

Carter Plan to Spur Industrial Innovation

Elaborate bureaucratic exercise produces small-scale program to revitalize U.S. industry

The innovative spirit of American industry is perceived by some to be flagging, and President Carter on 31 October announced nine prescriptions for the malaise. These include proposals to overhaul the patent system and to fund more joint academic-industry research through the National Science Foundation.

The plan received a muted welcome at its unveiling on Capitol Hill. Senator Adlai Stevenson was incredulous that the full 1981 cost of the innovation program is to be only \$55 million while at the same time the Administration wishes to pump \$1.5 billion into the ailing Chrysler corporation. "What is good for Chrysler may not be good for the United States," quipped Stevenson.

Other congressmen criticized the innovation plan for its lack of tax incentives. "Any proposal which is designed to stimulate the innovative processes in America must, of necessity, address our tax system," stated Representative John J. Falce (D.-N.Y.), adding that the President's other measures would take too long to have impact.

Assistant Secretary of Commerce Jordan Baruch and presidential science adviser Frank Press defended the plan by saying that its impact should not be judged on its dollar value alone, and that tax incentives for innovation would be considered when the President came to review his overall tax policy.

The innovation plan is the fruit of an 18-month long policy review that was sparked by fears that the spirit of Yankee ingenuity, especially in high technology industries, has grown feeble compared with the vigorous innovative tendencies of Japanese and German companies. Since the governments of these countries play an activist role in fostering industrial innovation, should the United States government attempt to do likewise?

The study of this question, coordinated from the Commerce Department by Baruch, involved 28 agencies and some 500 industrial leaders, small business entrepreneurs, labor leaders, academics, and others. This June, Baruch forwarded 41 specific recommendations to the White House. These were reported to include measures such as tax relief for small innovative firms and employee

stock option plans, neither of which made it to the final list. The job of deciding which elements of the Baruch plan were acceptable fell in the realm of chief domestic policy adviser Stuart Eizenstat. Perhaps inevitably, the White House's selection disappointed some of the experts who had helped prepare the Baruch report: "There was a considerable amount of hesitation on the part of some government officials as to what was reasonable and could be accomplished within budgetary guidelines. Others hoped for much more," says one of those involved.

To similar criticisms made by congressmen, science adviser Press replied that the new proposals were intended only as the first step. Innovation, Press said, "has been around for 25 years, it has been studied to death. For the first time, there has now been a Presidential statement. I think this is a major statement and should be treated that way."

The plan announced by President Carter includes the following initiatives:

Generic technology centers. Generic technologies are those such as welding or corrosion control which affect many

industry and academe, begun in 1978, will receive an extra \$20 million in the 1981 budget.

Strengthening the patent system. Who should benefit from patents that result from research undertaken with government funds? A potent argument is that the patent should be free to all since it was derived on public funds. But in practice, entrepreneurs are unwilling to risk developing a government-owned invention unless they can obtain exclusive rights. Because of the difficulty of balancing out these conflicting claims, the issue has remained unresolved for 30 years and agencies have operated under a variety of different policies. President Carter has decided to seek legislation that would establish a uniform government policy. Contractors would obtain exclusive licenses with the government maintaining march-in rights that can be exercised if the licensee fails to commercialize the invention. The President will also take steps to improve the reliability of patents: at present a U.S. patent has less than a 50 percent chance of surviving a court challenge.

Fostering the development of small innovative firms. According to one measure (not cited by the White House) small enterprises produce half of all U.S. innovation but receive less than 3.5 percent of federal R & D funds. To redress the balance, the Carter Administration will raise NSF funds for research by small businesses from \$2.5 million to \$12.5 million. It will also require government agencies to see that small businesses get a fairer share of federal R & D spending. To help small firms with start-up capital, Carter wishes to set up two regional Corporations for Innovational Development (modeled after a successful British institution). Federal support will be in the form of loans of \$4 million per center, with the region providing matching funds.

The innovation proposals were presented to Congress on 31 October before an unusual joint session of four congressional committees. Senator Stevenson observed that the Japanese Ministry of Industry and Trade had just announced its recommended strategy for the 1980's, which included a fivefold increase in government support for the com-

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industries but which do not matter enough to individual firms to encourage innovation. Four centers to develop and transfer such technologies will be set up in 1981, at a cost of \$6 million to \$8 million. They will be jointly financed by government and industry, with the government's share progressively dropping.

Industry-university cooperation in R & D. The strength of American universities "has not been harnessed effectively in promoting industrial technological advance," states a White House fact sheet. An NSF program to foster joint research projects between in-

mercialization of technology in ocean mining, space, energy, and integrated circuits. "Meanwhile, back in the U.S., we are bailing out Chrysler. Are we going to succumb to pressures from the status quo and subsidize geriatric industries, or are we going to subsidize our strengths?" Stevenson inquired.

