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Advancing the Revolution in Business Affairs

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Other chapters in this volume have described new types of threats emerging from a rapidly changing global military and economic environment. In response, they recommend reforms to DOD military organizations, policies, and practices to sustain and expand the nascent "Revolution in Military Affairs" (RMA). This chapter shows how meeting these threats will also depend on implementing management and administrative changes in the parts of the Department of Defense that support military operations. This challenge has come to be known as the "Revolution in Business Affairs" (RBA) because it is a critical counterpart to the RMA. Reforms to DOD's practices for acquiring and managing the delivery of goods and services will enable the continued development of the underlying technologies and practices of the RMA. They ensure that DOD can meet the changing needs of the warfighter efficiently over time.[1]

Among the many ways the RBA supports the RMA, three in particular are worth noting. First, DOD must be responsive to new

1. This was emphasized in the 1997 Quadrennial Defense Review (QDR): "Efforts to reengineer the Department's infrastructure and business practices must parallel the work being done to exploit the Revolution in Military Affairs if we are to afford both adequate investment in preparations for the future, especially a more robust modernization program, and capabilities sufficient to support an ambitious shaping and responding strategy throughout the period covered by the Review." Quadrennial Defense Review, Section III, "Defense Strategy," May 1997.

threats more quickly and flexibly than in the past. As explained elsewhere in this volume, future threats are expected to be asymmetric, involve transnational and substate actors, and require operations in difficult venues such as isolated regions or urban locations. The United States will have less time to respond to these emerging threats than in the past. Uncertainty about these threats places a premium on being able to adjust rapidly to surprise. Speed and adaptability are needed not only for operating forces, but also for the organizations that support them with technology development, equipment acquisition, and workforce training. The RBA supports the RMA by encouraging innovation and experimentation among various approaches, operational concepts, structures, and technologies, fusing operating forces and support organizations into a streamlined, unified system for delivering military capabilities.

Second, saving money on operations and support of current forces is an important and politically palatable way to increase investment in technology development and systems acquisitions for future forces. DOD's FY 2001 budget authority for operations and maintenance is $109 billion, more than the $98 billion allocated to acquisition and technology development.[2] Two recent outside commissions established by Congress call for increased spending in acquisition and technology-development accounts.[3] Every dollar shifted from operations and maintenance to modernization due to efficiencies can help DOD realize the full potential of the RMA, without affecting current readiness.

Finally, the RBA can also play an important role in restoring citizens' general confidence in government, both the executive branch and Congress, and in particular their support for investment in improved defense capabilities. DOD has the opportunity to demonstrate that large government institutions can achieve world-class "business" performance. Congress can demonstrate its understanding and support of the use of modern business management methods in the public sector.

Implementing the RBA is a gigantic task, and has been pursued by the DOD since the Quadrennial Defense Review in 1997. The "business affairs" of the DOD embody myriad management and adminis-

2. U.S. Department of Defense, 2000 Annual Report to the President, Appendix B-1: "DOD Budget Authority by Appropriation FY 2001."

3. The Commission on Roles and Missions of the Armed Forces (CORM) was established in 1995, and the National Defense Panel in 1997.

trative activities, consuming the majority of the defense budget and of the work of DOD civilian personnel. DOD is not a business and should not be run like one. However, in the past two decades, private industry has made radical changes in business practices and organizational structure, which reflect new business principles that are applicable, with adaptation, to a public-sector organization such as DOD. There are many organizational, infrastructural, and procedural facets to achieving the goals of the RBA, covering areas such as research and development, logistics, test and evaluation, contracting, product support, industrial relations, competition, budgeting, facilities, human resources, and more. This chapter describes ways to move the RBA forward in three particularly important areas: conducting competitive sourcing assessments of functions that are not inherently governmental; establishing a new process to eliminate excess facilities; and initiating value-based systems acquisition practices. In each of these areas, we focus on broad conceptual problems facing DOD and the major implementation barriers.

Key Private-sector Management Improvements and their Applicability to DOD

Just as the Revolution in Military Affairs has been made possible by the marked increase in technological capability of U.S. industry over the last two decades, the Revolution in Business Affairs will be made possible by changes in business organization and management during that same period. The private sector has fundamentally improved the way it conducts its operations. The principles that guided these changes are applicable, with modification, to the management of the DOD.

Since the 1980s, private industry has been focusing on increasing the rates and efficiency of information flow, knowledge generation, and product and process innovation, primarily through the following mechanisms:

- restructuring, in order to facilitate continuous improvement in essential missions and concomitant core competencies, while outsourcing other functions;
- developing alliances with both suppliers and customers to create product value;

- supply-chain management, particularly supplier-excellence programs and paperless, Internet-based procurement;
- flattening organizations and increasing the responsibility of lower-level management and field activities; and
- stressing and rewarding innovation and measured performance, especially metrics related to customer satisfaction.

