

2.0 NORTH AMERICA

2.1 UNITED STATES OF AMERICA (NATIONAL OVERVIEW)

The United States, with a GNP of over \$4 trillion, is the largest and most diversified economy in the world. It spends about 2.8% of its GNP on R&D; the government and industry finance about equal shares (48%) of R&D, but industry actually performs about 70% of the R&D. When defence R&D is deleted, the United States spends about 1.8% of GNP on R&D. ● ●

The United States has about 66 R&D scientists and engineers per 10,000 population, equal to Japan and far ahead of other industrial countries. In industry, R&D is geographically widespread. American post-secondary education in terms of production of research and graduates is second to none in terms of quality. The United States does however face an increasing shortage of scientists and engineers making it a potentially large "sink" for highly qualified personnel trained elsewhere.

TECHNOLOGY TRENDS

The United States does not have an explicit industrial or technology policy. The United States federal government views its role in S&T as having two primary goals: (1) to support basic research, including academic research, where there is no economic motivation for industry to undertake the work on its own; (2) to fund R&D for national security purposes (the definition of national security is increasingly being broadened). Officially, all other civilian R&D is best determined and financed by the private sector.

The United States is active in all areas of R&D, and continues to lead the world in most sectors but one notable area of weakness is the consumer electronics industry where the United States companies have been unable to compete successfully with other countries, especially Japan, even though it can lay claim to most of the basic innovations in the industry.

TECHNOLOGY STRENGTHS

The United States leads or is competitive in virtually all areas of technology. It has clear leadership in space and aerospace and related fields. Many of the most innovative companies in biotechnology, pharmaceuticals and medicine are American. It continues to lead in basic computer technology, especially in development and production of CPU's and specialized chips and clearly leads in computer software.

Many of the areas of United States strength are led by industry but there is often a large direct or indirect assistance from government programs such as the Department of Defence, the United States Space Program, the research work conducted or funded by the National Institutes of Health or the National Laboratories of the Department of Energy. In the future, these and other