD  
SONOVISION INC./TELEMATEX DATA  
1118 OUEST RUE STE-CATHERINE  
MONTREAL  
QUE.  
H3B 1H5  
514 861 3044

SCHOFIELD REX  
DOMINION DIRECTORY CO. LTD.  
4400 DOMINION ST.  
BURNABY  
B. C.  
V5G 4G4

SCOTT, ROBERT B.  
RYERSON POLYTECHNOLOGY INST.  
350 VICTORIA STREET  
TORONTO  
ONT.  
416-979-5167

SEITZ HANS  
SASKATCHEWAN COMPUTER UTILITY  
2350 ALBERT ST., 5TH FLOOR  
REGINA  
SASK.  
306 561 2797

SEPHTON DOUG  
STUDIO ESPRIT  
1178 PLACE PHILLIPS, SUITE 204  
MONTREAL  
QUE.  
H3B 3C8  
514 861 2151

SHAMANSKI DAVID A.  
THE CITIZEN  
1101 BAXTER ROAD  
OTTAWA  
ONT.  
613 596 3660

SHARPE JANE  
CONTINENTAL BANK OF CANADA  
130 ADELAIDE ST. W.  
TORONTO  
ONT.  
MSH 3R2  
416 868 8311

SHENG, GRANT  
MCMASTER UNIVERSITY  
HAMILTON  
ONT.  
416-522-2802

SHIMOMAKI H.  
MITSUI & CO. (CANADA) LTD.  
BOX 53, ROYAL BANK PLAZA, S.T.  
TORONTO  
ONT.  
M5J 2J2  
416 865 0330

SHORKEY JIM  
RODGERS CABLE TV  
720 - 25 ADELAIDE ST.E.  
TORONTO  
ONT.  
M5C 1Y2  
416 864 2128

SIMPSON RICHARD  
U M G CABLE TELECOMMUNICATIONS  
205 KING ST.  
BROCKVILLE  
ONT.  
K6V 3R7  
613 342 2640

SMITH JR. ROBERT L.  
VIDEOTEX INDUSTRY ASSOCIATION  
1901 N. FORT MYER DRIVE, ST.200  
ROSSLYN  
VA.  
22209  
703 522 0883

SOROKOWSKI GEORGE E.  
MANITOBA TELEPHONE SYSTEM  
BOX 6666, 489 EMPRESS ST.  
WINNIPEG  
MAN.  
R3C 3V6  
204 942 7563

SOUTHORN GREG  
SONY OF CANADA LTD.  
411 GORDON BAKER ROAD  
WILLOWDALE  
ONT.  
M2H 2S6  
499 1414

SPRUMONT MAURICE  
INFORMART  
164 MERTON ST.  
TORONTO  
ONT.  
M4S 3A8

ST-AMOUR, EVA  
DOC  
300 SLATER ST.  
OTTAWA  
ONT.

STARTEK DAN  
SONY OF CANADA LTD.  
411 GORDON BAKER ROAD  
WILLOWDALE  
ONT.  
M2H 2S6  
499 1414

STEWART DOUGLAS  
DOC - DPE  
1610 JOURNAL TOWERS S.  
OTTAWA  
ONT.  
613 993 5800

STOODY WILLIAM  
KITCHENER-WATERLOO RECORD LTD.  
225 FAIRWAY ROAD  
KITCHENER  
ONT.  
N2G 4E5  
519 894 2231

STOREY JOHN  
DOC  
3701 CARLING AVE.  
OTTAWA  
ONT.  
K2H 8S2  
613 998 2070



STYLES JOHN  
/ A AUTOMATION COMMITTEE  
75 THE DONWAY WEST, STE. 909  
DON MILLS  
ONT.  
M3C 2E9  
416 441 2080

SYMONS FRANK  
DOC  
300 SLATER ST.  
OTTAWA  
ONT.

TABACNIK RUTH  
WORDS ASSOCIATED  
R.R. #3  
WAKEFIELD  
QUE.  
JOX 360  
819 827 1825

TAIT CATHERINE  
DOC  
TORONTO  
ONT.