These changes began in earnest when many American businesses found their market share and profitability in decline, due in large part to strong Japanese competition in the 1980s. In the process of making these changes, customers and suppliers increasingly came to be viewed as strategic partners in product development. Achieving and sustaining quality required focus on core competencies. In many cases, suppliers with expertise in particular domains could better achieve such focus. In non-core areas such as accounting, equipment maintenance, and other support functions, many world-class suppliers existed. As a result, many major companies began to disassemble the vertically integrated organizations built during the 1950s and 1960s. Over time, business competition evolved into competing alliances of firms. By creating such a "constellation," firms can take advantage of their own core competencies while protecting themselves with equally specialized partners.

The growth of constellations of firms meant that innovation was increasingly becoming a decentralized activity. New forms of management — particularly supply-chain management — were necessary. Organizations that had reduced middle-management layers (had "flattened") and distributed product realization activities among many partners began applying advanced information technologies to coordinate better the activities of design teams, managers, and supply-chain players.[4] Many companies developed sophisticated market-monitoring capabilities that permitted them to monitor component development, coordinate subsystem integration, and negotiate better prices.[5] Scarcity of technical and marketing talent compelled some

4. Richard Van Atta, Michael Lippitz, Paul Collopy, Brad Hartfield, and Noah Richmond, *Complex Product Realization 2020: Key Issue Areas,* draft report (Alexandria, Va.: Institute for Defense Analyses, December 15, 1999), p. 1.

5. This is an important activity, as the development of constellations has led to reduced horizontal competition at particular levels.

firms to become better organized to meet the needs of their people, to assure that their employees were of a higher quality and higher motivation than those of their competitors.[6]

Like industry, DOD must cope with new, unfamiliar situations that require rethinking its basic mode of operations. A review of management reform implementation in the United States yields certain fundamental principles that point toward how private-sector innovations can be applied productively to a public-sector organization such as DOD.[7]

FOCUS ON CORE MISSION AND DEVELOPMENT OF CORRESPONDING CORE COMPETENCIES

Achieving continuous quality improvement requires that internal management focus on those skills and knowledge that underlie the organization's competitiveness, while collaborating with partners in order to provide complete solutions. Partnerships allow greater flexibility in responding to a changing environment. More importantly, talented people are attracted to and stay with organizations whose core competencies match their skills.

FOCUS ON DELIVERING CUSTOMER VALUE

Customer focus has changed the way businesses think about their tasks. The most important aspect of customer focus has been the elimination of processes and bureaucracies that do not measurably contribute to customer value. It has also opened feedback channels that are critical to maintaining a company's competitive position.

INCENTIVES BASED ON MEASURED PERFORMANCE

Decentralization increases the need for coordination. Companies have increasingly employed market mechanisms to distribute rewards in order to align incentives deliberately among customer, suppliers, and employees. An emphasis on measured performance helps

6. Robert H. Waterman, *What America Does Right: Learning from Companies that Put People First* (New York: W.W. Norton, 1994).

7. The following discussion is a revised and extended version of a similar argument presented in John P. White, Steven J. Kelman, and Michael J. Lippitz, *Reforming the Department of Defense: The Revolution in Business Affairs*, Special Report of the Preventive Defense Project, Vol. 1, No. 4 (February 1999).

in implementing incentive programs, as well as being a requirement for continuous quality improvement.

ACCOUNTABILITY FOR RESULTS

It is people who make changes, not "departments" or "offices." Incentives work only if people are rewarded and penalized based on results that they can reasonably control.

RBA MISSION FOR DOD

Each of these principles is applicable to DOD. Taken together, the ultimate mission statement for the RBA might be summarized as, "an accountable government and contractor workforce with the incentives, skills, tools, and flexibility to achieve the performance necessary to support the warfighter cost-effectively." DOD's recent progress toward that goal is outlined in the next section.

Recent DOD Acquisition and Business Process Reforms

DOD acquisition practices and business processes have been the topic of numerous studies and efforts going back four decades.[8] The most dramatic changes have occurred during the past decade and are continuing today. These changes are based on government-wide legislation and reforms as well as DOD-initiated efforts.

The Government Performance and Results Act of 1993 (GPRA) initiated management reforms throughout government aimed at measuring its performance. GPRA directed federal agencies to measure progress toward outcome goals and submit strategic performance goal plans to the Office of Management and Budget (OMB) at least every three years.

