



*Many Canadian supermarkets, such as Steinberg's, have introduced computerized check-out counters which can automatically identify the "universal product code" now found on much merchandise.*

services. Some Canadian salesmen, for example, now use cassettes to record customer requirements and use acoustic couplers to transmit the information by telephone to their company computer. A few computer service bureaus now offer an "electronic mail box" service. Electronic mail is faster than traditional mail, and its costs are already competitive.

Word-processors can simplify enormously the preparation and processing of correspondence, purchase orders and invoices. The electronic mail capabilities of the digital networks of the future will enable the easy transmission of such material to other locations. File clerks may be operating a terminal which permits the storing and retrieval of documents in a computer. Systems for transferring funds electronically will automate the financial side of a business. Forecasters predict that the average annual increase in purchases of such equipment will be 32 per cent over the next five years. As data communications, data processing, word processing, electronic mail and electronic funds transfer functions all blur together, business offices could become multifunctional work stations located in employees' homes. Commuting might become a thing of the past in an age of energy scarcity and enhanced computer communications.

Canadian economist Stephen Peitchinis recently estimated that one half of all the technical changes occurring in Canadian industry were computer-related. Resource industries were particularly affected. Various processes in the Canadian pulp and paper industry are now electronically controlled. Computer-simulation models and computer communications have already played an important role in a major oil find in western Canada. Computer simulation models developed by the University of Alberta can also play a significant part in determining how best to extract the oil.

Computers, almost since their inception, have been used in Canada for engineering design. Automated drafting systems are a commonplace in many manufacturing plants, development laboratories and architectural offices. Printed circuit boards, bottles and jet engine impellers are only a few of the manufactured goods



*Computer terminals are an increasingly common sight in many of Canada's chartered banks, permitting instantaneous recording of transactions. Automatic cash dispensers and inter-branch banking are other popular, new features.*

designed by computer in Canada. The computerization of production, material and inventory control has long been an accepted practice in Canadian industry. Computers are providing on-line direct control of machine tools used in manufacturing. About 1,500 numerically controlled machine tools are in place in Canada. The trend to electronic control is spreading to metal-cutting equipment and such processes as flame cutting, brazing, plating, welding, flow soldering, pattern and fabric painting and spray painting. The Canadian Pacific Railway (CPR) shops in Winnipeg use industrial robots and other computerized machine tool combinations. Government officials anticipate the first fully automated factories by about 1985.

The digital revolution will move growing numbers of Canadians from production jobs to information-related jobs. With 40 per cent of its work-force employed in information-related activities, Canada has an information-intensive economy and is second only to the United States in this respect. In the next few decades, some predict that three out of four Canadians in the labor force may be working in information. The structural changes in the Canadian economy will be enormous, and have already begun. Perhaps the Science Council of Canada sums it up best: "Just as the introduction of electricity had profound impact on mankind, so the introduction of the new information communications leads to developments that strain our powers of projection. One could, however, attempt to list the uses of the new technology and the ways in which it will transform society. Such a list would reach into almost all aspects of life, almost all industries and professions."