

Scientific activities

14.1

Science and technology (S&T) is a term used to encompass activities which involve the generation, dissemination and initial application of new scientific knowledge and technology. Research and development (R&D) is creative work undertaken on a systematic basis to increase the stock of scientific knowledge and technology.

Federal expenditures

14.1.1

Total government expenditures for science and technology were estimated to be \$2,094 million in 1980-81, compared to forecast expenditures of \$1,884 million in 1979-80, an increase of \$210 million or 11%. The data on S&T expenditures for three years up to 1980-81 are given in Table 14.1.

Some 47% of the total increase in 1980-81 S&T expenditures is accounted for by three areas. The increase for energy, mines and resources is estimated at \$24 million, with \$13 million for energy. The \$30 million increase for industry, trade and commerce includes a \$26 million increase in industry support programs. The \$42 million increase in the budget of the Natural Sciences and Engineering Research Council was announced late in 1979. These three areas plus the National Research Council account for almost 60% of the recent increase in S&T expenditures.

The government's expenditures on S&T according to performer sector are shown in Tables 14.2 and 14.3. These tables include R&D and related scientific activities (RSA). Extramural expenditures for non-government bodies were expected to show an increase of \$95 million from 1979-80 to 1980-81: \$23 million in industry, \$64 million in universities and \$9 million in the provincial sector. A statistical summary of federal scientific expenditures by application area is given in Table 14.5.

Communications

14.1.2

New technologies such as lasers, fibre optics, micro-computers, large scale integration and videodisks are the ingredients of what has come to be known as the information revolution. These ingredients make it possible to provide nearly universal access to a myriad of new computer-based information services. The development of Canadian communications is the responsibility of the department of communications (DOC) and the majority of the government's expenditures occur in this department. Other agencies playing a role in communications science are the National Research Council (NRC) and the Canadian Broadcasting Corp. (CBC).

The most striking aspect of the new electronic information systems and services is the speed with which they have developed. Ten years ago they were still dreams for the future. Now combined computer-communications systems are spinning a web of services around the globe.

In the light of these factors, DOC has established the objective of channeling the communications revolution to the benefit of Canadians as its highest priority and works toward these objectives: achieving the most rapid feasible expansion of services and systems without prejudice to other social priorities, ensuring equitable distribution of services to all social and regional groups, ensuring adequate Canadian control and ownership, protecting right of access, protecting privacy, and protecting freedom of speech.

Videotex is a generic name for systems which permit a residential or business subscriber to use a suitably modified television set to access information stored in a central computer data bank, or to cause information to be transmitted to the computer or to another terminal. Information transmission can be via a telephone line, a cable system, optical fibre or radio transmission. The development of a Canadian videotex system called Telidon was first announced in August 1978. Its development arose out of