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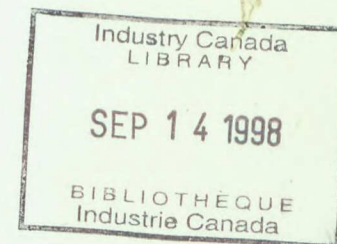
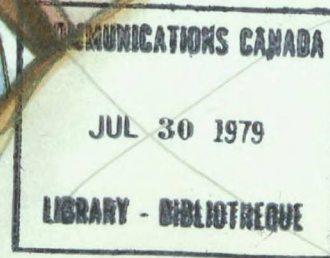
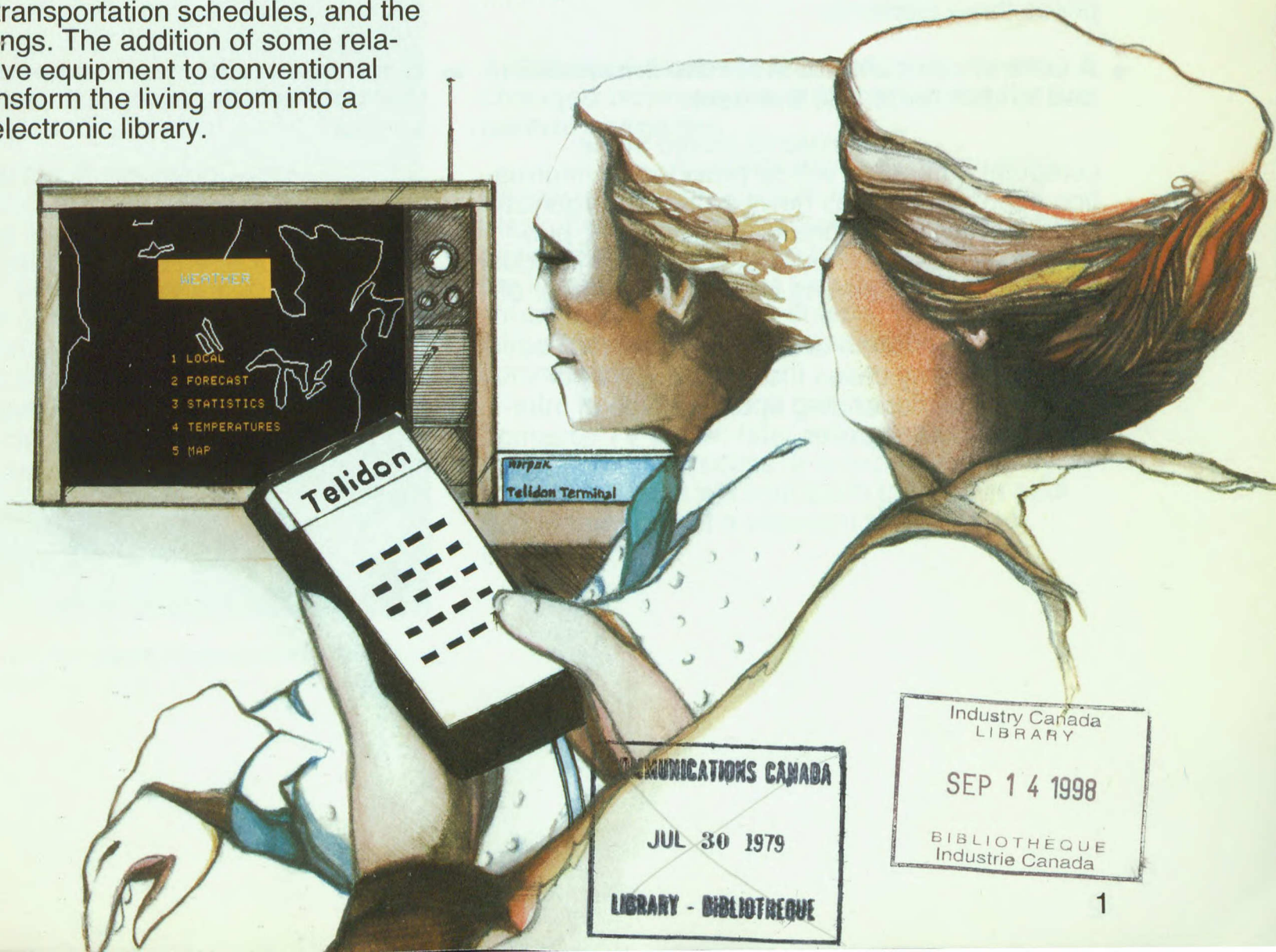
TWO-WAY TV IS HERE

