discuss their affairs without the inconvenience and expense of travel. Radiotelephone installations link travellers with the regular telephone network, providing mobile service for such users as highway departments, trucking and construction firms, fire and ambulance services and police departments. A pocket radio signaller carried by a person temporarily leaving a telephone instrument area will indicate an incoming call requiring his attention.

Improvement and extension of local and long-distance telephone services continue to absorb the bulk of invested money and labour. However, the increasing mechanization of government and business operations and the resultant need to transmit large volumes of information at economical rates have led to the accelerated development of machine-to-machine communication. The growth of such communication in the past few years has been made possible to a large extent by the introduction of Data-Phone data sets which convert the electrical impulses from business machines into tone-signals acceptable to telephone circuits. A Data-Phone data set at the receiving business machine re-converts the tone-signals into machine language. Data-Phone service is now used in conjunction with a variety of business machines to send information from punched cards and from paper or magnetic tape.

Several optional services introduced recently provide great flexibility for machine-to-machine and voice calling over long distances. Wide Area Telephone Service extends a customer's flat-rate calling to telephones within seven progressively wider zones, the largest of which includes the whole of Canada. Telpak, a new private line intercity service, is now available to organizations which transmit large volumes of information requiring an exceptionally broad band of frequencies, such as data from advanced computers and high-speed facsimile equipment. It may also be used to carry simultaneously many smaller loads of information, such as voice calls and teletypewriter messages, which require relatively narrow bands of frequencies.

Many new services for business use were introduced by the industry in 1962. Among these was an electronic facsimile service which transmits or receives letter-size hand-written or printed messages, charts or drawings over the regular network or private lines. Dial Teletypewriter Exchange Service (TWX)—also made available in 1962—transmits typewritten information and certain low-speed data over the regular telephone network. Handwritten messages or sketches can be transmitted over private lines, or over the regular telephone network, in conjunction with Data-Phone data sets.

A recent product of Canadian telephone research which has been quickly accepted by business customers is known as Business Interphone, a versatile, hands-free intercommunication system and regular telephone service in a single instrument. Centrex, designed for large customers, permits outside calls to be dialed straight through to an extension without being relayed at the switchboard of private branch exchanges. A complete intercommunication system is available for use in the home and in small businesses. A special type of telephone has been introduced for hard-of-hearing users. Another new service is an automatic dialer which can retain up to 290 telephone numbers in its electronic memory. Canadian telephone research laboratories are working on basic research in such fields as electronic circuitry, microminiaturization, solid state physics and ferrites. Applied research has concentrated on meeting the needs of Canadian subscribers for modern data communications and telephone service.

The northward extension of industry in Canada has, of course, required the northward expansion of telephone communications. The British Columbia Telephone Company operates a tropospheric scatter system from Port Hardy to Annette Island. Alberta Government Telephones, in conjunction with Saskatchewan Government Telephones, recently completed construction of a microwave transmission system from Uranium City