TAPSCOTT DON  
TRIGON SYSTEMS  
1 YONGE ST. SUITE 2205  
TORONTO  
ONT.  
M5E 1E5

TAYLOR CRAIG  
DOC  
300 SLATER ST.  
OTTAWA  
ONT.  
613 996 9957

TAYLOR GEORGE  
TELIDON PROD., UNIV. OF GUELPH  
UNIVERSITY OF GUELPH  
GUELPH  
ONT.  
N1G 2W1  
519 824 4120

TELETHOUGHT CORP.  
23 WESTMORE DRIVE  
REXDALE  
ONT.  
M9V 3Y7  
416 747 7277

TEMKIN MITCH  
MANIFEST COMMUNICATIONS  
512 QUEEN ST. W.  
TORONTO  
ONT.  
MSW 1XB  
416 863 1575

TEMPLE PAUL J.  
ROGERS CALBLESYSTEMS INC.  
BOX 249, ST. 2602, COMM. UN. TOW  
TORONTO  
ONT.  
M5K 1J5  
416 864 2123

TETREAUULT TERRY  
DEPARTMENT OF COMMUNICATIONS  
VANCOUVER  
B.C.

THELEN DON  
A T & T  
5 WOOD HOLLOW ROAD  
PARSIPPANY  
N. J.  
07981  
201 581 4823

THOMAS HILLARY  
ARAGON  
2 SUMMER ST.  
STANFORD  
CT.  
06905  
201 581 7328

THOMPSON ANNA  
77 HOWARD ST., SUITE 1014  
TORONTO  
ONT.  
M4X 1J9  
960 0043

THOMPSON BRIAN  
CONSULTANT  
508 SOUDAN AVE.  
TORONTO  
ONT.  
M4S 1X3

THORSTEINSON JANET  
D S S - POLICY DEVELOPMENT  
11 LAURIER AVE.  
HULL  
QUE.  
997 7484

TOKUDA M.  
MITSUI & CO. (CANADA) LTD.  
BOX 53, ROYAL BANK PLAZA, S.T.  
TORONTO  
ONT.  
M5J 2J2  
416 865 0330

TOUPIN, FRANCOIS  
FORMIC VIDEOTEX SYSTEMS  
8571 ST. DENIS STREET  
MONTREAL  
P.Q.  
H2P 2H4  
514-384-2655

TREBBLE, GLEN  
RMS MICRO SYSTEMS LTD.  
35 GAMBLE DRIVE  
RICHMOND  
ONT.  
K0A 2F0  
613-838-2723

TREMELLEN LAWSON J.  
ACTA AUTOMATION COMMITTEE  
AIR CANADA, PL. AIR CANADA  
MONTREAL  
QUE.  
H2Z 1X5  
514 879 7882

UMBRIACO MICHEL  
TELE-UNIVERSITE  
214 AVE. ST-SACREMENT  
SAINTE-FOY  
QUEBEC  
G1N 4M6  
418 657 2262

VAIVE ROBERT  
EPARTMENT OF COMMUNICATIONS  
300 SLATER ST.  
OTTAWA  
ONT.

VERBURG GEB  
HUGH MAC MILLAN  
TORONTO  
ONT.  
416 425 6220

WAESE, JERRY  
LIMICON INC.  
144 HAMPTON AVE.  
TORONTO  
ONT.  
416 481 7859

WARBURTON ROBERT E.  
DOC  
BOX 11490, STATION H  
OTTAWA  
ONT.  
K2H 8S2  
613 998 2270

WEBB JANET  
T.V. ONTARIO  
BOX 200, STATION Q  
TORONTO  
ONT.  
M4T 2T1

WEDGE DON  
CANADIAN RECORD CATALOGUE  
144 FRONT W., ST. 330  
TORONTO  
ONT.  
M5J 2L7  
416 593 4545

WERNER JOANNE  
DOC  
300 SLATER ST.  
OTTAWA  
ONT.

