

US boosts university-industry links

After 18 months' study by the Commerce Department, President Carter last week made 32 proposals for increasing the commercial exploitation of scientific knowledge. **David Dickson reports.**

PRESIDENT Carter is demanding that federal agencies substantially increase their efforts to stimulate links between the university research community and private industry. Building on the recent experience of the National Science Foundation, he has recommended that the government raise its support for such efforts by \$150 million a year.

The recommendation is one of 32 which the President made last week in a message to Congress on new initiatives to stimulate industrial innovation.

Describing the package of recommendations, the fruits of an 18-month study by the Commerce Department, as a "first step" towards meeting the nation's commitment to innovation, he said they would help "the continuing challenge to maintain the economic strength of the US economy."

The review was initially recommended by Dr Frank Press, director of the Office of Science and Technology Policy. Its basic premise was that many of the nation's economic problems can be related to a decline in the rate of productivity; and that this in turn has been partly caused by a decline in innovation, as implied by factors such as declining investment in research and development and a decrease in the number

of patent applications.

Many of the President's recommendations directly involve research. Yet rather than concentrate on ways of increasing direct federal support for research of interest to industry, the President's recommendations focus instead on the environment in which both research and innovation take place — and thus how the government can alter this environment to make it more conducive to economic growth.

The review therefore covered all aspects of the innovation process, from anti-trust policy to technical information systems, making numerous proposals for legislative and administrative changes. In the short-term, however, a principal beneficiary of the review is likely to be the National Science Foundation, budgeted to receive about \$30 million of the extra \$55 million which the President suggested needs to be spent in 1981.

The purpose of the NSF money will not primarily be to support further research — although this will obviously be one effect — but to open up the arteries connecting universities to private corporations. In this way it is intended to help to lead to what Secretary of Commerce Mrs Juanita Kreps referred to as "a more effective partnership

among government, industry, labour, and the academic community."

In particular, the NSF's budget request for 1981 will include a three-fold increase in support of a programme introduced last year to finance research proposals jointly submitted by university and industry research workers. NSF officials point out that the programme, scheduled to increase from \$8 million to almost \$30 million, has already attracted the involvement of major corporations such as Westinghouse, Union Carbide and Monsanto.

President Carter has now suggested that the NSF experience be used as a test-bed for cooperative projects sponsored by other federal agencies, such as the Department of Defense, the Department of Energy and the Environmental Protection Agency, and that an aggregate target of \$150m be eventually aimed for.

Furthermore in view of the historical importance which small entrepreneurial firms have played in bringing new products to the market-place, he is proposing to increase the budget of the NSF's Small Business Innovation Research Programme from \$2.5 million to \$10 million. Again this would be used as the basis of a \$150 cross-agency effort.

"The innovation review makes clear

The new innovation initiatives in detail

SOME of the main initiatives announced by President Carter to spur industrial innovation in last week's message to congress:

- Four "generic technology" centres will be established at universities and other private sector sites to encourage research and development in fields such as corrosion prevention, automated assembly, and tribology. Each centre will be jointly financed by industry and government, with the latter's share dropping to 20% or less by the fifth year. Three centres will be established in 1981 by the Department of Commerce, and one by the National Science Foundation, at a cost of about \$6 to \$8 million.

- The NSF will receive an additional \$20 million in 1981 to increase its efforts at linking industry with university scientists. The foundation will also work with other agencies to initiate similar cooperative R&D programmes, with an eventual aggregate target of \$150 million.

- The federal government will seek legislation to establish a uniform patent policy. Under this legislation, title to a patent resulting from federally-funded research would be retained by the government, but contractors would obtain exclusive licenses in specified

fields of use. Small businesses and universities, however, would be allowed to retain patent ownership "in recognition of their special place in our society"

- The Department of Justice will clarify the role of anti-trust legislation with respect to research collaboration between different companies

- The NSF's Small Business Innovation Research programme will be expanded from \$2.5 million to \$10 million in 1981. The foundation will help other agencies develop similar programmes, under the co-ordination of the Office of Management and Budget, with an aggregate target of \$50 million

- Increased assistance will be provided to establish Corporations for Innovation Development (CIDs) on a state or regional basis, to help entrepreneurs gain access to investment capital

- To help minimise the impact of regulation, executive health, safety and environmental regulatory agencies will prepare five-year forecasts of their priorities and concerns. "Better knowledge of agency plans will allow industry to plan its research and development" says the administration

- In addition, federal executive agencies responsible for reviewing the safety and efficacy of products will develop and

implement a system of priorities. Under these systems, the agencies will identify those products that are most innovative and/or have exceptional social benefits, and expedite their clearance reviews "to the extent permitted by applicable statutes"

- The Secretary of Labour and the Secretary of Commerce will work with labour and management to develop a national Labour/Technology Forecasting System. This system would develop advance warning of industrial changes and permit timely adjustments

- The Commerce Department and the NSF will host a national conference for deans of business and engineering schools to stimulate improved curriculum development in technology management and entrepreneurship

- The National Technical Information Service will establish a new center, at an annual budget of up to \$2 million, whose purpose will be to improve the flow of knowledge from federal laboratories and R&D centres to private industry

- The President will establish an annual award for technological innovation in the six areas of transportation, communication, health, agriculture and food, and natural resources (including energy). The awards will be presented by the President's science and technology adviser. □