Bell Canada is now conducting a pilot program. When consumer preferences are discernible, other services such as an attachable pocket calculator that can determine instantly the costs of long-distance calls may be included. It is assumed that the electronic phone will replace the traditional one in the next few years.

Telidon

We live in a time in which institutions are changing rapidly.

Right now the shapes and functions of universities, libraries, television stations and office buildings are being challenged by "interactive visual communication," a new technology that sends written texts and graphic images between TV screens and computers.

The Canadian system called **Telidon,** the most sophisticated in the world, is being tested in Ontario this year by the Department of Communications and TV Ontario. Fifty-five user terminals will be placed in schools, libraries and a few private homes throughout the province. In the 1980s teachers and students will be able to use their separate screens as a common blackboard on which one may write a sentence, draw a diagram or jot down a formula that others may change or rub out. Soon, possibly in a decade, subscribers will be able to take out entertainment—classic old movies, stage plays, concerts—from the data bank for display on their home sets.

Interactive Visual Communication

How It Works:
All cameras are light sensors. Most focus on a well-lighted scene or object (a landscape, a face, a rose, a page of a book) and expose light-sensitive film. The film records the varying intensities of reflected light, the shadows and highlights, reproducing the image. But film is not necessary—pictures can be taken, stored and transmitted from place to place by measuring the light intensities and assigning numbers to each variation. Satellites, for example, take precise pictures of the earth's surface by measuring the differences in the sunlight reflected. Snow reflects more light than a plowed field; green foliage reflects more than barren rock. Each difference is recorded by sensors and converted to numbers. These are transmitted to earth stations, where they are converted back to the reflected intensities, producing facsimile pictures.

What It Does:
An interactive visual communication system connects a bank of information to a home or office television set. A special device is plugged into an electrical outlet and connected to the set. It converts digital lists from the data bank and displays them as texts or pictures on the screen. A small keypad (or a similar device) wired to the set allows the subscriber to call for the particular information he wants.

Prestel and Antiope:
The first system, **Prestel**, was developed in Great Britain and the second, **Antiope,** in France. They were designed when memory storage was still very expensive. Each divides the display area into a grid of mosaics (forty squares by twenty-four for texts; eighty by seventy-two for graphics). Since the picture detail is limited by the number of squares, these systems do not permit fine reproduction of graphic variation—a straight line appears as a series of steps and a curve as a series of right angles.

Prestel first offered an information retrieval service to 1,500 subscribers in 1979. Its data bank has some 300,000 pages of information on such subjects as agriculture, child care, dental care, marriage guidance, motorcycle racing, insurance, housing vacancies and theatre listings. The system is run by the British Post Office (which also runs the phone system). Subscribers call the data bank by phone and select the information wanted by punching a keypad. They pay an average of about ten cents for each page displayed. The page appears on the screen as information and is received line-by-line.

Similar but lesser services are offered by the British Broadcasting System and the Independent Broadcasting Authority. They broadcast on fixed schedules and viewers must wait for particular information to come up.

The Telidon System

Canada's **Telidon** differs from **Prestel** and **Antiope** in the complexity of its digital codings, a difference that is important. The Canadian system has a basic advantage: the ability to put a great many more details into its display coding or, to use the jargon of the trade, into its Picture Description Instruc-