WEYMOUTH A. JOHN  
I B M CANADA LTD.  
105 MOATFIELD DR.  
DON MILLS  
ONT.  
M3B 3L9  
416 443 5040

WHALER, THOMAS  
COMMUNICATIONS CANADA  
300 SLATER STREET  
OTTAWA  
ONT.  
K1A 0C8  
996-8871

WHIDDON ROY  
PEAT MARWICK AND PARTNERS  
112 KENT ST., PL. DE VILLE, T.B.  
OTTAWA  
ONT.  
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THE EVOLUTION OF TELIDON

BACKGROUND PAPER

FOR REMARKS

BY

DOUGLAS F. PARKHILL

AT

VIDEOTEX CANADA MEETING

METRO TORONTO CONVENTION CENTRE

TORONTO

MARCH 4, 1985

## THE EVOLUTION OF TELIDON

As the first speaker in this opening session I have been given the task of refreshing our memory banks by looking backward and providing a general overview that describes the principal events leading up to the start of the Telidon program and identifies some of the most important milestones along the exciting road that many of us here today have travelled since August of 1978. The paper draws heavily upon the material in an address that I gave to the Rotary Club here in Toronto in 1981 called "The Telidon Story" and if any of you are interested in seeing how wrong some of my predictions were at that time I believe that copies may still be available from the Department of Communications. In this short talk however I will refrain from making prognostications and instead concentrate upon putting Telidon in its proper historical context with particular emphasis upon some of the most significant events that occurred in Canada and abroad prior to August 1978.

I say August 1978, because that was when, on Tuesday the 15th to be exact, that a press conference was held in Ottawa featuring what was called "a terminal independent technique for Videotex/Teletext Services" or as it was loosely termed, the "Canadian Videotex System".

This was obviously an important occasion since it marked the official start of what eventually became known as the Telidon Program, but it was preceded by many other noteworthy events. Of these probably the most important was the development of time sharing in the 1960's and the resultant surge of interest in the subject that we now call "Computer Communication". This development also made the term "computer utility" a popular buzz word, and this in turn was the beginning of a dream that many of us have shared ever since. This is the dream of universal access to the intelligence multiplying powers of computers and electronic data bases. More recently this dream has merged with and become the basis for that fundamental transformation in human capabilities to which the term "Information Revolution" is increasingly being applied—a revolution that promises to do for the realm of the mind what the industrial revolution of the nineteenth century did for the physical world.

This revolution of course is a world wide phenomenon and early leaders whose names immediately come to mind include:

- Yoneji Masuda in Japan who coined the term "Computopia" and whose report "The Plan for an Information Society: Japan's Goal Toward the Year 2000" was an international event in 1972.

- Marc Porat and Edwin Parker in the United States—the developers of the concept of the Information Economy.

- Simon Nora and Alain Minc in France, whose report "L'Informatisation de la Société" triggered the Tele Informatique program and eventually the largest and most ambitious Videotex program in the world.

- Stafford Beer, in Great Britain, and Paul Armer and Daniel Bell in the United States, -

Prophets of the Post Industrial Society and its implications, and of course,

-Sam Fedida and John Chambers, the two Englishmen whose invention of Videotex and Teletext respectively is the reason we are meeting here today.

In all of this Canada has also been one of the leaders. The group of studies collectively called the Telecommission and organized by DOC shortly after its formation in 1969, for example, remains to this day one of the most comprehensive and far reaching reviews of the present state and future prospects of telecommunications and computers ever undertaken anywhere. Of special interest to us however is the fact that a large group of studies within the Telecommission concerned the subject of computer communications.

The main report that emerged from these studies was called "Policy Considerations with Respect to Computer Utilities" and it painted a vivid picture of the opportunities and dangers that lay ahead as the evolution of computer communications technology created the information society. Thus it predicted fundamental changes in the nature and quality of human society comparable in importance to those which followed the invention of the modern printing press some 500 years ago. It also posed a number of basic policy questions and talked about some of the possible services which the authors believed would soon become possible. Interestingly, these services were categorized under a number of logical headings very similar to the tree structures and electronic yellow pages that we find today in Videotex.

Following the publication of the Telecommission reports there was a surge of activity in Canada that included:

-The Computer Communications Task Force under Hans Von Bayer that was supposed to recommend specific policies for the exploitation of computer communications technology for the benefit of Canada.

-The well known Green Paper on Computer Communications Policy issued by the federal Government in 1973; and in 1975, three White Papers which spelled out the fundamental policies which still apply in Canada with respect to Computer communications and the Payments System, and Participation by Federally Regulated Carriers and the Chartered banks in Public data Processing.