A new era in communications has dawned. A dramatic innovation, called Telidon, will soon transform the familiar television set into a remarkable information retrieval system — and, eventually, a two-way communications centre from which viewers may conduct business, take educational courses, or send and receive mail at the speed of light. Telidon, a Canadian-developed videotex system, represents the latest stage in a worldwide trend towards new and imaginative information services for the home and the office.



Telidon is an entirely new way of looking at television. Subscribers will have instant access to a constantly expanding encyclopedia of information. At the touch of a few buttons, they can select material from a wide range of subject areas and have it displayed on their TV screens in the form of printed text, graphics, and half-tone photographs. Telidon will offer such diverse information as news, consumer advice, transportation schedules, and the latest stock listings. The addition of some relatively inexpensive equipment to conventional TV sets will transform the living room into a richly stocked electronic library.

Future versions of Telidon will make television a transmitter as well as a receiver of information. Homeowners and businessmen will be able to use their sets to order goods and services, pay bills, and — in some instances — to sell their own ideas. Through Telidon, television could become a major marketplace for tomorrow's information society.



WHAT IS TELIDON?

The basic Telidon system comprises three elements:

- **A central computer to store the information and to distribute it to the user.**

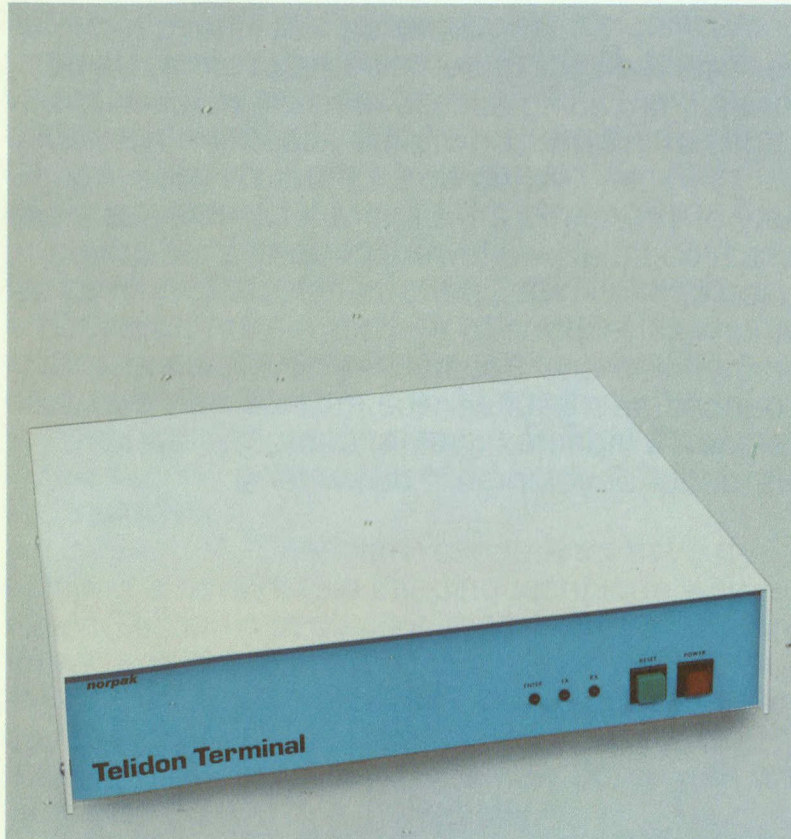
The material stored in the computer's memory will be provided by information suppliers such as news gathering organizations, governments, financial institutions, publishing houses, retail outlets, and even individual entrepreneurs operating from their homes or offices.

