



UNITED STATES DEPARTMENT OF COMMERCE  
The Under Secretary for International Trade  
Washington, D.C. 20230

MEMORANDUM FOR: Working Group on High Technology Industries

FROM: Lionel Olmer, Chairman

SUBJECT: Status Report on CCCT Study on High Technology Industries

1. In order to prepare the report quickly, the CCCT Study was divided into four parts. Each part was assigned to a member of a working group of experts for preparation of draft chapters. The four components are:
  - (i) overview of U.S. high technology trade competitiveness,
  - (ii) examination of specific industries.(for example, software, robotics, etc.)
  - (iii) examination of economic, national security implications,
  - (iv) relevant factors affecting competitiveness
    - financial
    - human resources
    - industrial polices
    - industrial organization

Work on all but the first section and part of the second has progressed to the stage of a preliminary draft. Compilation of the separately drafted component parts into a preliminary draft is underway. A first draft should be completed by April 2. The study is being coordinated by Dr. William Finan, whose background is in international economics, who recently joined my staff.

2. In addition to the preparation of materials by the working group of experts, the following activities have been conducted to broaden the information base used to prepare the study:
  - (a) Consultation with relevant Industry Sector Advisory Committees,
  - (b) Informal contact with individuals at the following agencies: Labor; Defense; USTR; ITC; and State,
  - (c) Informal contact with the following Congressional Groups: Office of Technology Assessment; Congressional Budget Office; the Joint Economic Committee; and the Ways and Means Committee,



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- (d) Meetings with an ad hoc panel of executives of U.S. high technology companies,
  - (e) Contact with groups also currently conducting research on issues related to high technology industries, such as the National Academy of Science,
  - (f) Request to The Bureau of Industrial Economics to provide assistance in industry sector analyses.
3. High technology industries are difficult to identify with precision. But, regardless of the alternative definition used, the basic conclusions regarding U.S. competitiveness remain unaffected. For the purposes of the CCCT Study, high technology industries are those broadly defined as research intensive. The industries identified as high technology are components of the following sectors:
- aerospace
  - chemicals
  - machinery (electrical and non-electrical)
  - scientific equipment

Research and development effort relative to sales for these industries is markedly greater than for all other manufacturing sectors.

Some service activities such as software development or computer aid design are integrally related to high technology manufacturing sectors such as computer equipment or semiconductor production. This blurs the clean distinction often made in international negotiations between services and goods. While we discuss the linkages between these sectors, service activities are not directly identified as high technology.

Regardless of the way high technology industries are identified, measures of competitiveness, such as share of world exports, show a consistent decline.

4. There are several policy initiatives relating to issues of high technology trade, either already underway or likely to begin in the near future. For example:
- USTR is pressing to have high technology discussed in the GATT Ministerial and a working group formed afterwards,
  - the Secretary General of the OECD has identified high technology issues as potentially needing attention,

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- the Japanese have suggested that a bilateral "forum" be established to discuss high technology industry issues.

The CCCT study will form the backdrop for possible USG initiatives on high technology issues in these forums.

Despite difficulties in precisely defining the term "high technology" industry and the fact that industries covered by the definition represent a wide variety of industrial activities, there seem to be compelling reasons for the USG to seek to have certain issues addressed under the high technology label. The following preliminary observations illustrate why we have a greater stake than our major trading partners in addressing issues related to high technology industries.

- U.S. exports are more heavily tilted towards high technology goods than those of any other country,
- U.S. high technology goods have lost competitiveness in world markets; this is especially evident in third world countries;
- the maturation of world economies, especially those of Japan, France, and Germany, has eroded the relative advantage the U.S. used to enjoy in research; the industrial infra-structures of these countries are approaching the U.S. in sophistication; for example, while the U.S. maintains an absolute lead in the numbers of scientific and technical personnel, the relative advantage has declined,
- other governments are actively channeling resources into high technology sectors -- these activities may intensify the process of general erosion of U.S. technical lead,
- Japan has closed rapidly on the U.S. lead in a number of high technology sectors; the likely result is that in the future both countries will be specializing in exporting similar products; this underscores the need to gain access to the Japanese markets for U.S. high technology products.

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