16.1.1.3 Data communications services

The availability of information of all kinds is vital to the management of a modern industrial country. The member companies of the Trans-Canada Telephone System and CNCP Telecommunications offer a wide selection of low-speed data services and a variety of medium- and high-speed computer communications facilities. In recent years the TCTS companies have increased the message capacity of their coast-to-coast microwave network to meet the growing needs of data communications users.

TCTS was the first Canadian carrier organization to develop digital communications facilities. This form of medium- and high-speed transmission is important to computer communications users because it permits the transmission of data in digital form, the language of computers. Without digital transmission facilities, data moving from one computer to another have to be converted to analogue form before they can be transmitted, and reconverted to digital form before the recipient computer can accept them. Another benefit of digital transmission is its low error rate.

TCTS established the Computer Communications Group (CCG) in recognition of the special requirements of Canadian data users. This multi-disciplinary task force develops advanced data communications systems and offers a wide variety of telecommunication services and products.

The Dataroute. In 1973 the CCG developed the world's first nation-wide digital data communications system — The Dataroute. It allows computer data to be transmitted at speeds up to 50,000 words a minute, with greater accuracy and at lower cost to data customers than the conventional analogue systems.

Faxcom. The Computer Communications Group also introduced Faxcom in 1973, a facsimile transmission service that transmits printed and graphic information by telephone. This service meets the growing need for the instant transfer of information and documents in their original format.

Vucom I is a terminal which displays data on a television-like screen. When it is connected to the telecommunications network, Vucom I can be used for retrieving information from central computer banks, for checking credit cards, etc. It can also be used as an in-house terminal for posting business orders and for process control in manufacturing. The terminal is equipped with a typewriter-style keyboard which the operator uses to prepare and send data.

Data-phone, a TCTS service, transmits data from punched cards, tape, or magnetic tape over public telephone circuits or leased private lines. The data-phones take signals in digital form and convert them to analogue signals (variable tones) for transmission. At the receiving end another data-phone converts the analogue signals back to digital so they are acceptable to a computer. Data-phone transmits at speeds up to 1,200 bits a second.

CNCP's Infodat service offers digital transmissions at speeds up to 50,000 words a minute. Infodat, which cuts transmission costs by an average of 25% and reduces errors to one in 10 million characters, was made possible through the expansion of CNCP's time division multiplexing techniques. Time division multiplexing is a method of allowing more data messages to travel on one circuit by making more effective use of the frequency spectrum. This reduces costs and provides for regenerated or reconstituted data signals so that the chance of errors is virtually eliminated. The service is available in major centres across the country. Canada's 28,500 Telex subscribers can also use Infodat channels.

Data-line service, offered by TCTS companies, uses the public telephone circuits wherever direct distance dialling is available. Data-line users can dial-up a time-sharing computer or other business machine and send or receive information at speeds up to 2,000 bits a second.

Datacom 300 permits the transmission of data over both the public switched network and private leased lines. As a speed-selectable, teletypewriter-compatible terminal, Datacom 300 operates at speeds ranging from 100 to 300 words a minute.

Dataspeed service is used to move large volumes of data at high speeds over the public telephone network or private lines. Transmitting at 1,050 words a minute, Dataspeed takes only half an hour to move the same amount of information that would keep a teletypewriter, operating at 100 words a minute, occupied for four and a half hours. Information to be transmitted is recorded on punched paper tape which then speeds through a machine that can