

facilities with those of the other members and with those of all the other telephone companies in Canada to provide connections with telephones elsewhere in North America and overseas. Collectively, the system operates the world's longest single microwave network, carrying telephone conversations, radio and television programs, and data coast-to-coast.

About 85% of the telephones in Canada have access to direct dial long distance equipment that automatically routes calls and bills the customer. Continuing automation of facilities made possible a reduction in rates on customer-dialled calls of over 400 miles within the network. At the same time, TCTS replaced the three-minute minimum calling charge with a one-minute minimum for direct dial calls.

TCTS companies have invested \$7,500 million in their facilities and during 1973 expect to spend an additional \$1,000 million. Gross revenues for 1972 were about \$1,700 million.

In 1972, TCTS members continued their program of installing electronic switching systems in several Canadian centres. With computers controlling their operation, electronic switching systems can be expanded by enlarging the computer programs. The computer also makes it possible for one telephone to do the work of many more complex pieces of equipment.

Other services have been developed to meet specialized needs for voice-only communications. These range from aids to the handicapped to services such as wide area telephone service and Voicecom for business firms.

Hot-line service. A service introduced in 1969 by CN-CP Telecommunications and Western Union is the hot-line service whereby companies in Toronto or Montreal may talk to their offices in New York City by simply picking up the handset of the telephone. When a customer picks up his handset, the exchange equipment will select the corresponding telephone at the other end. Subscribers are charged on a time-used basis.

Wide area telephone service (WATS), provided by TCTS companies, is designed for customers who make or receive many long distance calls to or from many points. WATS allows a customer to call, or to receive calls from, anywhere within one of seven zones for a flat monthly rate. These areas range in size from part of a province to all of Canada.

Voicecom service. Single-digit dialling is the main feature of this service offered by TCTS. Voicecom provides voice-only communication between specified locations via the public telephone network on a pay-as-you-use basis. By dialling a single telephone number, a Voicecom customer can reach as many as ten telephones subscribing to the same service.

16.1.1.2 Record communications

Public telegraph service. Canada's telegraph systems are operated by CN-CP Telecommunications. This company, a fusion of the telecommunications branches of the Canadian National and Canadian Pacific railways, operates telegraph offices in all ten provinces and in the Yukon Territory and Northwest Territories. Messages can be forwarded or received from any point in Canada or throughout the world via the overseas cable services. Messages are transmitted by cathode ray tube (CRT) teleprinter and facsimile equipment and telegraph networks over which the flow of public messages is controlled by computers. Messages are taken in and forwarded automatically in accordance with special programs stored in the computer's memory. The computer determines where the message is to be sent and sends it as soon as the circuits are free.

The most recent innovation is the use of cathode ray tube displays at all the larger message centres. Basically, CRT displays have television-like screens placed above a keyboard similar to a typewriter which is connected to the message-switching computer. As the operator receives a telephoned telegram message, she types it on the keyboard to read the message back to the caller and, with editing capabilities built into the displays, may make changes to the text if required. When the message is confirmed, the push of a button sends it into the message-switching computer for transmission to its destination.

Telex, the largest teletypewriter service in Canada, is also provided by CN-CP Telecommunications. Its network of 25,000 subscribers in Canada interconnects with the Western Union and RCA Alaska Communications Telex networks in the United States and with European and world-wide networks of more than 420,000 subscribers in 177 countries. Telex is a direct distance dial teleprinter system which permits a subscriber to directly dial any