This was also a period of impressive activity in digital communications and saw the completion of the world's first transcontinental all digital data networks, the first by the Trans-Canada Telephone System, the second by CNCP Telecommunications. At the same time there was an explosive growth in the business use of remote access computer services. Also during this period, the Japanese began to gear up their "wired city" pilot programs, commencing with the now famous Tama New Town; while in Paris, the OECD Panel on Computer Communications Policy undertook a comprehensive series of studies that helped open a world perspective on the challenge of computer communication.

The OECD work culminated in February 1975 with a major international conference in

which people from the very highest levels in member governments participated. Intended to expose these governments to the opportunities and issues associated with the marriage of computers and communications, this conference was a great success. But it was also noteworthy for being the forum where the conclusions of Mark Porat's seminal study of the economics of information were first brought to the attention of many important government leaders and officials. This was accomplished in a classic report by Edwin Parker, then of Stanford University, and it had an electric impact that led to a greatly increased emphasis on "Informatique", as the French called it, in Germany and Japan as well as in France.

As we know however, it was in Britain that the the most significant events were taking place with the decision by the British to exploit their invention of Viewdata and Teletext in the form of a bold national program designed to provide the general public with convenient, user friendly access to computer based services for the first time in any country. This initiative was as you can imagine of great interest to those of us in Canada who had been hoping to see a similar program here. Indeed in June of 1976 just such a program, complete with a plan for field trials, had been urged by a DOC Research Sector team headed by George Jull and Toby Walker in a report called "Implications for Canada of Viewdata/Teletext Developments". Consequently some of us were beginning to feel somewhat frustrated when France decided to follow the British example. In fact I recall letting some of my personal frustration spill out in public in Toronto in August 1976 during a plenary session speech at the International Computer Communications Council Conference, ICC-76, where I deviated from the prepared text and deplored the failure of Canadian organizations to establish Viewdata services in our country. This was followed up about a year later when we brought Roy Bright, Manager International Promotion and Marketing for the British Post Office, to Canada to demonstrate the British technology. At the same time a number of us at the DOC began to publicize the idea of a Canadian program within the concept of what we called a "Canadian Electronic Highway Network"

Meanwhile, fortunately for Canada, back at the ranch, or more correctly, back at the Communications Research Centre of the DOC, a small group of researchers headed by Herb Bown and including people like Doug O'Brien, Bill Sawchuk and others who I believe are at this meeting had become interested in Viewdata. However they were not particularly impressed with what they regarded as the rather primitive "alpha mosaic" technology employed by the British and French and so began an examination of more sophisticated technologies that would eliminate many of the well known limitations of the alpha mosaic technique. Since their backgrounds were largely computer graphics oriented they had a natural preference for the alpha geometric approach and this of course was strongly reinforced by their knowledge of the power of "Picture Description Instructions" (PDI's) which had been invented by Doug O'Brien, first reported publicly in his 1975 Master's thesis at Carleton University, and successfully employed in the the "Common Visual Space" Conferencing System that the team had earlier developed for the military. The



result was that by the Spring of 1978 when the Department of Communications acquired a new Deputy Minister in the person of Bernard Ostry they had already built a Viewdata like model that incorporated PDIs and was based upon their military work.

All of this work however had been done on a shoe string budget and was largely unofficial. Consequently it was with some trepidation that we decided to make the Electronic Highway concept and Viewdata the center-pieces of my first briefing to Ostry on the Research Sector Program. Now immortalised by Ostry's term "The Mumble Heard Around the World", that briefing was the real start of the Telidon Program.

The briefing was unusual in that instead of employing the usual Flip Charts, Slides and Overhead Projectors we decided to employ television displays in the Headquarters Conference Room in downtown Ottawa connected via telephone lines to our Viewdata equipment at the Research Center about 10 miles away. This equipment was programmed so that in addition to operating in the alphageometric mode it was also able to simulate the British approach, and in the memory, working over a weekend, Herb and his team managed to store all of the material for the briefing.

In my part of the briefing no mention was made of the possible use of our new PDI technology for Viewdata and all of the frames were displayed in the simulated British format. Ostry however was enormously impressed and stated that he would like to see an immediate start on a Canadian program that would employ this impressive new British technology. It was at this point that Herb replied with his famous "mumble".

