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Canada's telecommunications industry develops into world leader

Canada's vast distances and relatively sparse population plus large urban centres scattered across the land have meant that communications links have become extremely important to the well-being of the nation. As a result, Canada has developed technologies that have given it a reputation as a world leader in the highly sophisticated telecommunications industry.

Canada has three separate and complementary microwave systems across the country from east to west, as well as a domestic satellite communications network with more than 100 satellite earth stations. There are over 160,000 kilometres (100,000 route miles) of microwave system connecting Canadian communities.

Canada's telephone network, which connects more than 19 million telephones, is rapidly converting to the digital mode to take full advantage of the reliability and economics of this new technology. Canadian telephones in service are more than 60 *per* 100 population, making Canada number four in the world in terms of number of phones *per* 100 population.



A receiving dish at Telesat Canada's network television station in Qu'Appelle, Saskatchewan.

Two geostationary satellites provide effective and reliable communication services to the entire country, reaching the most remote areas of northern Canada. The Telesat domestic satellite system will soon be operating one of the first 12/14 gigahertz (GHz) commercial communication satellites. This will be followed by the *Anik-D*, a new design of the 4/6 GHz satellite series.

The challenge to meet the needs of the rural subscriber has been met by the employment of VHF, UHF and microwave technology where the traditional wireline telephone service cannot be extended economically. Canada operates the world's largest mobile radio system with 23,000 subscribers, primarily serving the Canadian petroleum industry in western Canada.

Telephone sector

A complete line of digital switching systems are among the most important high technology exports from Canada to the United States and abroad. Canada has earned a world reputation for excellence in the supply of telecommunications equipment such as PBX, data and voice transmission systems and custom integrated circuits for the telephone sector.

Among the most significant of these technological developments are the digital exchange switches, designed for both remote and densely-populated urban centres as well as for international gateway applications. These switches and sophisticated new transmission techniques are providing the backbone of the Canadian communication networks of the future. They have proved to be reliable, efficient and can operate in only a fraction of the space required by earlier electro-mechanical equipment.

Digital switching capability is gradually being extended into rural areas through the employment of remote line modules homing onto a parent switcher, thereby extending sophisticated urban-grade communication areas up to 80 kilometres (50 miles) away.



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