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SCIENCE

The Federal Government and Innovation

In the recent third annual AAAS R & D Policy Colloquium, "R & D in the Federal Budget," about half the agenda was devoted to university-government relationships, the other half to industrial research and development. Attention to the business sector is timely; the United States has lost its ability to compete in many products involving technology. This contributes to a sinking dollar, inflation, and unemployment.

Speakers at the symposium, including President Carter's Science Adviser, Frank Press, emphasized that a major factor has been a lack of innovations. In the past, new high-technology products were an important source of prestige and of a favorable balance of payments. Innovations also fostered gains in employment and productivity.

For nearly two decades after World War II, the United States was a leader in fostering research and development. Expenditures for R & D rose to 3 percent of the gross national product (GNP). At the same time, Western Europe and Japan were only gradually recovering from the war. But while trading rivals continued a vigorous effort to catch up, the United States ceased to expand its support of R & D. In constant dollars, the level of effort has been static for more than a decade and now represents only 2.2 percent of the GNP. While governments in other countries such as Japan worked closely with industry to foster innovations and exports, the United States adopted a hostile attitude toward business, subjecting it to thousands of costly regulations. For example, in the making of steel, companies must comply with more than 5000 regulations issued by 27 different federal agencies.*

A similar level of federal intervention prevails in other industries, and it represents only part of the problem: states and municipalities have added further burdens. The cost of federal regulations, which is passed on to consumers, has been estimated as high as $100 billion a year and it is increasing. The higher cost fosters inflation at home and inability to compete abroad.

One of the effects of creating this vast structure of federal regulations has been an enormous concentration of power in Washington. In contrast, vice-presidents for R & D of major companies tend to be subdued and anxious. One of them told me he devoted 90 percent of his efforts to matters dictated by regulations or anticipated regulations. The time required to proceed from research to the introduction of an innovative product is 10 years or more. In the meantime, who knows what regulations may be imposed?

Other factors discouraging innovation include high interest rates and tax policies. In Japan, companies can write off capital expenditures in 3 to 5 years. Here, 10 years or more is common.

The result of the current climate is that many major companies are concentrating their R & D on improvements in existing processes and products. At the same time, the creation of small high-technology companies has virtually ceased.

Frank Press, who is fully aware of the trends in innovation, has brought the matter to the President's attention. In consequence, a major domestic policy review has been launched. The Cabinet-level study will be undertaken by a committee drawn from 15 federal departments, agencies, and offices. The committee will be chaired by Secretary of Commerce Juanita Kreps, with day-to-day coordination by Jordan Baruch. During the study industry, labor, and public interest groups will have an opportunity to make inputs.

The initiative of Press and the good intentions of President Carter are to be applauded. But the committee is loaded with representatives of the regulators. They will be merely acting as humans if they seek to escape blame. Even so, the policy review will surely have constructive consequences as the committee looks at the government's role in inhibiting innovation.

—PHILIP H. ABELSON

*Council on Wage and Price Stability, *Catalog of Federal Regulations Affecting the Iron and Steel Industry* (Government Printing Office, Washington, D.C., 1976).