Some of the information will be free but in many cases there might be a per page charge, depending upon the type of information and the supplier.

- **A communications link to carry the information between the computer and the subscriber.**

Communications between computer data banks and the Telidon set can be provided by standard telephone line, two-way video cable or even optical fibres.

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



A Telidon adaptor manufactured by Norpak Ltd. of Pakenham, Ontario.

- **A Telidon adaptor to translate signals exchanged between the subscriber and the central computer.**

An adaptor converts incoming signals into a form suitable for visual display. Black and white, six shades of grey and eight basic colors, or both, can be used to compose the image. The adaptor also converts the instructions or messages entered by the subscriber into a form suitable for transmission on the communications link.

This unit may be attached to the domestic TV set or, later on, installed during the manufacturing process. It is expected that by the mid-1980s it will cost \$200 to \$300 in addition to the price of a standard television receiver.

DEVELOPMENTS ABROAD

A forerunner of videotex, generically termed teletext, has been in operation in Great Britain since 1974. Two broadcast teletext services (Oracle and Ceefax) now give British viewers ready access to news, weather, community entertainment guides, and other general interest topics. Viewers who have the special decoding equipment may select from more than 100 pages of material which are broadcast in a continuous loop on a normally unused portion of the television signal.

These two services have recently been joined by a more powerful system, called Prestel, providing access to many thousands of pages of information via the telephone network.

Aside from offering a wider variety of information, Prestel is a two-way service which could allow viewers to participate in televised opinion polls, perform calculations or to otherwise respond to the information displayed on their screens. Prestel has now been announced as a pilot service. France has also developed a videotex system and other systems are under development elsewhere.

A DRAMATIC INNOVATION

Telidon represents a significant technological improvement over the European videotex systems. Developed at the Department of Communications' Communications Research Centre, Telidon is more flexible and can more easily accommodate future growth and improvements. The direct terminal-to-terminal interaction possible with Telidon will allow subscribers to communicate directly with one another via their television screens, creating a new personal medium. Most important, the superior quality graphics make Telidon the first in the second generation of interactive television technologies.

Canadian researchers have developed a remarkable imaging technique with which Telidon can display charts, diagrams, cartoons, and maps in much finer detail than other existing videotex systems. This valuable feature could allow a prospective homeowner, for example, to discuss details of a new home with an architect located in a distant city.

Perhaps the most exciting potential for such multicolored graphic displays is in distance education. Students and teachers, although geographically separated, could carry on an educational dialogue using their TV screens as a common electronic blackboard.

RETRIEVING INFORMATION

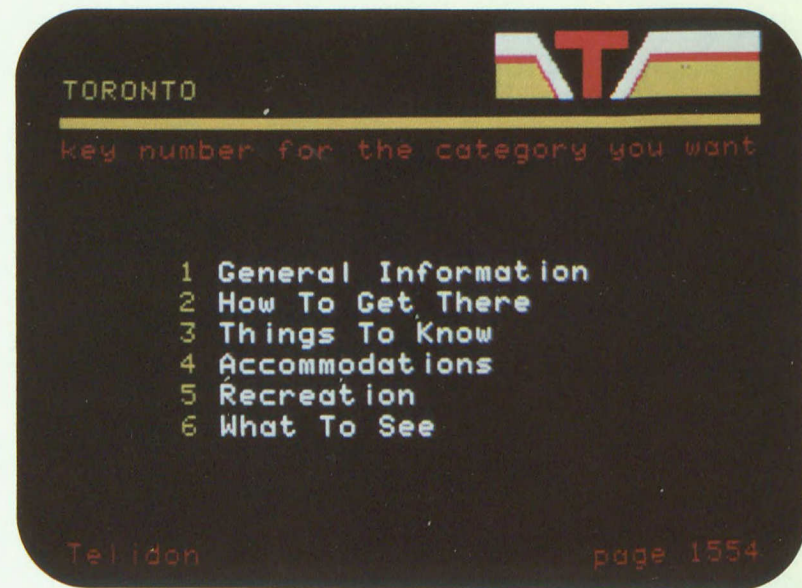
It will be a simple matter, requiring no special skill on the part of subscribers, to retrieve information through Telidon.

