The Toronto Stock Exchange is linked by computer to 750 terminals throughout North America. It provides the exchange's traders with up-to-the-minute reports on a wealth of financial and business events.

monitoring of homes for fires or burglars. In order to improve the quality of its expanded services, the same company also developed packet-switching hardware which is now being sold abroad.

The computer inside the Toronto Stock Exchange is linked to 750 terminals throughout North America. As well as price quotes, statistics, previous trades and group comparisons on stocks, bonds, options, commodities, and U.S. mutual funds, the system provides commission calculations, full inquiry and response capabilities for all customers and complete wire service information.

Air Canada, Canada's government-owned airline, developed in the early Sixties one of the first commercial on-line real-time computer systems. Reservation clerks at all major airports and downtown centres have direct access to terminals hooked into the system. The system is also hooked into a computerized clearing house which makes reservations on other airlines.

The tellers in nearly every branch of Canada's five largest chartered banks (Royal Bank of Canada, Canadian Imperial Bank of Commerce, Bank of Nova Scotia, Bank of Montreal and Toronto-Dominion Bank) have access to computer terminals to register instantaneously deposits, withdrawals and other transactions. Automated "cash dispensers" are becoming increasingly common, as is automatic payment out of pre-authorized accounts. Inter-branch banking, by which a customer may pay into or withdraw from his account at any of a bank's branches, is being introduced, while computerized inter-bank clearing houses are in the planning stages.

The original stimulus to branch bank computerization may have been the continuing rise in the number of cheques issued and, as a result, the increasing difficulty of handling so many paper transactions. Now bank credit cards — based on computerized information systems — are beginning to cut down on the increase in cheques issued. There is some pressure now to introduce "debit cards". These would have a certain value and fall with each purchase. Some experts envisage a cashless economy in the future.

The technology exists now to enable the electronic transfer of funds. Some Canadian supermarkets are using automated check-out counters to identify goods by the "Universal Product Code" now found on much merchandise. The system provides automated inventory control, credit authorization and information on the customer's record. Consumer organizations have, however, expressed concern about potential abuses.

In Toronto, customers can telephone the computer at the Simpsons-Sears department store. The computer orally gives the customer instructions on how to get information on the goods to be purchased. The customer then places an order with an ordinary touch-tone telephone. He can choose to have his account debited directly or have the merchandise delivered C.O.D. He can even give limited instructions about the place and timing of the delivery.

The traditional cash register is also beginning to give way to new point-of-sales terminals. When networks for transferring funds electronically come into existence, these terminals will debit a customer's bank account for the price of the purchase. Some point-of-sales terminals are also capable of automatically initiating the re-ordering of goods when their supply falls below a certain level.

Eventually, when these terminals are directly connected to automated warehouses, re-ordering may become fully automatic, as will the electronic transfer of funds to the wholesaler.

Most major Canadian libraries now belong to one or more national and regional computer-communications networks which have sprung up in the last decade. These information retrieval services provide access to a host of computerized bibliographic data banks, many of them Canadian. The library loan function has also become automated, as has book-ordering and cataloguing in many cases. Without computer communications, it seems doubtful that Canadian libraries — many of them with limited budgets — would have been able to cope with the information explosion without some reduction in service. The new intelligent terminals have meant most Canadian libraries can share a central computer facility with many other libraries and users. Some librarians see the possibility of the electronic book, which could be transmitted from the library over a digital network to the user's home computer.

Business and government have been affected by the computer communications revolution. Automatic word processors — computerized systems for printing, storing, transmitting and recording words — will soon outsell typewriters in Canada. In 1981, CNCP Telecommunications plans to introduce its Infotex system, a national network of word processors, rendering electronic mail a reality. Facsimile printers, renting for under $200 a month, may also serve as electronic mail terminals. Many organizations already have internal computer message