

8 Technology

1. R&D Investment

Japan's total fiscal 1998 R&D investment in the info-communications field (comprising the telecommunications equipment, electronics, electronic instruments, and software industries, as well as telecommunications carriers) amounted to ¥3,298 billion, up 6.3% year over year; the annual figure has been rising since fiscal 1994. Additionally, R&D investment in the info-communications field accounted for 30.5% of all-industry R&D spending, a proportion that has also been rising since fiscal 1994 (Exhibit 42).

2. International Comparison of Info-communications R&D

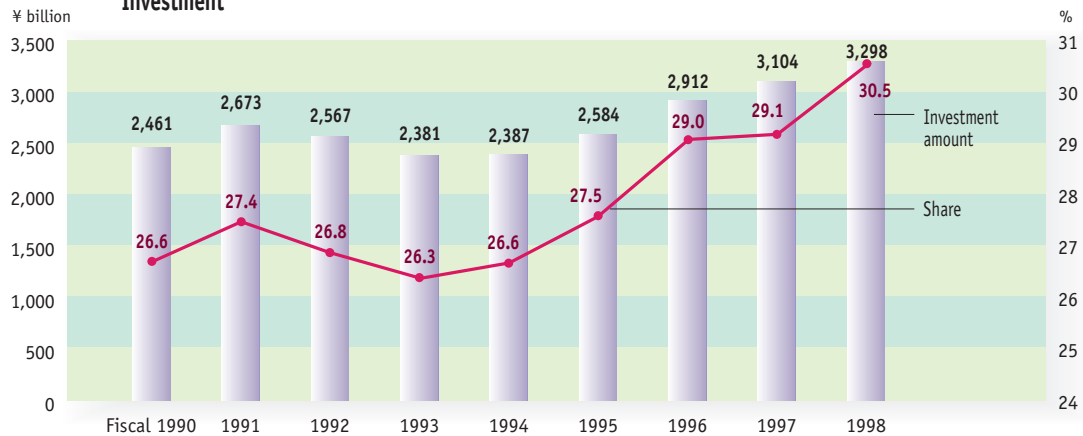
Survey of the R&D Environment in Info-communications reports that respondents found US R&D in general and in all individual areas except terminal technology superior to that of Japan and

Europe. The United States was considered far superior in networking technology, content support technology, and satellite network technology. Japan was considered superior to Europe in all areas.

3. Industry-University Tie-ups

Cooperative tie-ups between the corporate and academic worlds are expected to draw out the scientific-research potential of universities and contribute to the creation of new businesses, ultimately bringing the results of university research to practical use in society at large. *Survey of the R&D Environment in Info-communications*, which was directed toward researchers in universities and companies, found that as many as 44.9% of joint research projects in info-communications done at universities and 33.4% of joint research projects in this field done at companies in fiscal 1998 involved industry-university tie-ups.

Exhibit 42. Trends in R&D Investment by the Info-communications Sector and Its Ratio to Total Industrial R&D Investment



Sources: *Report on the Survey of Research in Science and Technology*, Management and Coordination Agency; *Report on the Survey of Facilities and Equipment Investments in the Info-communications Industry*, MPT.