

product lines for relatively small domestic and overseas markets.

Out of the seven sub-sectors listed on page one, the Geological/Geophysical Apparatus and Services is the most competitive in the international markets. The companies in this sector use electrical and magnetic methods (airborne and ground) to compile data on the composition of earth, which is then analyzed to produce maps for mineral, environmental, geothermal, groundwater and oceanographic applications. Some of these techniques have found use in gas/oil explorations. In mining geophysics and mineral explorations Canada plays a dominant role. Canada accounts for about 15% of global expenditures in mineral explorations surveys and for 66% in world airborne services and has strong presence in geophysical software development, geological/geophysical instrument manufacturing and data analysis and interpretation.

Canadian geological/geophysical instrumentation manufacturers have captured approximately 70% of world markets. The sub-sector companies export over 60% of their output and allocate from 10 to 20% of gross sales to R&D. There are over 50 individual firms offering a complete range of equipment, services and geophysical software. The average employment per company is 20 to 30, except for Scintrex, a dominant company, which employs close to 150. World class Canadian software developers, Geosoft being one of the top three in the world, have made a significant contribution to Canada's reputation and to the competitive position of the geological/geotechnical sub-sector at large. Canadian data interpretation companies have captured over 50% of the world markets. In addition to the mining industry, the end users of these companies include petroleum and gas industries.

Main foreign competitors in geology/geophysics applications are France and Australia and, to a lesser extent, USA, Sweden and Japan. France, Australia and Sweden have recently acquired important Canadian firms (Geoterrex, Geonics and Questor). Australian industry and public institutions have made important gains and are now challenging Canada for the technological leadership in many areas of commercial applications of geosciences.

There are also several strong export performers in analytical instruments and in environmental monitoring and control including detection of toxic gases and radon gas. The remaining instrumentation sub-sectors, primarily industrial process control, building automation and analytical instruments are dominated by Canadian affiliates of multinational corporations. The marketing and sales functions of these corporations usually focus almost entirely on the domestic market. The remaining companies in this group are Canadian owned, and most of them are niche markets suppliers which in order to generate sufficient revenues have become global suppliers.