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Staying on the leading edge of information and telecommunications technologies is essential to building an infrastructure that makes countries competitive in international markets. Working from a sophisticated base in Canada, Canadian companies have helped upgrade information and telecommunications systems around the world.

Canadians have been setting the pace in some of these industries for more than a century. The very first telephone call was placed in Canada by Alexander Graham Bell, the Canadian inventor of the telephone. Canadian information and telecommunications companies have built on these kinds of historical achievements. They have remained innovative and cost-efficient and continue to win large numbers of foreign contracts, many of them in the highly competitive U.S. market.

One need only look at a map to see that Canada's communications systems have had to overcome challenging geography and climatic extremes. They have done that successfully. Canada's recent telecommunications breakthroughs have coincided with advances in information technologies that include software products, computer services and new media, geomatics products, computers, peripherals and instrumentation, and electronic components.

**CANADA'S  
TELECOMMUNICATIONS  
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WIDER ARRAY OF SER-  
VICES TO A BROADER  
BAND OF CUSTOMERS  
THAN IS AVAILABLE IN  
ANY OTHER COUNTRY  
IN THE WORLD.  
VIRTUALLY EVERY  
HOUSEHOLD IN  
CANADA IS CON-  
NECTED THROUGH  
TELECOMMUNICATIONS.**

## TELECOMMUNICATIONS

In 1994, the U.S. Mesa Research Group ranked Canada first in both the comprehensiveness and the quality of its telecommunications systems when compared with the United States, Japan, the United Kingdom, Germany and Singapore.

Canadians are the heaviest users of telephones in the world; 99 percent of households have telephones, and 92 percent have access to multiple television channels through cable networks. As well, more than 90 percent of Canadian telephones have been digitized.

Coast-to-coast fibre-optic networks provide a full range of commercial services, as well as the necessary bandwidth required to develop and test tomorrow's high-speed multimedia services. The National Test Network (NTN), the world's longest asynchronous transfer mode (ATM) testbed, spans 6000 km and includes international connections to U.S. and European research networks.

Companies in Canada are active around the world in countries such as the United States, the United Kingdom, Brazil, China, Thailand and the Philippines, installing the same kinds of efficient communications networks that Canadians have come to depend upon.

Canadian telecommunications "firsts" have included:

- THE WORLD'S MOST POWERFUL GEOSTATIONARY MOBILE COMMUNICATIONS SATELLITE (1996)
- THE WORLD'S MOST COMPREHENSIVE FIBRE-OPTIC NETWORK (1994)
- THE WORLD'S LARGEST POINT-TO-POINT ATM NETWORK (1993)
- THE WORLD'S LARGEST CONTIGUOUS CELLULAR NETWORK (1990)
- THE WORLD'S FIRST NATIONAL GEOSTATIONARY SATELLITE (1972)
- THE WORLD'S FIRST PACKET-SWITCHED NETWORK (1972)
- THE WORLD'S FIRST DOMESTIC DIGITAL MICROWAVE NETWORK (1971)

More than 90 percent of Canada's telephone network has already been digitized.

Over the next 10 years, Canada's local and long-distance networks will be upgraded in interactive, two-way broadband capacity. When the upgrading is complete, 80 to 90 percent of all businesses and homes in Canada will have access to the multimedia traffic lanes and technologies of the information highway. Canada's goal