"Yes it's impressive but if I had my way this is not how I would design a videotex system".

Queried by Ostry as to what he meant, Herb then continued with:

"Look, I'll show you".

He then proceeded with a masterful demonstration of the sorts of pictures that we now associate with Telidon and showed how superior they were to what was possible with the alpha mosaic technique. He also explained the other significant advantages of the PDI coding approach.

To his everlasting credit and our not inconsiderable relief, Ostry grasped the significance of what he had seen and in a manner that is not generally characteristic of new Deputy Ministers stuck his neck away out by instructing us to get cracking on a crash project to design a made in Canada Videotex Program.

Armed with this directive, and with Bernard Ostry's drive behind us, we were able to move with gratifying speed and a growing sense of excitement during the next few months. In early June a report entitled "An Electronic Highway Network" was available and was distributed among a number of government departments. This was followed by a series of well received demonstrations and briefings on the proposed program to members of the Cabinet and Senior Officials. Then on August 15th came the Press Conference that I referred to at the start of this talk and the world became aware that Canada had its own superior videotex technology.

During this period between the Ostry briefing and the Press Conference however two other

events took place that have had a lasting impact on the Telidon Program. The first was the decision by The Ontario Educational communications Authority, then headed by Ran Ide, to turn down an offer by France to set up free of charge, a pilot teletext service for TV Ontario and to opt instead for the new Canadian technology. The second was the decision by our Chairman, John Madden, to accept my suggestion that he return to DOC from his leave of absence at Simon Fraser University and become involved in our new program. Then armed with the somewhat vague title of "Director General of Special Research Programs", he undertook the onerous task of coordinating the enormous set of diverse activities that soon became known as the Telidon Program. In fact John started work a week before the Press Conference and I think it safe to say that he has been hooked on Telidon ever since.

Now when I started these remarks I promised to also identify some of the most important milestones that we have passed since 1978. This is difficult because the number of possible choices is incredibly large and I suspect that each of you has a personal list that is just as valid as mine. However at the risk of being considered presumptuous I have put together a list of thirty events whose occurrence in my opinion signalled major changes, good or bad, in the content or direction of the program, and which in hindsight can be seen to have had the greatest impact on its evolution. In the light of this condition consequently, I hope that you will forgive me if your particular field trial or company product is not mentioned. It is not that I do not regard the BC Tel. or NB Tel. trials, for example, or the product developments of companies like Cableshare, Electrohome, Videoway, etc, as being important. Quite the contrary; without them there would be no Canadian industry. So with this apology in advance here is my list:

- 1)-Sept. 1978, Bell Canada announces Vista-1 trial based on a modified Prestel technology but says is considering the new DOC technology for next phase
- 2)-Nov. 1978, Cabinet approves \$9.0 million program
- 3)-Dec. 1978, name Telidon formally adopted
- 4)-May 1979, Toronto Gemma Group meeting recommends creation of joint government/industry Consultative Committee
- 5)-May 1979, Alberta Govt. Telephones announces Vidon Telidon trial
- 6)-June 1979, First Norpak Telidon user terminals available
- 7)-July 1979, MTS announces Project IDA
- 8)-Aug. 1979, Bell Canada announces plans for Vista-2 trial employing Telidon
- 9)-Oct. 1979, Southam Press and Torstar form Infomart Corp. with David Carlisle as President
- 10)-Nov. 1979, First meeting of Canadian Videotex Consultative Committee
- 11)-Nov. 1979, Formation of VISPAC
- 12)-Jan. 1980, Start of TV Ont. Broadcast trial
- 13)-June 1980, CCITT approval of Telidon standard

