other departments and agencies. The branch also forecasts potential impact of scientific and technological advances upon Canadian society and environment.

A university branch advises government on general policy affecting federal support of university research and is a link between the government and the university community.

R&D in industry 9.3

Industry, performing about 44% of all Canadian R&D, is the largest performing sector. This is 13% more than the combined total of provincial and federal governments and 19% more than the university and private non-profit sectors.

Canadian industrial R&D effort, however, falls well behind most other industrialized countries when R&D expenditures are compared to gross domestic product (GDP). In fact, the ratio of Canada's GDP to R&D is only 30% to 50% of the ratios for the Federal Republic of Germany, Sweden, the United States, France and Japan.

Most industrial R&D is performed by a small number of firms. In recent years, the 25 leading performers have accounted for more than 50% of Canadian R&D spending; the first 200 performers spent approximately 88% of all such money.

Not only is R&D spending concentrated in a few companies but it is concentrated regionally. Ontario and Quebec account for 85% of current R&D spending. Another 13% is spent in British Columbia and Alberta, and the remaining 2% in other provinces.

Industry's total R&D spending increased from $132 million in 1959 to $950.2 million in 1977. But in terms of constant dollars, although R&D spending increased rapidly during the early 1960s it has since slowed to an almost static level.

Canadian industry finances much of its own R&D. In 1975 reporting companies provided 73% of R&D funds; 11% came from the federal government; 9% from other Canadian sources; and 7% from foreign sources. Foreign sources are mainly parent or affiliated companies. The proportion of funds coming from each of these sources has not changed much in recent years. Most federal government financial support goes to aircraft and electrical products industries.

All industries do not have the same need for R&D. Some, like electrical products, compete largely through new products based on R&D. Others, such as food and beverages, rely more on advertising and style than on R&D. Furthermore, subsidiary companies may rely on foreign parents for most R&D requirements. For example, Chrysler, Ford and General Motors in the United States together spent $2,462.6 million on R&D in 1976, four times as much as all Canadian industry. The different R&D intensity of industries is illustrated by the following percentages of non-government financed R&D to manufacturing value-added for 1974: electrical products 4.6%; petroleum and coal products 2.8%; machinery 2.5%; chemical and chemical products 2.1%; primary metals 1.4%; transportation equipment 0.8%; paper and allied products 0.6%; food and beverages 0.3%; and metal fabricated products 0.1%.

Provincial agencies 9.4

Economic planning 9.4.1

Nova Scotia set up a voluntary planning unit, an organization representing non-government elements of the community, in 1963 to involve the private sector in economic and social development.

The organization has: sector committees representing grass roots elements of producers, private business, labour and government in agriculture, construction, fisheries, forestry, mining, tourism, transportation and secondary manufacturing; advisory councils in consumer affairs, education, energy and labour-management affairs; a provincial planning board made up of sector and council chairmen plus other representatives of business, labour and government; and a small professional staff which provides administrative and technical support to volunteer groups.

The unit facilitates identification of problems by the private sector and relates appropriate private and public resources in an attempt to resolve these problems; and