7 of 11 DOCUMENTS

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Priming the High-Tech Pump

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What shouldthe government do -- if anything -- to improve American products, cut the costs of manufacturing them and in general make the American economy more competitive in world markets?

The people who call for government programs in this area make a case for research and development outlays that are not now being undertaken. Others point out how ineffective such programs have been in the past. Meanwhile, Japan and the European Community are moving ahead aggressively to help their industries increase market shares in the United States and elsewhere.

That is why both business and labor want the government to act. A flood of legislative proposals suggests that Congress will in fact do something, in spite of possible opposition from the administration. What mechanisms and programs could work best?

We recently served on a panel of the National Academy of Science and Engineering that examined this question. The panel said the government should support basic research where the United States has a comparative advantage that helps U.S. competitiveness. It recommended that the Defense Advanced Projects Agency, which has sponsored advances in computing, microelectronics and networking that have been of substantial benefit to the civilian sector, expand into dual-use information technologies. It urged the Department of Commerce to embark on a program of industrial extension aimed at getting new technologies to medium-sized and smaller firms. It said the National Institutes of Health should continue its support for biotechnology. It recommended that the Department of Energy and NASA pick one or two of their laboratories to work with industry to adapt technologies for private-sector use.

The panel further and controversially suggested that Congress establish a quasi-public Civilian Technology Corporation with a one-time $ 5 billion appropriation. An independent board would be charged with staffing the CTC and overseeing an investment program to develop civilian technologies with high potential for being converted to commercial uses.

The CTC would focus on "precommercial" technologies -- those not yet developed to the point where an individual firm can confidently foresee a profit but that show significant potential. Industrial firms would share project costs.

Instituting a CTC is preferable to expanding programs at existing agencies or creating a new civilian technology agency. Operating much like the private sector, it would be more efficient in getting results out to the business community. An independent CTC could conduct its affairs free of constricting civil service personnel rules and federal procurement regulations. The CTC could base investment decisions on technical and economic considerations rather than the interests of specific industries, regions or bureaucratic and political forces.

Critics of the CTC note it would have a structure similar to that of the failed Synthetic Fuels Corporation established by Congress late in the Carter administration. But the principal reason for failure of the SFC was not its independent structure but that its projects weren't economically viable after world oil prices plunged in the mid-'80s. The CTC is designed precisely to respond to market opportunity. To the extent that performance of substitute products or of other, already commercialized technologies improved and their costs fell, CTC technologies would be abandoned.

Improving competitiveness is a sufficiently urgent and long-term imperative to justify reallocating a portion of the $ 70 billion annual federal R&D budget. Of this, more than $ 20 billion per year now goes to government-owned laboratories whose current contribution to civilian technology is small and which have little experience in working with the private sector.

The CTC -- indeed all the technology-related actions -- are not the only, or even the most important, policy measures that the federal government should be taking to improve our competitiveness. The government has a responsibility to adopt macroeconomic policies that encourage savings and investment, to support basic research, to invest directly in such things as roads and communications systems and to help educate a technically capable work force.

But it is reasonable to expect that the CTC would back some winning (as well as some losing) technologies. These winners would improve the U.S. position in a few high-technology industries -- an achievement worth working for.

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