

# Japanese R&D spending defies recession

[TOKYO] Despite being hit by its worst economic crisis since the Second World War, Japan's overall industrial research spending is rising steadily, according to a survey released last week by the Science and Technology Agency (STA).

The survey, based on data from more than 1,900 companies, says the total spending on research and development (R&D) for the 1997 fiscal year, which ended in March 1998, increased by 8 per cent from 1996, marking the third consecutive year of growth in industrial R&D expenditure (see graph).

The increase was centred on medium-sized and large companies with annual R&D budgets of more than ¥3 billion (US\$21 million), and on the transport and electronics sectors, which increased spending by 22 per cent and 12 per cent, respectively. Most companies with a budget of less than ¥3 billion have scaled down their R&D expenditure with the weakening of the Japanese economy, however.

The survey also says that Japanese companies have started to give more priority to R&D as part of their corporate strategy. Almost 90 per cent of companies surveyed have reorganized their R&D strategy in the past three years, of which 70 per cent —

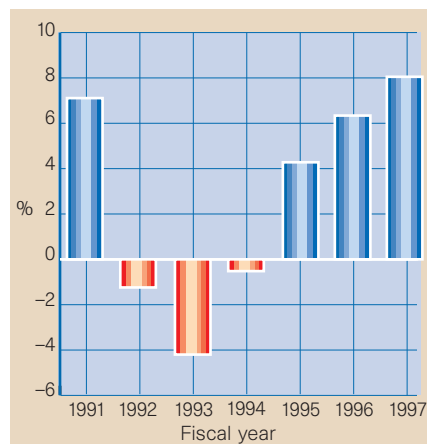
mostly in the transport, electronics and communications sectors — have made R&D their top priority.

This trend has been confirmed by a recent survey on corporate R&D by the daily business newspaper *Nikkei Sangyo Shimbun*, which indicates that more than 75 per cent of 442 companies surveyed claim to have increased their emphasis on R&D since 1995.

In both surveys, companies cite the development of innovative technologies and the creation of products that meet their market needs as the main reasons for raising the priority of R&D. Factors such as strengthening basic research and diversification of research areas were deemed less significant. This reflects the fact that companies' increased support for R&D is driven by their desire to strengthen application-orientated research.

Reiji Sano, managing director of Matsushita Electric Industrial Co., agrees that an increase in R&D expenditure has been accompanied by a shift towards applied research. "We are focusing our effort towards developing new technologies," he says.

STA warns in its report that the economy has deteriorated further since the survey was conducted early this year, and cautions that the actual increase in R&D spending for the



Rising sum: yearly increases in R&D spending.

full financial year may have been slightly less than that reported. But most companies say their R&D budgets remain relatively unscathed, despite the deepening recession.

According to a spokesman for the electrical manufacturer NEC, which increased its R&D budget by 9.4 per cent this year, the investment was planned on a 20-year basis and is unlikely to be affected by movements in the economy — "unless our profits really do plummet".

Asako Saegusa

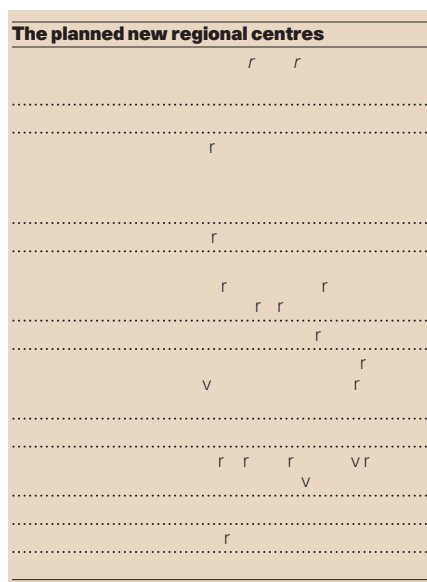
## Massive jobs shake-up as China reorganizes science academy

[BEIJING] Up to 20,000 researchers will be retired or transferred from their jobs within three years in the first phase of a dramatic reorganization of the Chinese Academy of Sciences. Only 10,000 research staff will be retained at the reformed institutes.

The president and five vice-presidents of the academy met in Huairou outside Beijing in the first week of August to thrash out details of the first phase of the planned reorganization of all the academy's 123 institutes and 68,000 researchers. The changes over 13 years will drastically reduce the number of full-time researchers and institutes and bring in new blood from outside (see *Nature* 394, 7; 1998).

It was decided at the meeting — but has yet to be officially announced — that in the first phase, lasting until 2000, 12 regional bases or centres will be created, or partially created, rather than the eight provisionally announced in June.

The additions include a centre for mathematical sciences in Beijing, one for astronomy in Beijing (linked to facilities in Xian, Nanjing, Shanghai and Yunnan) and small centres based on individual institutes in Nanjing, Dalian and Beijing. But plans for a south-western base of bioresources and biodiversity centred on Kunming have been postponed until a later stage.



Institutes have been selected to participate in the first phase on the basis of having a proven academic track record, strong leadership, clear academic goals and a history of reform, academy officials say.

Under the initial reorganization, only about 10,000 of 30,000 researchers at the institutes involved in the first phase will retain full-time jobs in the academy. About 10,000 will be retired and another 10,000

will be transferred to other jobs, for example to companies affiliated with academy institutes. Selection of those to be retained will be a "tough job", admits a senior member of the academy.

For example, the 1,900 people employed at the eight institutes that will make up the Shanghai life-science research centre will be reduced to 800 researchers plus 100 administrators and technicians. The institutes currently include the Shanghai institutes of biochemistry, brain research, cell biology, entomology, physiology and plant physiology.

Directors of the new centres will be relieved of administrative duties that are unrelated to research, such as finding nursery schools for researchers' children or accommodation for staff. These tasks will be taken over by a small central administrative unit for a given group of institutes. The directors will assume roles similar to their counterparts in Europe or the United States, concentrating on research management and budgetary responsibility for the institute.

Advisory committees will select directors for the 12 new centres over the next few months. The directors will then choose group leaders, who will have the difficult task of deciding which of their researchers to retain.

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