

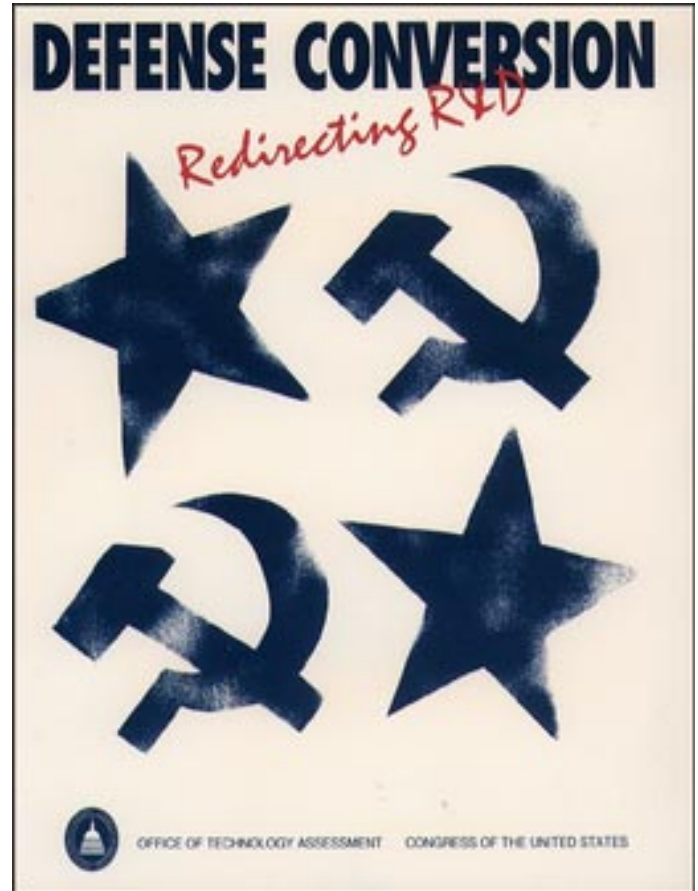
Defense Conversion: Redirecting R&D

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Foreword

Defense conversion means finding productive civilian uses for the resources and people formerly devoted to the Nation's defense. Channeling the savings from reduced defense R&D to civilian R&D is, of course, only one option for using the peace dividend. There are many others, including deficit reduction. This Report examines opportunities to advance civilian technologies and improve U.S. industrial competitiveness internationally by redirecting research and development from defense to dual-use or civilian purposes.

The Report has two parts. Part One analyzes how R&D institutions currently pursuing defense missions could be more responsive and useful to civilian technology development. Defense R&D has historically dominated government R&D, and it will continue to do so even with reduced funding. However, there are opportunities to use a growing portion of the resources and talents of the defense research infrastructure for civilian technology development. The Report focuses particularly on the Department of Energy's (DOE's) three nuclear weapons laboratories, Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratories. These labs are very large, with combined operating budgets of \$3.4 billion and more than 24,000 employees. More than other defense-related R&D institutions, these labs are under heavy pressure to devote greater resources to civilian technologies, largely through cooperative research and development agreements (CRADAs) with industry. In the short term, DOE needs an improved process for initiating CRADAs in order to be responsive to industry's surprisingly large demand for shared R&D with the defense labs.

In the longer term, the labs' ability to contribute to civilian technologies will depend on whether they are given new, nondefense national missions. One serious option is to radically shrink the labs, in accord with reduced nuclear weapons development needs. Another is to find new public missions for the Nation, to which the weapons labs and other R&D performing institutions (public and private) might contribute. Part Two of the Report examines how proposals for new national missions might replace defense in contributing to the country's repository of technology, high-value-added jobs, and gross domestic product. A secondary consideration in examining these initiatives is whether existing defense R&D institutions, including the DOE weapons labs, might be able to contribute. As an illustration, the report examines two sectors in Part Two: new kinds of automobiles that pollute less and could reduce dependence on foreign oil, and high speed surface transportation.

This is the second of two OTA Reports on the implications for the U.S. civilian economy of the end of the Cold War. The first Report, *After the Cold War: Living With Lower Defense Spending*, considered the effects on defense workers, defense-dependent communities, and defense companies.



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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

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