All the information in the computer's memory will be carefully organized to make information retrieval the utmost in simplicity.

Information is stored as pages — one page being the information that can be displayed on the screen at one time. Each page has its own reference number, or address.

To retrieve information on a subject of interest — in either text or graphic form — a customer would turn on his modified television set and switch to the Telidon service. He would then consult a general index on the screen and select a subject area by pushing a number on a handheld keypad (resembling a pocket calculator) linked to the Telidon adaptor.

The subscriber narrows his selection step by step by choosing a number from each successive page to get more and more detailed information.



A traveller wishing to find a room in Toronto could begin by typing the number corresponding to the Toronto index page. From the listing which would appear on his screen, he would select the number opposite **Accommodations** and then enter this new number into the system.

STEP BY STEP



From the new listing that would appear, the traveller would select the number for **Hotels**, and once again key this number into the system.



By following this refining process, called a tree search, he would arrive at **Hotels, Toronto** which would likely be a listing several pages long giving hotels, locations, rates, and vacancies.

CREATING INFORMATION

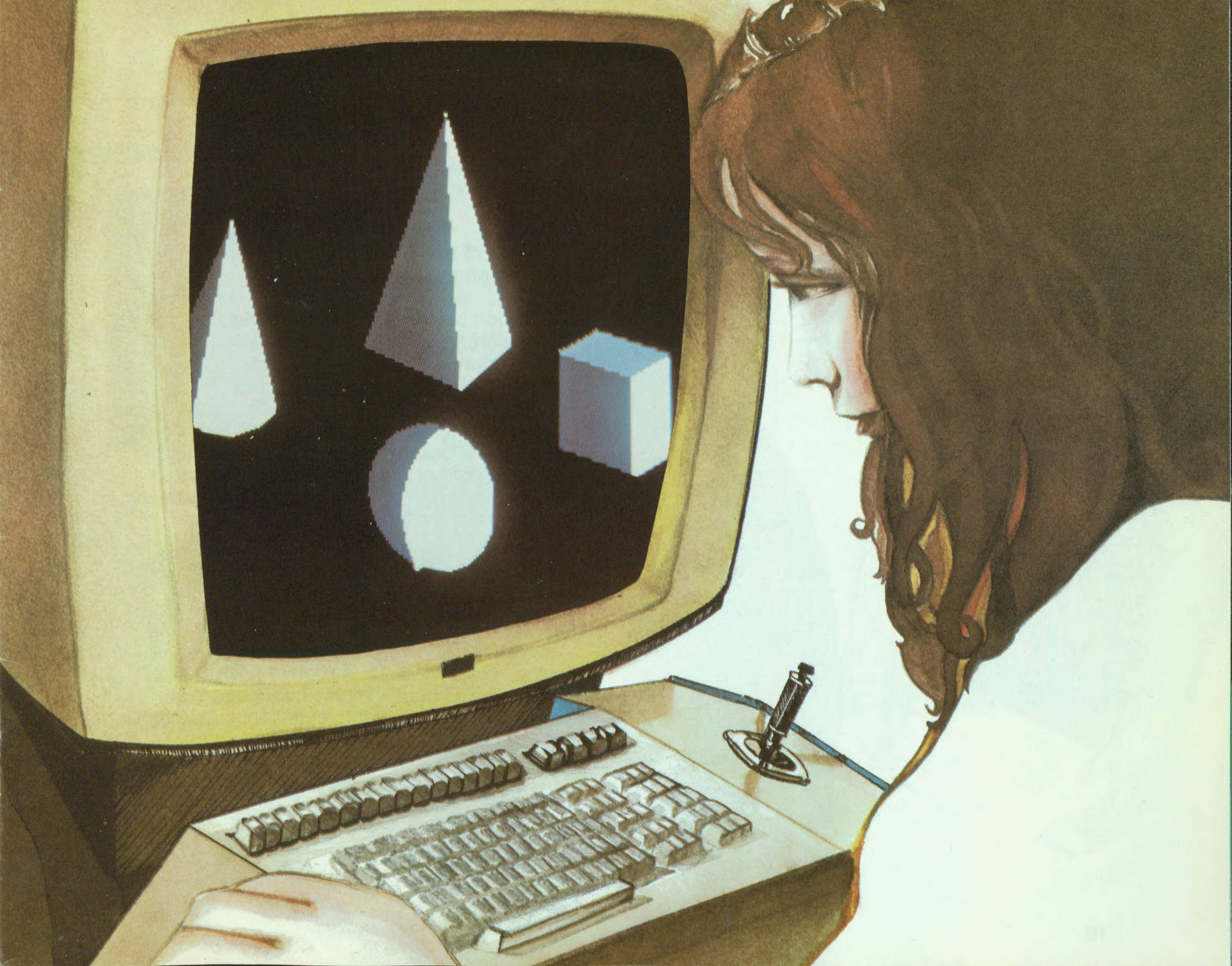
Among the host of useful new services Telidon could provide are home shopping, armchair banking, and two-way educational programs.