- 14)-Jan. 1981, Teleglobe announces Novatex Service
- 15)-March 1981, Telidon Augmentation Program announced
- 16)-May 1981, Start of Grassroots Service
- 17)-May 1981, Videotex-81 Conference in Toronto
- 18)-May 1981, ATT announcement of PLP based upon Telidon
- 19)-May 1981, Start of Vista-2 trial
- 20)-June 1981, Start of WETA trial in Washington D.C.
- 21)-Aug 1981, Announcement of IISP program
- 22)-April 1982, Telidon Public Initiatives Program announced
- 23)-May 1982, Infomart/Times Mirror joint venture announced; Infomart drops "Telidon Systems Inc." plans
- 24)-July 1982, Start of INet trial
- 25)-Feb. 1983, Approval of Telidon Exploitation Program
- 26)-April 1983, CBC announces IRIS Teletext trial
- 27)-Aug. 1983, Infomart and Bell Canada decide not to proceed with operational Vista Service
- 28)-Dec. 1983, Joint CSA/ANSI NAPLPS Standard issued
- 29)-Feb. 1984, Government announces new financing for IRIS Service
- 30)-Nov. 1984, Government cancels IRIS Program

So there is my list Ladies and Gentlemen. I am sure that you would agree that it very easily could have been expanded to twice the size without compromising the selection criteria and I suspect that before this meeting is over we will have ample opportunity to make improvements. In this connection however there is one important general point that I would like to make that is particularly important in the light of the negative conclusions that could be drawn from Event No. 30.

Although at times we may have been disappointed in our failure to reach all of the lofty goals that inspired the Telidon Program the initiative has been a unique and inspiring example of Government /Industry cooperation that has not only created an important new industry in this country but also made a magnificent contribution to the world wide Videotex adventure. All of us therefore can be proud of what we have accomplished and I for one am looking forward to a future that is filled with promise for Canada.

Thank you.

LIVING IN THE REAL WORLD WITH THE STANDARDS DEVELOPMENT PROCESS

OR

"HOW TO HIT A MOVING TARGET"

by

Robert Morin, Manager - Special Projects  
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The New Webster Encyclopedic Dictionary defines a standard as "something which is established as a rule or model by public opinion, custom, or general consent;" or as "a measure or weight by which others are to be regulated and adjusted". Their "purpose is to achieve the necessary or desired degree of uniformity in design or operation to permit systems to function beneficially for both providers and users."<sup>1</sup>

This paper will briefly describe the experiences of the Manitoba Telephone System with the evolution of the joint Canadian Standards Association (CSA) Standard T500-1983 and American National Standards Institute Standard (ANSI) X3.110-1983 "Videotex/Teletext North American Presentation Level Protocol Syntax" North American PLPS, commonly known as "NAPLPS", from its earliest days (1978) as a Communications Research Centre Technical Note (CRC TN 699) to the present. In the process, it hopes to illustrate that while the process of standards development is almost always costly, laborious, and time consuming; and, at times frustrating and not without its problems; it is, nonetheless, worthwhile and even necessary for the success of certain undertakings such as Videotex. To suggest that a particular standard is necessary is almost certain invitation to enter into debate over the merits and drawbacks inherent in any type of standard. It is not within the scope of this paper to wrestle with these issues. Rather suffice it to say that there are two major schools of thought. One school that points to the need and desirability for standards in order to benefit manufacturers, suppliers, and users with low cost and price, consistency of quality, reliability of performance, and, to some measure, protection for the consumer. The other school of thought would point to that same standard as stifling development and innovation, restricting competition and free enterprise, and even denying the user or consumer freedom of choice. The truth, as in most things, is not black or white; but, a useful, if not cheery and colorful, shade of grey. In the case of Videotex, the standard is certainly not restrictive with respect to future development and innovation. Great pains were taken at the outset, by the inventors and developers of Telidon<sup>SM</sup>, to ensure that the system

coding architecture was specifically hardware independent in order to give manufacturers as much freedom as possible with respect to the type and configuration of hardware implementation. With great foresight, these same individuals included clever hooks and elegant avenues for future enhancements. These include, but are not limited to, an almost limitless capability with respect to resolution, the possibility for future implementation of three dimensional graphics capability, the ability of simultaneously displaying a rich and numerous variety of colors which is far beyond the capability of current technology to implement. In addition, provisions were made not only for backward compatibility of newer systems with older terminals; but also for graceful default of terminals which have implemented less sophisticated functional capabilities. This requirement for graceful default not only ensures that the users terminal does not lock-up in some unknown or irrecoverable state; but, it also minimizes the loss of information.

