All businesses plan for the future as a way of dealing with uncertainty and change. When a new strategic intent is expressed for a business or organization—when the mission or organizational end changes—and the primary purposeful activities of that organization are perceived to be shifting, the organizational structure is often part of that shift. In January 1999, then–Navy Vice Admiral (VADM) G. F. Nanos, Commander of the Naval Sea Systems Command (NAVSEA), asked RAND to formulate a methodology for making business-planning decisions involving the activities, products, markets, technologies, people, and facilities—the equities—of NAVSEA, initially with a view toward organizational realignment. The time horizon for those plans was 2007, so that the analysis results would be far enough in the future that simply extrapolating from the NAVSEA of today would not be appropriate, yet not so far into the future that forecasts of geopolitical, technological, and business environments would be totally unreliable, and so that a possible implementation of results could influence recommendations for budget cycles before 2007.

BACKGROUND

The Naval Sea Systems Command is the largest of the U.S. Navy’s Systems Commands. It employs almost 45,000 people in 310 occupations. NAVSEA’s responsibilities span all aspects of the life cycle of ships, submarines, and their components—from acquisition through support to the Navy Program Executive Officers (PEOs), to in-service engineering, maintenance, and retirement.

To provide this full spectrum of services in the twenty-first century in an environment of continuing downsizing, declining Research, Development, Test, and Evaluation (RDT&E) infrastructure and resources, and increasing competition from the private sector for scientific, engineering, and management resources is one of the great challenges confronting NAVSEA leaders. This environment is being constrained further by congressional unwillingness to approve new authority to the Department of Defense (DoD) to close additional
bases and facilities. In 1998, the Administration placed this issue back on its agenda for reconsideration, but congressional action was not forthcoming. However, Congress has provided opportunities for structuring a number of new types of relationships between government organizations and the commercial world, such as Other Transaction Authority (OTA), venture capital for leveraging commercial innovation, and private-government partnerships.

Over the past decade, NAVSEA has responded to this environment by significantly reducing its workforce and closing several bases or detachments. Yet, it has also recognized that major changes will continue to affect NAVSEA and its field activities as significant changes continue to occur in the acquisition processes and technologies that have the potential for more efficient operations and improved performance for Navy ships, submarines, and combat systems. For NAVSEA operations to accommodate these changes will be a continuing problem, especially in view of the expectation that DoD will be looking for further reductions in infrastructure and increased organizational efficiencies to help finance future force modernization. Recognizing and accommodating both force modernization and sustainment of vital long-term capabilities as resources continue to decline require examination of those innovative best practices that contemporary organizations, both public and private, experiment with and exercise.

Faced with similar circumstances, other organizations have recognized that they cannot do everything well when there is less to do it with. They have found innovative alternatives to achieving their strategic intents. NAVSEA leaders have recognized that emerging technologies and the exponential acceleration in information processing and computer capabilities are transforming the ways in which both private and public organizations get their business done. They have also recognized that business-process engineering could significantly influence the way NAVSEA operates and is organized. As a consequence, a number of NAVSEA organizational initiatives are under way.

Among these initiatives (e.g., NAVSEA’s internal Core Equities Initiative), NAVSEA asked RAND to perform an independent analysis that focuses on the next 10 years (2000–2010) to identify the NAVSEA capabilities needed to support future Navy missions. NAVSEA leaders also asked RAND to analyze alternative NAVSEA organizational alignments for the twenty-first century. A fourth task, examination of options for transitioning the NAVSEA of today to those alignments, was withdrawn.

**RESEARCH PLAN**

The RAND effort to support NAVSEA organizational decisionmaking involved a three-phase methodology: analysis of the strategic environment in 2007 to
identify products, technologies, and activities that are central to the success of
current naval strategy and naval strategy for the future; a quantitative analysis
of those products, technologies, and activities, as well as the markets that will
use them, to further determine which products will have the highest impor-
tance and widest breadth for the NAVSEA of 2007; and analysis of potential or-
ganizational arrangements to capitalize on commonalities and synergies
(combined actions or operation) among products, personnel, and technologies
to achieve goals for least cost or high differentiation (i.e., superior value in
product quality, special features, or in-service maintenance) for NAVSEA
customers.