Those who have services to offer will be able to introduce and update their material using special typewriter-like keyboards. Some information suppliers will have keyboards on their premises so they can add textual or graphic information to the central databank at their own convenience. Others will go to central locations to input their information.

While initially of interest mainly to the information providers, this ability to manipulate and add to the central store of information may eventually be extended to all interested Telidon subscribers.

Viewers with keyboards could call up income tax forms on their screens, fill them out (with some guidance from the computer), and then automatically transfer the completed electronic 'form' to the income tax department's computer.

Every person could become his own publisher. In place of the major capital investment required today for printing and distribution, the publisher's only requirement would be access to the equipment used for entering information into the central databank. Many of the financial barriers to publishing would thus disappear.



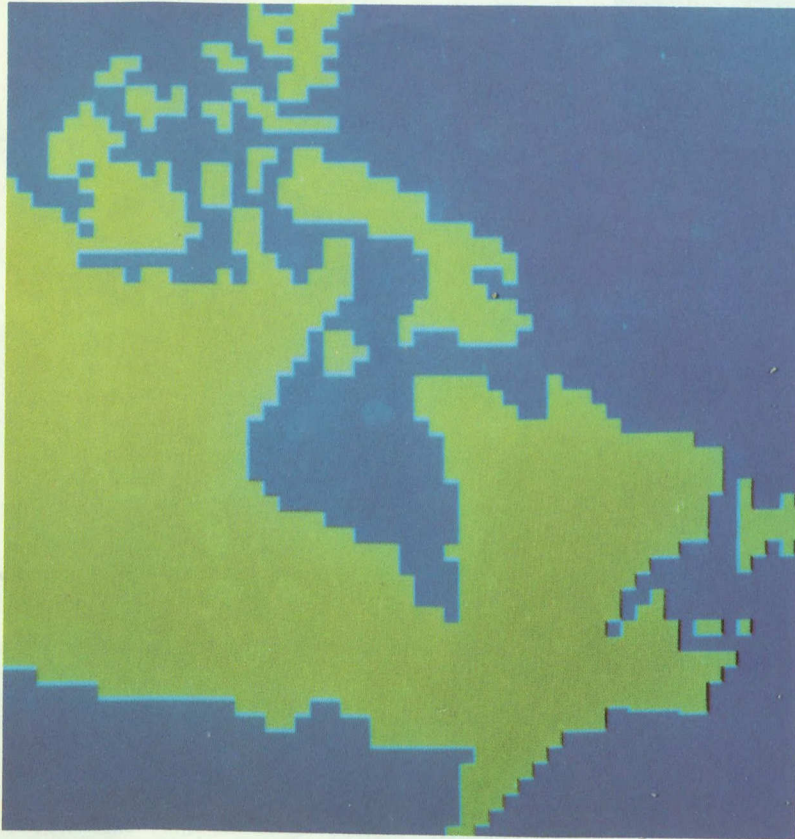
INTERACTING

One of the most promising innovations of the Telidon system is person-to-person communication.

Although not available with the early Telidon services, this novel capability will add a powerful new dimension to traditional voice communications. By providing a common visual working space, Telidon will allow decentralized businesses and governments to conduct teleconferences in which all the participants can view the same graphic presentations — and any participant could erase, add to, or otherwise modify the common display. Telidon graphics are easy to work with: no special skills are required.

In addition to providing organizations with an inexpensive electronic meeting place, Telidon could greatly facilitate general company operations by, for example, providing a quick and easy method for document preparation where joint approval is required. Also, since handwritten and photographic information can be transmitted with Telidon, institutions may use the system for signature verification and user identification.





EVOLUTION OF TELIDON

Telidon evolved from a broad research program underway for a number of years at the Communications Research Centre in Ottawa. Government researchers had been investigating new interactive visual communication systems and were developing a highly advanced system for the efficient transmission of graphics using the telephone network.

The keen worldwide interest that accompanied the introduction of the British Prestel system convinced government officials that the Canadian line of research was appreciably more promising and could be transferred to industry to make new consumer products. When it became evident that the Canadian approach to graphics was more advanced than approaches being developed elsewhere, the decision was made to develop the new technology for a national public information service.

This resulted in a system superior in a number of key areas:

- flexibility;
- compatibility of stored information with both low- and high-resolution Telidon terminals;
- capacity for growth.

With Telidon, images are described and stored in the database as geometric shapes — points, lines, rectangles, polygons and arcs — placed at specific positions in the overall image.

The advantages of this approach are that:

- images are displayed to the degree of resolution provided by terminal hardware;
- future Telidon terminals will not be restricted by today's technology;
- further innovation will not render existing Telidon databases obsolete.



WHAT NEXT?

Although Telidon originated in government laboratories, the challenge of creating a national public information service must now be shared by the private sector. To test its operation and potential, Telidon is undergoing a series of trials across Canada.