Manitoba Telephone System (MTS) and Infomart were two of the earliest entrants into Telidon<sup>SM</sup> technology with the joint "Grassroots" videotex service, which was first introduced to 39 customers of the experimental IDA Omnitel<sup>SM</sup> broadband coaxial cable telecommunications system in mid-1980. An additional (150) customers from the Elie Fibre Optics field trial were later added. Infomart's role as the Videotex Host System (VHS) operator included ownership of the videotex host and page creation facilities as well as creation and maintenance of the videotex data base pages. MTS provided telecommunications facilities and was also the supplier of terminals, which could be leased or purchased at the users option. Because of MTS's position, in having to commit capital investment in user terminals at the outset, it viewed itself as both a "carrier" and a "user" in its representations on the various standards technical committees. MTS has participated as a member of the Canadian Videotex Consultative Committee Working Group (CVCC/WG) since it was formed in mid-1980. The CVCC/WG was formed as a voluntary Videotex industry group in order to arrive at some common understanding and interpretation of the Canadian Research Centre Technical Note 699 "PICTURE DESCRIPTION INSTRUCTIONS PDI FOR THE TELIDON VIDEOTEX SYSTEM", which was the basis for the manufacture of Telidon<sup>SM</sup> terminals and creation of Telidon<sup>SM</sup> videotex pages.

MTS and Infomart Grassroots service field trial was coming to an end, and full commercial service was in the early implementation phase, and scheduled for introduction in September 1981; when AT&T announced its "Bell System Presentation Level Protocol (PLP) Videotex Standard" at the Videotex '81 Conference, in Toronto, in May 1981. The PLP included, as a subset, most of the commands of the "699" Telidon<sup>SM</sup> protocol; and, some additional enhancements such as Incremental, Macro, Dynamically Redefinable

Character Set, Mosaic Set, and Color Modes 0, 1, and 2. There were some areas of conflict in commands and control functions, and in their coding (e.g., "Bit" command and "Blink" control of the "699" protocol to name two). However, because of the obvious economic advantages of having a single videotex standard for North America, the CVCC/WG agreed to work towards developing a Canadian Videotex Standard that would be more closely aligned with the AT&T "PLP" in the hope of eventually developing a North American Videotex Standard. The CVCC/WG immediately began work and eventually developed a new "Standard" - CRC TN 709. This document soon became known as the "709" protocol. It included all of the functionality and coding of the AT&T PLP, and it also carried forward many of the conflicting and overlapping areas of the "699" protocol (e.g., the Control (Status) sub-commands Clear; Domain; and Drawing (including 699 Blink), Tonal, Line, Fill, and Text Format Controls). This was done in order to harmonize the new standard with the previous "699" protocol.

The major problem and impediment to actually achieving the goal of a North American standard was the rather large base of "699" protocol terminals and data base pages that were already in place in Canada. The numbers in Manitoba alone were rapidly approaching 1,000 and 100,000 for terminals and pages respectively. The CVCC/WG developed a strategy that basically called for the conversion of the existing terminals and data base test pages from the "699" protocol to the "709" protocol. The conversion of the VHS data base pages from "699" pages to "709" pages would be realized by passing all the pages through a conversion software program. The data base page conversion software program was to be developed by DOC. The conversion of the VHS data base could be accomplished overnight. The conversion of terminals involved replacement of the existing "699" decoder EPROM chip-set with a "699/709 Retrofit" EPROM chip-set. The requirement for the replacement EPROM's to support both the "699" and the "709" protocol simultaneously arose because of the massive logistics problems involved in synchronizing the conversion of approximately 1,000 terminals, scattered over an area exceeding 100,000 km<sup>2</sup>, with the conversion of the Infomart Videotex Host System (VHS) data base pages. With the dual "699/709" protocol, terminals could communicate with VHS's supporting either 699 or 709 pages. Another problem was that the EPROM chip-set could not fully support all the functionality of both the 699 and the 709 protocols because of memory limitations. Some of the minor functionality of both the 699 and 709 protocols had to be sacrificed. However, this was done in a judicious manner such that "699/709 Retrofit" terminals, although missing some functions, would be a subset NAPLPS and, therefore, still compatible with the NAPLPS Standard.

