Mobile radiotelephone, a necessity for police, taxis and many other services, is an important modern means of communication, but its use has been limited because of a crowded radio spectrum in urban areas. Within the next two years, however, Canadians will have access to a superior kind of mobile service — cellular mobile radiotelephone — made possible by advanced computer and radio communications technologies. Cellular mobile radio can offer convenient, private and high-quality mobile telephone service to several hundred times more subscribers than conventional systems.

A conventional mobile system uses a single high-powered transmitter to cover a large geographical area, up to 50 kilometres in radius. Each call is assigned successively through the service area until all available channels (typically only about 25) are busy. As a result, only a few subscribers can use the system simultaneously and, during periods of heavy demand, subscribers may have to wait some time for an available channel. Such a system cannot easily be expanded; and transmission quality decreases drastically with the distance of the mobile unit from the base station.

In contrast, cellular systems break down large areas into small "cells" with radii of between 1.5 to 15 kilometres in diameter. Each cell is equipped with one low-powered base station linked to a public-switched telephone network (a transmitter receiver). A master computer automatically tracks the location of each mobile telephone, assigns users to available radio channels in the proper cell, automatically reassigns frequences as mobile units move from cell to cell, and compiles billing information. The configuration permits frequency re-use, multiplying the number of channels available and allowing interconnection with the public-switched telephone network.

The radiotelephone is given a regular telephone number. Two-way conversations either between two mobile units or between mobile and regular telephones can continue uninterrupted as the user moves from cell to cell throughout the entire cellular area.

Two national cellular mobile radiotelephone systems are being established in Canada: one operated by local telephone companies; the other by CANTEL (Cantel Cellular Radio Group Incorporated) of Montreal. The two systems will be fully compatible with each other and with similar systems in the United States; both will be connected to the public-switched telephone network. It is expected that cellular radio service will become available in 23 cities throughout Canada in 1985 and will eventually expand to many smaller communities as well as along major transportation corridors.

It is estimated that the industry will generate gross revenues of $180 million a year by 1990 in Canada. The world market is estimated to reach $10 billion annually by 1990.

Future enhancements of the system may include such services as call transfer and forwarding.

Cantel Inc. will launch Canada's first cellular telephone service in the Montreal and Toronto markets on July 1, 1985.