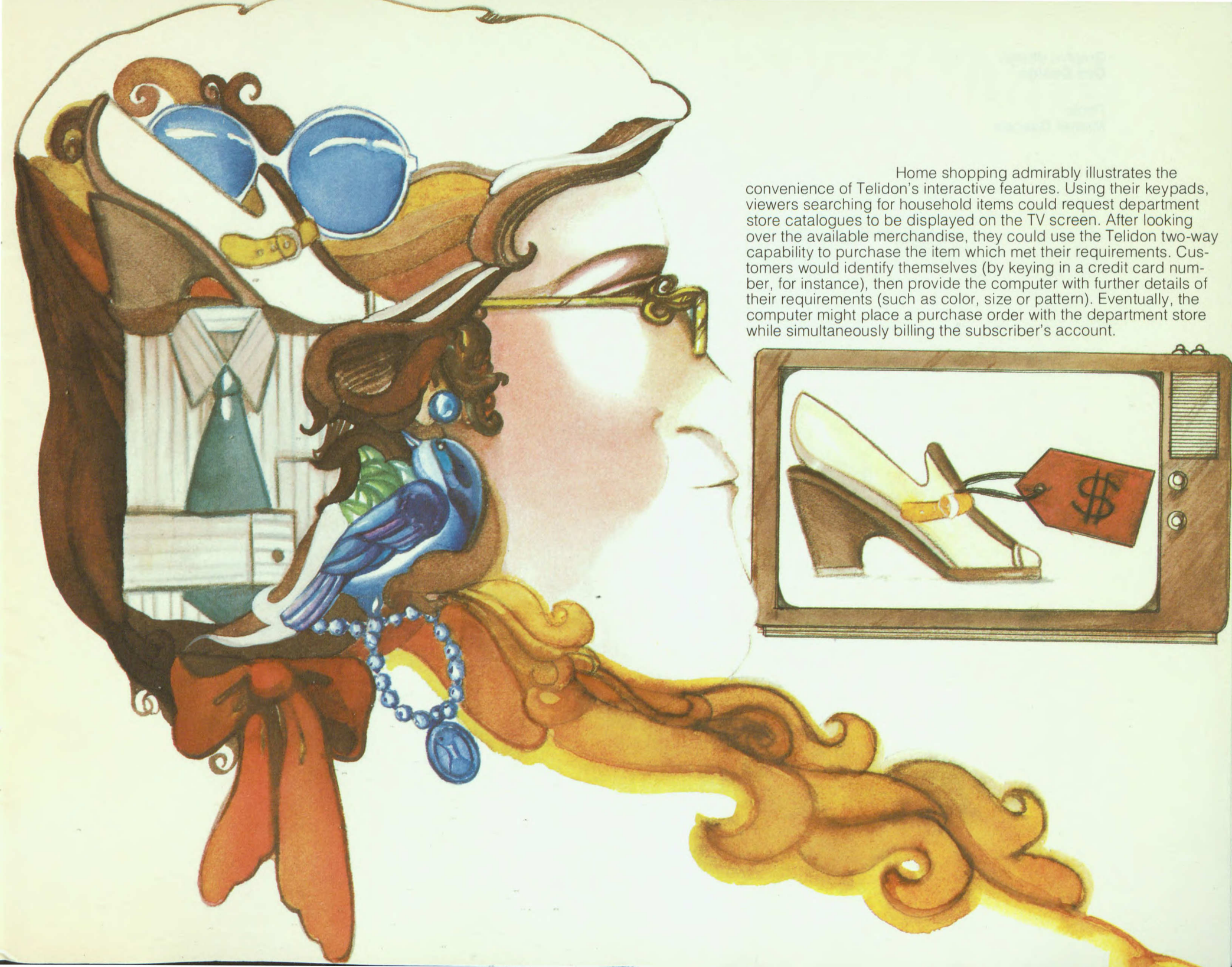
The Department of Communications recognizes that serious questions of social policy come hand in hand with the new technology. These questions touch on such issues as universality of access to information, individual privacy and autonomy, the rights of consumers and the occupational composition of the labor force. Through the field trials and other research, the Department hopes to gain a deeper understanding of these social questions.

The Department is committed to ensuring that the development of Telidon conforms to national interests and that Canadians benefit from the highest possible quality of services at the most reasonable costs.

One of the prime considerations is that as far as possible jobs associated with the manufacture and servicing of Telidon systems should go to Canadians. Another objective is to ensure that all such systems are designed and manufactured according to uniform technical standards.

The department also has a strong interest in the creation of a vigorous Canadian information industry to compete in future national and international markets.