Two of the major stakeholders, MTS and Infomart, struck an agreement whereby Infomart agreed to support the "699/709 Retrofit" terminals for a minimum of three years with either 699 pages or 709 pages. In addition, Infomart would have to confine the functionality of the 709 page creation system to those functions supported by the "699/709 Retrofit" terminals. This agreement was required in order to ensure the continued success of the Grassroots project, and to protect MTS's and MTS customers' capital investment in the existing terminals. The problem of who would bear the burden of engineering, material and labor costs involved in the conversion program was resolved by a balanced sharing of these costs between the Federal Government, manufacturers, VHS operators, and users (terminal owners - MTS in this case). The stage was now set to put the conversion process in motion and to pursue the ultimate goal of a Videotex Standard for North America. The "699/709 Retrofit Specification" was approved by the CVCC/WO in early January 1982, and the engineering of the "699/709" EPROM's was underway. The actual conversion of the terminals was done at the manufacturer's (Electrohome) local repair facilities, and started in early 1983. Terminals were drawn out of MTS stores and retrofitted. These provided the initial float of terminals which were used to trade out the old "699" terminals in users premises. Users and the Grassroots Infomart VHS continued operating in a "699" environment. However, those terminals that were converted now had the capability of interpreting most NAPLPS pages. The terminal "699/709 Retrofit" conversion program was completed in September 1983, and Infomart converted its data base to the "709" protocol at the end of October 1983. Certainly some problems were encountered, but they only made the process more challenging and exciting. And, these problems created neither interruption of service, nor even minor concern to the user.

The "699/709 Retrofit" program took place in parallel with the development of the joint CSA/ANSI NAPLPS standard which was published in its final form in December 1983, all within the framework of the same CVCC/WO committee. This same committee also provided extensive technical support and developed a complete set of test pages to ensure that both the "699/709 Retrofit" chip-set and the data base page conversion software met all the agreed requirements of the "699/709 Retrofit Specification".

#### Conclusion:

The success of the "699/709 Retrofit" program can be summed up in one word - COOPERATION. In essence, this paper is a tribute to all those involved in the "699/709 Retrofit" program - the Federal Government, Department of Communications, which provided the leadership; manufacturers (A.E.L. Microtel, Electrohome, Norpak, and Northern Telecom); research and consulting firms (Bell Northern

Research, and Systemhouse Ltd.); Infomart; and, all of the other members of the CVCC/WG, too numerous to list individually, who gave so unselfishly of their time, talents, and technical skills. It was their dedication, optimism, and professionalism which ensured the success of this program. Close coordination and planning was required. And, above all a good measure of patience. The above demonstrates what can be accomplished when concerned parties work towards a common goal. It also illustrates the necessity for a Standard, particularly in the changing world of Videotex. Even if the standard is a "moving target", it can serve the interests of concerned parties; if they are willing to cooperate, be flexible and move with the target.

Postscript: (The Standards Target is still moving)

MTS engineers were also busy developing a Videotex, NAPLPS compatible, decoder software package for the Commodore 64. It is scheduled for release this quarter. The objective was to develop a software package which would be compatible with all of the major Canadian and USA NAPLPS VHS's (Gateway, Grassroots, Keycom, and Viewtron). Adherence to the NAPLPS Standard ensured compatibility at only the Presentation Layer (layer 6 of the International Standards Organization 7 layered Model for Open Systems Interconnection). The four major videotex systems operators had implemented "Session and Terminal Handling Protocols" which were all essentially incompatible in some respects, or proprietary in nature. Once again, however, the various interests agreed to work together through their respective committees of CSA and ANSI, and the joint CSA/ANSI working group. They have tabled their respective Session and Terminal Handling protocol specifications; in order to arrive at an understanding of the functions and coding that may be required in developing a common standard; and, to assist various manufacturers of hardware and software decoders to develop products which are compatible with their respective VHS's.

The next task is to develop joint CSA/ANSI protocol standards and specifications for the other layers. Submissions are currently being developed within ANSI, seeking approval to start work on several major projects, including a Session layer protocol, a Data Link layer protocol, and possibly some areas of the Application layer as well.

Telidon™ is a Trademark of the Canadian Federal Government, Department of Communications.

Omnitel™ is a Trademark of the Manitoba Telephone System.



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