The three phases of our systems-analysis approach overlapped, and the re-
search team was the same for all phases. Each phase began with a review of
documents pertinent to the “system” being analyzed; site visits to Navy,
NAVSEA, or defense organizations to gather additional information or to partic-
ipate in presentations; and discussions among the team members on subject-
matter expertise to form a judgment; then selection of a methodology most ap-
propriate for achieving the desired goal; and finally iterations of the methodol-
ogy to complete a framework for planning. Many times, the methodology for
the framework was an adaptation of a RAND-developed tool. The main
methodologies underpinning the three analyses are presented in Table 1.1.

The four elements of the national security strategy—deter, shape, prepare,
and respond—drive mission capabilities and, hence, frame the analysis.
Assumption-Based Planning identifies the assumptions about the future in that
strategy and in other national and military planning documents and identifies
indicators that could signal the likelihood of the futures assumed in those plans
coming to pass. The strategy-to-tasks approach traces the top-level strategy to
systems and on to mission capabilities (products and services) that will enable
the strategies to be realized. To identify for the Navy the implications of mission
capabilities that are likely to be more important than those for the current mis-
sion, we began the research by analyzing the external security environment for
the next decade and beyond. Projecting the Navy needs onto NAVSEA respon-
sibilities using this framework yields detailed foresight into the future demands
for NAVSEA capabilities. This analysis is the subject of Chapter Two.

The mandates examined in Chapter Two provided a bridge to the business
analysis of Chapter Three. The missions they specify translate into NAVSEA’s
markets when NAVSEA is placed in a business context. As a starting point in
this phase of the analysis and to relate our assessment of the capabilities
needed for the future strategic environment described in Chapter Two to the
products (something a customer or stakeholder is willing to pay for), markets
(needs and preferences of customers and clients), and activities (processes and
organized resources) in NAVSEA, the research team consulted the inventories derived from NAVSEA’s internal Core Equities Initiative to identify those areas/activities within each organizational element of NAVSEA that should be retained in-house or that should be outsourced (NAVSEA, 1999a). The Core Equities Initiative is an internal NAVSEA effort to have each of NAVSEA’s Centers and elements describe and rank its equities. Intended to bring business planning to NAVSEA’s elements, this effort was under way throughout our study. A Core Equity Working Group is still present at NAVSEA, using the RAND results reported here, it is hoped.

Framed by this Market-Product-Activity Model, the analysis begins with an assessment of markets growing in emphasis and continues to describe the databases of products, processes, and organized resources (technologies, facilities, and personnel) and measures that help to quantify the importance,
breadth, and growth of each in the markets. Our portfolio-analysis methodology enables a sequence of comparisons of how one element/capability interacts with another. The purpose of this methodology is to narrow options among products and activities so that managers can debate those options without having to deal with too many variables. We concluded this phase of the research with an assessment of the centrality of each product to the corporate mission. The concept of centrality serves as a bridge to the organizational structure analysis. This phase of the analysis is the subject of Chapter Three.

The organizational analysis is likewise concerned with narrowing options. It begins by placing NAVSEA within the context of the industries within which it does business. The narrowing continues through focus—segmenting NAVSEA’s activities into conceptual business units, entities that focus on a well-defined set of activities, products, etc., that meet the needs of specific NAVSEA customers. The focus can be changed by switching, adding, or deleting segments. It concludes the narrowing through shape—identifying the horizontal and vertical integration of critical processes or products across business units to achieve major leverage points, economies of scale, or other benefits. For both focus and shape, the team emphasized the importance and implications of NAVSEA strategic intent. This analysis is the subject of Chapter Four.

Originally, size—delineating what might be inside and what might be outside of NAVSEA’s formal boundaries and its extent—was to be part of Chapter Four. We describe a framework in Chapter Four that NAVSEA can use to analyze sizing issues.

The appendices include background information on this comprehensive analysis. Appendix A provides a list of site visits and presentations, and a survey for gathering data at the sites. Appendix B lists Instructions and Directives from the Secretary of the Navy and Office of the Chief of Naval Operations that clarify NAVSEA’s missions and capabilities needed for those missions. Appendix C presents technical aspects of the analysis presented in Chapter Three. It includes the majority of the analysis of activities. The results of that analysis pertain to resource allocations, part of the sizing analysis that was not performed in this study.