

Making the market shape research

The Australian government resembles every other in wanting to turn research to profit. Its chief research agency's new policy is a step towards meeting that ambition, but is not sufficient in itself.

In relation to publicly supported research, all governments these days raise the common cry that research should have more immediate economic value. In Australia, with a population about a quarter of that of industrial economies such as those of Western Europe (which are not conspicuously successful), the cry has been amplified in the past year or so by the re-election of the Hawke government, determined (as it seems) to review and modify the working of every important public institution (see *Nature* 316, 185; 1985). The chief research organization, the Commonwealth Scientific and Industrial Research Organization (CSIRO), where pressure has been especially strong, has been a ready target for criticism. It is big, employing a substantial fraction of Australia's researchers, and is moreover still largely cast in the mould of earlier decades, when the universities of Australia were much weaker in research.

The inevitable result is that CSIRO is conspicuous among the public institutions under scrutiny; the government's chief advisory body is due to report shortly. Meanwhile, as if to show that CSIRO is not waiting, fatalistically, for whatever changes may be decreed, it has put out a document, *Shaping the Future*, which shows at least alertness to the Australian government's anxieties. The policies outlined in the new plan will undoubtedly help to forestall criticism. Thus CSIRO says it will look for ways of making its staff more flexible, and in particular to succumb more often to the temptation to work in industry. To be fair, the organization has been grappling with impediments to mobility (such as pensions schemes) for several years, without much help from government. It is, however, well known that the most effective way of "transferring technology", as the saying goes, is to move people. Published digests of "research achievements" by comparison cut very little ice. Maybe CSIRO will now get the backing it deserves; other governments may be tempted to follow suit. CSIRO also promises to be more self-conscious about economic possibilities when embarking on new research and to be more deliberate and systematic in the evaluation of research programmes during their execution. For an organization which confessed earlier this year to not having an economist on its staff, this is also a self-commendation, but one whose weight can be determined only by performance.

The much more serious difficulty is to strike the right balance between the different motivations for industrial innovation and development. What attention should, for example, be paid to industrial companies' assessments of market needs and what to economists' long-term assessments of the pattern of industry? To what extent should a government build mechanisms for seeing that new ideas arising from basic research are indigenously exploited, when it might be easier and more profitable to trade the patent rights? How far should a government go in supporting research intended to strengthen a traditional industry (agriculture, for example, in Australia) and what resources should it spend on seeking a toehold in high-cost high-tech industries in which every other country trumpets similar ambitions but where only some can hope to succeed? CSIRO will no doubt argue behind the scenes that all these questions, nowhere easy, are complicated in Australia by the relics of the industrial strategies of past decades that sought to encourage the growth of Australian industry by constructing shields against outside competition. Is it any wonder that one of the present government's discontents is that commercial companies in Australia spend too little on research? The

obvious snag is that no amount of cleverness in CSIRO laboratories, and no amount of persuasiveness in publicizing the innovations that result, will counteract such disincentives to innovation. The new proposals for counting industrial research spending as a tax-deductible expense worth half as much again may help, but letting Australian industry sense how competition strengthens the need for research would be even more effective. Whether the reforming government will go so far is another question.

Australia's special difficulties are to some extent historical, stemming from CSIRO's past role as virtually the only agency of public research. Everybody will appreciate how difficult it must be for an organization deliberately to relinquish responsibilities it discharges well. Fortunately, there are signs in this brief strategy document that CSIRO is now leaning in the right direction. What remains to be seen is whether the new management in Canberra will be able to turn these general principles into a more pointed pattern of research — and whether the government will allow it the time to do so. □

Fair play for foreigners

Japan is committed to internationalization. But recent events suggest it must look again.

SOME three years ago the Japanese government altered the law in order to permit foreigners to hold permanent posts in the state universities. The change was made partly because there was an awareness in the academic community that Japan was isolated from the tradition of employing talented staff, regardless of nationality, which has done much to enhance the vitality of European and American universities. At the same time the change did away with the difficulties faced by Koreans who had been born in Japan or who had come to Japan during the war.

That Japanese scientists are aware of the benefits of such "internationalization" is clear enough, for a growing number now hold tenured posts in foreign lands. But despite the hopes held out by the change in the law the complementary process — that of giving foreigners full-time employment in Japanese universities — has not made much headway.

In part this reflects language difficulties and the rather rigid seniority system of the state universities which provides few cracks through which those outside might enter. Only one university — Tsukuba University — has done away with the university chair system and, by no coincidence, it also has by far the largest number of foreign staff members. But as events described on p.465 show, problems still remain at Tsukuba. It would seem that some foreign teachers' legitimate concerns for their future security have been thought little of at the university, while other foreigners find they are welcome so long as they remain only for a short period. To the small band of foreigners who work in Japan's state universities these events are important, for Tsukuba has long been seen as the leading proponent of the internationalization of the universities.

The spectrum of attitudes seen at Tsukuba seem well to reflect the deep-seated ambivalence the Japanese themselves feel towards "internationalization". For some years the internationalization of Japanese life has been a topic of endless discussion, although there is far from agreement on what it means. It is