"We are not here to present the Administration's total economic policy," replied science adviser Press. But, he observed, "American industry leaders would not want the American government to intervene in that way in American industry."

Both the Administration witnesses and their congressional audience appeared to agree on the premise that American industrial innovation is lagging. Senator Gaylord Nelson, chairman of the select committee on small business, noted that manufacturing productivity in the United States increased only 46 percent be-

tween 1976 and 1978, compared with increases of 116 percent in Japan and 75 percent in West Germany. Total R & D expenditures by government and industry, estimated to be \$51.6 billion in 1979, have only recently started to rise after a decline (in real terms) from 1967 to 1975. As a percentage of economic output, R & D in the United States fell 20 percent between 1968 and 1978, but rose by 16 percent in West Germany and by 20 percent in Japan. Patents granted to U.S. residents have decreased every year since 1971, while those granted to foreigners have steadily increased.

This is the gloomy side of the picture. Other statistics tell a brighter story. According to figures in a recent *National Journal* article, the balance of trade in research-intensive industries, such as chemicals, machinery, aircraft, and scientific instruments, has been improving steadily throughout the 1960's and most

of the 1970's. Another measure of how profitably research is put to use is R & D spending as a percentage of value added in manufacturing. Here the United States outperforms its rivals with a measure of 5 percent in 1973, compared with 2.9 percent for West Germany and 3.7 percent for Japan.

Industry representatives have not yet had time to study the proposals in detail. One sentiment is that a healthy economic climate would do more than anything else to help innovation. "If the government will allow us to make a profit, we will innovate," says a representative of the National Association of Manufacturers. The White House's proposals seem to be welcome as far as they go, even if some had hoped they would go further. The mountains of the federal bureaucracy have labored, but will they produce a better mousetrap?

—NICHOLAS WADE

Cracking Down on Illegal Wildlife Trade

The Justice Department estimates that illicit import of live animals may be a \$100 million annual business

Six years after passage of the Endangered Species Act and four after the Convention on International Trade in Endangered Species (CITES) went into force, the federal government is taking serious steps to crack down on illegal wildlife trade in this country.

Officials connected with the effort say that the scope of illegal activities is probably greater than anyone imagined. Tropical birds and reptiles in particular are pouring into the country, either smuggled over the Mexican border or passed through the eight designated ports of entry for wildlife. And federal officialdom has neither the manpower nor the expertise to stem the high percentage of traffic that is illegal.

On 2 October, at the behest of the President, the Department of Justice established a new office, the Wildlife Law Section, to coordinate and step up law enforcement efforts. It is headed by Kenneth Berlin, who has spent the past 6 months looking into wildlife trade and who now estimates that illegal importation of live animals alone is a \$50 million to \$100 million annual affair. No one will yet hazard a guess on the worth of the animal products—such as ivory,

hides, shells, feathers, trophies, and furs—that are coming into the country under less than proper auspices.

The federal government's new interest in stemming illegal trade was expressed in President Carter's environmental message on 2 August, in which he called on the Justice Department to coordinate agency efforts. In background material accompanying the speech, the President put forth the following facts:

- Of approximately 200,000 documented shipments of wildlife into the United States in 1978, some 10 percent contained species listed by CITES.

- Justice Department personnel believe 10 to 25 percent of all shipments of birds into California in the last half of 1978 contained illegally imported species.

Illegal trade in flora and fauna has become an international phenomenon of massive proportions. Diminishing wildlife and habitats combined with human avarice have made such trade ever more lucrative as it becomes increasingly hedged in bylaws. Private collections in this country as well as zoos supply a voracious market for live tropical birds and reptiles. Macaws from South America

and cockatoos from Asia fetch up to \$8000 apiece.

Such trade is now restricted by a network of mutually reinforcing laws—the Convention, which prohibits commercial trade in some species and requires import and export permits for others; the Endangered Species Act, which protects foreign as well as domestic species; the Lacey Act, which makes it illegal to trade in species that are protected by foreign or domestic laws, and antismuggling statutes.

Although the legislative framework is now regarded by most people as adequate, penalties for violations are in some cases so weak that they can often be written off as part of the price of doing business. The main problem, though, is enforcement, a responsibility shared by the Customs Service, the Commerce Department, the Justice Department, the Interior Department, the Agriculture Department, and the Department of Health, Education, and Welfare. Spotting illegal shipments is an extremely difficult matter. To take one example, Agriculture Department inspectors are responsible for examining incoming plants and some animals for the presence of pests and dis-