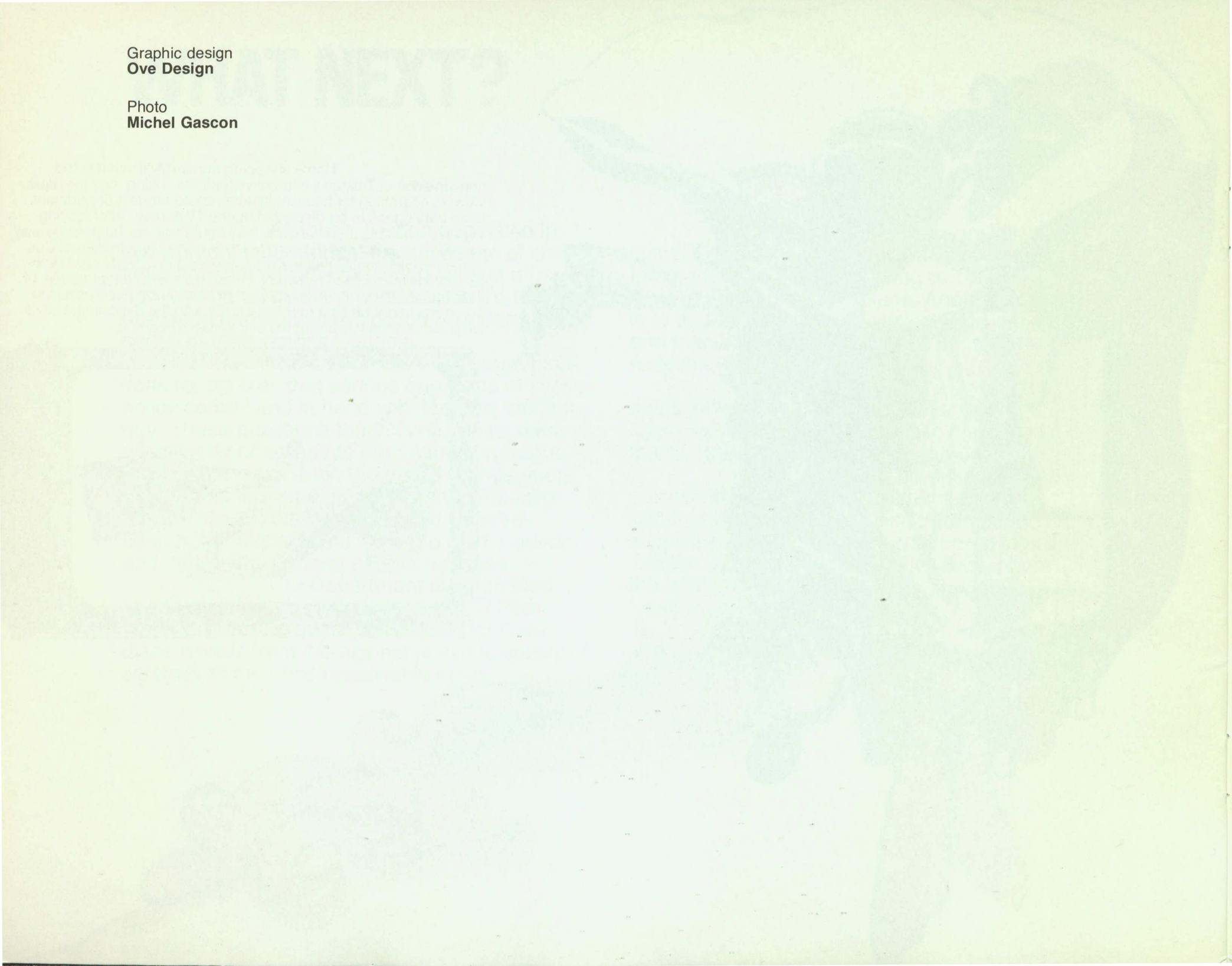
Through the co-operative and co-ordinated efforts of equipment suppliers, communications carriers, and information suppliers, Canadians can benefit from future Telidon systems which will offer subscribers the best possible service while providing for economic growth.



Home shopping admirably illustrates the convenience of Telidon's interactive features. Using their keypads, viewers searching for household items could request department store catalogues to be displayed on the TV screen. After looking over the available merchandise, they could use the Telidon two-way capability to purchase the item which met their requirements. Customers would identify themselves (by keying in a credit card number, for instance), then provide the computer with further details of their requirements (such as color, size or pattern). Eventually, the computer might place a purchase order with the department store while simultaneously billing the subscriber's account.

Graphic design
Ove Design

Photo
Michel Gascon





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