

## **Executive Summary**

### **Commercial Science and Technology Panel**

In early 1999 the Naval Research Advisory Committee (NRAC) was tasked by the Honorable Lee Buchanan, Assistant Secretary of the Navy (Research, Development and Acquisition) [ASN(RDA)], to assess how the Department of the Navy (DON) could leverage commercial science and technology (S&T). In response, an NRAC panel was formed with the following study objectives: to identify how the DON could capitalize on relevant research and development (R&D) produced by international commercial industry; to develop an understanding of the commercial S&T investment strategy; to identify mutually beneficial technology opportunities for the DON S&T community to collaborate with commercial industry; and to propose a DON methodology to assess and utilize relevant technologies.

The sponsors for the study were the DON Chief Technology Officer (CTO) and the Commanding Officer, Office of Naval Research International Field Office (ONRIFO). Because commercial technologies are increasingly global, and based upon the resident technical expertise and collaborative work in progress at the ONRIFO London Office, the study focused on European commercial companies.

Prior to the 1980s, US Government investments drove the technology content of US and world industries. The trend since that time has dramatically shifted to industrial investment. The magnitude of commercial R&D investment is significantly greater than that of the Department of Defense (DoD), and the disparity has been growing for years. This has resulted in significant improvements in commercial product performance and reductions in life cycle costs.

The panel assessed two technology areas that are critical to DON needs and where Europe is a leader: Power Electronics and Wireless Telecommunications. Panel members visited key European industrial leaders in each technology area in December 1999. A prepared list of questions was provided to each company in advance. The panel intent was to develop an understanding of the near term investment strategy and identify opportunities for S&T collaboration. If successful, the panel would determine enough information to comment on the DON's ability to understand and influence these commercial technology investment strategies. The panel felt that by examining two technology areas led by European companies they would (1) highlight the global nature of commercial technology; (2) stimulate similar assessments in the US and Asia; and (3) generate an assessment methodology.

The panel found that the commercial sector has a comprehensive technology plan and a willingness to share it openly. However, the DON's ability to influence commercial technology development is minimal, if at all.

In today's military climate of increasing requirements and decreasing budgets, the DON should adopt commercial products "as is" to keep up with certain technologies and save money. The panel also emphasized that the use of open architectures is essential for effective incorporation of the rapid changes in technology and products. Open architectures will also enable the DON to replace parts and systems with an end result of improved product performance at much lower lifetime cost.

The panel recommended that the ASN(RD&A) drive the adoption of commercial systems and establish a policy for exploiting commercial technology that contains a mechanism for collecting and understanding information on future commercial technology. In addition, the panel felt that DON participation in international standards committees would provide opportunities for interface or, at least, an understanding of the projected outcomes of various options for standards.

The key elements of the recommended panel methodology are to: (1) identify product lines and/or technologies of interest to the DON that are led by the commercial sector; (2) understand those product lines and/or technologies with respect to DON requirements; (3) determine future commercial product stability and development strategy; and (4) incorporate commercial products into the DON investment strategy.