

data-phone converts the analogue signals back to digital so that they are acceptable to a computer. Data-phone transmits at speeds up to 1,200 bits per second.

Data-line service 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 per second.

Datacom permits the transmission of data over the regular public telephone network, and consists of an access line to the network, a telephone set and a Datacom terminal which is a teletypewriter. The Datacom terminal can be used for normal teletypewriter functions and also as an input-output device associated with a time-sharing computer.

VUcom I, introduced in 1972, is a terminal which displays data on a television-like screen. When it is connected to a telecommunications network, VUcom I can be used for retrieving information from central computer banks, for checking credit ratings, 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 teletypewriter-style keyboard which the operator uses to prepare and send data.

Dataspeed service is for the movement of large volumes of data at high speeds over the public telephone network or private lines. Transmitting at 1,050 words per minute, Dataspeed takes only half an hour to move the same amount of information that would keep a teletypewriter, operating at 100 words per minute, occupied for 4½ hours. Information to be transmitted is recorded on punched paper tape which then speeds through a machine that can "read" the code represented by the arrangement of the punched holes. As the tape is read, signals are sent to the machine on the receiving end of the circuit.

Multicom is a wideband data service that allows the customer to pay only for transmission time used. It was introduced on a nation-wide basis in 1970. There are three classes of Multicom service and a subscriber can dial-up any other subscriber in Canada on the same class of service. With features designed specifically for data transmission, as opposed to voice transmission, Multicom provides reliability and low error rates.

Multicom I provides data and voice transmission between specified locations at speeds up to the capability of the public telephone network (2,000 bits per second). Users can connect with each other over the direct distance dial network.

Multicom II provides medium-speed data transmission up to 4,800 bits per second. It is functionally segregated from the direct distance dial network, but is integrated to the extent of using the same switching stations, microwave towers and other facilities. Provided the customer's business machines have the capability, data can be transmitted both ways simultaneously on Multicom II.

Multicom III provides transmission at speeds of 19.2, 40.8 and 50.0 kilobits per second over a network integrated with the regular telephone network but is, like Multicom II, functionally separate. Multicom III permits simultaneous voice and data transmission.

TCTS also provides wideband data channels that offer a special high-speed service to customers who need such transmission facilities on a full-time or dedicated basis. Unlike Multicom, wideband data channels are paid for on a 24-hour basis and operate outside the public telephone network.

Broadband exchange service. In 1967, CN-CP Telecommunications introduced an automatic voice-data switching system known as broadband exchange service, a high-quality, rapid communications system. It is the first such system to operate in Canada and the second in the world. Broadband has more than tripled the transmission speeds for switched data services; furthermore, it has the capability, on customer demand, of transmitting computer data at 51,000 words per minute, or more than 50 times faster than the top speed reached by conventional switched networks. The Royal Canadian Mounted Police was the first organization to be tied into this modern network, using it for high-quality transmission of fingerprints, photographs and documents between headquarters at Ottawa and divisional headquarters at Montreal, Toronto, Winnipeg, Edmonton, Regina, Vancouver, Fredericton, Halifax and St. John's.

The name broadband exchange service is derived from the actual system since it is designed to permit various bandwidths, depending on the communications needs of subscribers. The system can switch four bandwidths; four and eight kilohertz for voice,