UK science and industry

Cans and can'ts for government

MORE than 200 representatives of British industry, the universities, the City and government gathered in London last Monday for a remarkable one-day seminar on science, technology and industry. The seminar was instigated by the Prime Minister, Mrs Margaret Thatcher, who, anxious to demonstrate her personal concern for the problems besetting British industry, was chairman for the day.

As Mrs Thatcher herself remarked, it must be doubted whether such a distinguished audience has ever been gathered in one place to discuss anything at all, let alone science and industry. It must also be doubted whether many of the participants learnt very much that they did not already know. But the seminar did at least succeed in demonstrating that the problems which have been discussed so often are now being taken seriously.

In her opening remarks, Mrs Thatcher said that government expenditure on research and development (£12,700 million over the past four years) had increased by 8 per cent in real terms compared with the previous four years. And, she said, two-thirds of the defence research and development budget is placed with industry.

Mrs Thatcher also took the opportunity to announce a fact well leaked over the past few months: the British Technology Group will lose its monopoly rights on the development of government supported research. But she insisted that, while the government can create the conditions in which enterprise and innovation can flourish, it cannot substitute for the inspiration of the inventor.

A comparison with Britain's major industrial competitors shows that private industry's spending on research and development is proportionately much less in Britain than elsewhere. The situation can be helped by reducing the burden of taxation so that industry can be profitable, a course the government is pursuing.

Speaking from the point of view of a large company, Lord Weinstock, managing director of General Electric Plc, found wide support for his view that in order to bring an invention from the laboratory bench to the market place, a champion (preferably not the original inventor) is needed to steer it speedily through the successive phases of development.

Lord Weinstock challenged the idea that Britain is uniformly bad at technology transfer: many large companies do expect and get a stream of ideas from their research staff that are the basis for innovation. Many smaller companies work on ideas originating in research laboratories of large companies. But Lord Weinstock warned against encouraging "inward investment" in Britain by foreign competitors on the grounds that the base technology often does not accompany this

sort of investment, which can also exacerbate skill shortages. This, he said, may be happening in "software factories".

Mr J. Harvey Jones, chairman of ICI Plc, one of Britain's most successful large companies, dismissed the suggestion that sources of capital are reluctant to invest in high-risk innovative projects. He stressed that innovation must be accurately attuned to the needs of the market. Several other speakers also took up the theme that inaccurate reading of markets has been the largest single cause of failure in Britain.

Mr Michael Heseltine, Secretary of State for Defence, gave a number of examples of successful "spin-off" from defence technology to the civil sector: these include

Mr Michael Heseltine and Mrs Margaret Thatcher

charcoal cloth, developed at the Chemical Defence Establishment and now used in respirators, and the original concept of the integrated circuit, which came from the Royal Signals and Radar Establishment. But it has too often been foreign companies that have reaped the benefits.

In an effort to increase uptake of defence technologies in the civil sector, the Ministry of Defence will be inviting groups of entrepreneurs with access to venture capital to seek out marketable inventions within its research establishments. The groups include Cogent, Prutec, Lazards and Barclays Bank. Mr Heseltine said that these groups will act as technology brokers between Ministry of Defence (MOD) establishments and high-tech industries. The department also intends to foster more exchanges of people between government and the private sector. Most MOD contractors are large companies which own the intellectual property rights of MOD development. Mr Heseltine said his department would arrange for young small companies, usually most likely to take on high-risk projects, in future to have access to them.

Many of the contributors to the symposium were critical of the education that British universities are offering, but Sir Rex Richards, warden of Merton College, Oxford, insisted that industry can be equally well served by a graduate in physics or a graduate in Icelandic philology. Education is to stretch the intellect, and marketing and design functions should be left firmly in the province of industry. But it should

nevertheless be made easier for university academics to venture into industry.

Sir Clive Sinclair, chairman of Sinclair Research Ltd, one of Britain's most successful consumer electronics companies, presented a thoughtful analysis of the reasons for the relative decline of much of Britain's consumer industry. In the 1950s, there was a huge and growing market for consumer products such as refrigerators and washing machines, but the British public is now sated with such products. Resident expertise in new technologies must be quickly developed.

Sir Clive was one of several speakers to advocate that all higher education programmes should include courses in technology and general business studies. He also criticized existing tax regulations which discriminate against unearned income and argued that existing arrangements for pension funds act as a disincentive to mobility.

Dr Herman Hauser, managing director of Acorn Computers Ltd, made the point that British tax rules made it impracticable to offer employees share options, which they might expect to receive in other countries. This, he said, had been a major problem for his company in attracting overseas design expertise.

Mr Kenneth Baker, "Minister for Information Technology", expanded on the general theme that the role of government is solely to provide the right climate for innovation, and cited as an example the ending by the government of the monopoly of British Telecom. He boasted that cash expenditure on science and technology in the Department of Trade and Industry has steadily increased.

On private support, there was general optimism that, whatever the situation in the past, there are now a number of competent venture capital companies in Britain expert in financing high-risk projects with long lead times. Lord Caldecott, chairman of Investors in Industry, said that staffing costs in such companies are necessarily very high, but are justified by their successes.

Many speakers expressed concern about public provision for university-based research. Professor John Kingman, chairman of the Science and Engineering Research Council, put it most starkly when he said that because of cutbacks in support for fundamental research, Britain is now losing valuable opportunities. Sir Keith Joseph, Secretary of State for Education and Science, had earlier said that he would endeavour to ensure that the quality of provision was not eroded, but that it was necessary to be selective in deciding what areas were most deserving of support.

Many of the themes followed at the seminar cover well-worn ground, and some participants had reservations about whether it had been a useful exercise. But, as one research council officer remarked afterwards, "it will have been worthwhile if ministers get the message about the state of the science base".

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