

Telecommunications. TWX was provided by Telecom Canada.

As of 1981, there were about 50,000 telex units in Canada and some 75,000 in the United States. Telex and TWX are now considered to be almost universal services.

14.3.3 Data and electronic message services

Data communications services involve sending information — often in the form of numbers — over systems with vast handling capabilities. Electronic message services comprise facsimile services (which transmit faithful, high-quality reproductions, whether in text or graphic form, of letters, documents, drawings, maps or photographs) or textual communications services. The message or data may be sent over public lines or lines owned or leased by the customer with the carrier providing only a switching service.

TCTS (renamed Telecom Canada in September 1983) and CNCP competed vigorously for this market. In 1967, CNCP introduced a broadband exchange service, an analog network which would permit higher rates of data transmission. In 1973, TCTS and then CNCP each introduced nationwide digital networks which had higher rates of transmission and spoke the same digital language as the computers in Canada. TCTS introduced a nationwide packet-switching network which radically improved the efficiency of digital networks in 1977 and CNCP brought out its own national packet-switching and circuit-switching network with similar advantages. In 1981 the two competitors introduced national textual communications services, permitting users to communicate over their own electric typewriters or word processors. These new technological developments increased the amount of information which could be carried and also the range and versatility of the carrier's service.

Both carriers offer a wide variety of store-and-forward message systems and different types of teleprinter, facsimile and cathode-ray-tube (CRT) terminals. These developments pointed toward the automated office of the future, in which much of the clerical work and some of the administrative and managerial work is computerized; typewriters, telephones, computer terminals, office copiers, message services and word processors are all integrated at multifunctional work stations. DOC estimated that by 1995 there would be 2.5 million multifunctional work stations in Canada. CNCP Telecommunications predicted a textual communications service using electronic mailboxes, terminals with access to in-house electronic files and outside data banks.

14.3.4 Videotex

Videotex is a communications medium which permits the delivery of textual, graphic and facsimile information from central data banks to a slightly

modified TV receiver. This technology was originated by the British Post Office in the mid-1970s. The DOC communications research centre developed and demonstrated a second-generation videotex system, Telidon, in 1978. This two-way visual-communication system is an example of new services made possible by the marriage of communications and computer technologies.

Through an adaptor attached to or built into an ordinary TV set, a Telidon user can call up information stored in distant computer data banks and see it displayed on the screen in the form of text and graphics.

Telidon terminal equipment may be used to retrieve on a home or office TV the information stored in computers by businesses, schools, governments, newspapers and publishing houses around the world. It could also be employed for electronic banking, shopping, messages, education and mail services or computer games and other applications, without the subscriber having to leave his home or office.

All of these applications have been tested across Canada by telecommunications carriers, cable companies, governments and educational-TV networks. In these field trials, Telidon signals were transmitted by off-air broadcast, satellite, optical fibres, telephone and coaxial cable. The promise of Telidon encouraged many Canadian manufacturers to begin supplying Telidon hardware. A host of Telidon information-providers also emerged.

Superior to competing videotex systems because of the quality of its colour graphics, Telidon is rapidly becoming the accepted videotex standard in many parts of the world.

Canada's first commercial videotex service, Grassroots, provides farmer-subscribers in south-western Manitoba with up-to-date weather forecasts, commodities and livestock prices, and community information, as well as a range of retail services.

Teleguide to Ontario is making it easier for Toronto-area residents and tourists to find their way around and enjoy the city's attractions. Telidon terminals placed in malls, hotel lobbies and other public locations can be used freely by anyone who needs information on bus and train schedules, entertainment, restaurants, special events and the weather.

Abroad, Telidon has opened new markets for Canadian high-technology products and services. Telidon services now operate in the United States, Great Britain, Venezuela, Australia and Switzerland.

At home, the department of communications administered a Telidon industry investment stimulation program providing \$10 million to help accelerate the introduction of Telidon services from coast to coast. The funds assist sponsors of 50 projects to buy Telidon equipment, thus stimulating innovation in the creation of new services, reducing