Concurrently, Congress addressed many long-standing administrative and contracting barriers to change. On October 13, 1994, President Clinton signed the Federal Acquisition Streamlining Act of 1994, known as FASA. This law was intended, among other purposes, to make it easier for the government to acquire goods and

8. This section draws upon Michael Voth, *MilSpec Reform and Incentives for Commercial Technology Insertion*, December 9, 1997 (unpublished manuscript); *The Road Ahead*, DOD paper released by the Under Secretary of Defense for Acquisition, Technology, and Logistics, June 2, 2000; and the Defense Reform Initiative Website at <http://www.defenselink.mil/dodreform/>.

services from the commercial marketplace. FASA made a wide range of changes in acquisition policy and procurement law, by exempting purchases of commercial products from several statutes, while expanding the definition of a "commercial product." FASA was followed by the Federal Acquisition Reform Act of 1996, or FARA, which made additional statutory changes, such as the elimination of certain cost-accounting standards that had discouraged commercial companies from doing business with the government. FASA and FARA paved the way for reducing government oversight, simplifying contracting procedures, and bringing government contracting closer to commercial practices. The Information Technology Management Reform Act of 1996 (Division E of the Clinger-Cohen Act), made changes to the way DOD acquires information systems, one of the most important areas in which DOD needs to leverage commercial capabilities better.[9]

A number of studies have provided the underpinnings for change within DOD. A 1980 book by Jacques Gansler called for more tightly integrating military and commercial industrial bases as a remedy for the increasing inefficiencies of the defense companies relative to commercial industry.[10] In 1986, the Blue Ribbon Commission on Defense Management, chaired by former Deputy Secretary of Defense David Packard, highlighted the need for DOD to expand its use of commercial products and processes and to eliminate barriers that discouraged application of innovative technology to DOD contracts.[11] In 1992, the Advisory Panel on Streamlining and Codifying Acquisition Laws (known as the Section 800 Panel) published an 1800-page report

9. The Clinger-Cohen Act, among other things, requires agencies to include information technology acquisitions in strategic plans and annual budget submissions. It calls for the use of performance measurements in order to encourage information technology investments to be tailored to each agency's particular mission. It seeks to leverage commercial information technology advances by calling for "modular contracting," in which acquisitions are broken into flexible, evolutionary increments.

10. Jacques S. Gansler, *The Defense Industry* (Cambridge, Mass.: MIT Press, 1980).

11. The President's Blue Ribbon Commission on Defense Management (The Packard Commission), *A Quest for Excellence: Final Report to the President and Appendix* (Washington, D.C.: The Packard Commission, June 1986).

that made recommendations in the areas of procurement reform, electronic commerce, and military specification, among others.[12]

William Perry served on the Packard Commission, and he made implementation of its recommendations and those of the Section 800 Panel a high priority when he returned to the Pentagon in 1993 as Deputy Secretary of Defense and, in 1994, became Secretary. Toward that end, on February 24, 1994, he set forth a dramatic vision for simplification of the way the Pentagon buys military systems, in a report titled *Acquisition Reform: A Mandate for Change*. On June 29, 1994, he issued a memorandum titled *Specifications and Standards—A New Way of Doing Business.* The "Perry Memo," as it came to be known, reversed DOD policy by directing the military services to "use performance and commercial specifications and standards instead of military specifications and standards, unless no practical alternative exists to meet the user's needs." It also directed military acquisition programs to reduce their oversight, employing process controls in place of extensive testing and inspection. The memo instructed program managers and acquisition decision-makers at all levels to "challenge requirements … [because] the problem of unique military systems does not begin with the standards. The problem is rooted in the requirements determination phase of the acquisition cycle."

Other acquisition reform initiatives and directives followed:

- five acquisition reform pilot programs intended to demonstrate that, through the use of commercial products and commercial practices, military items can be acquired more quickly and at reduced cost;
- the Single Process Initiative, under which DOD changed numerous existing contracts simultaneously in contractor facilities, to facilitate the implementation of state-of-the-art manufacturing technologies and more efficient business processes;
- Other Transactions Authority, which allowed flexible contracting procedures for certain prototype projects;

12. The Advisory Panel on Streamlining and Codifying Acquisition Laws (known as the Section 800 Panel) was created in response to Section 800 of the National Defense Authorization Act for Fiscal Year 1991, P.L. 105-510.

- Integrated Product and Process Development (IPPD) and Integrated Product Teams (IPTs), mandated throughout DOD by Perry on May 10, 1995;[13]
- Cost as an Independent Variable (CAIV) — i.e., cost targets for programs — mandated for all acquisition programs;
- The Defense Acquisition Deskbook, an automated reference tool that provides easy access to the most current acquisition information; and
- Advanced Concept Technology Demonstrations, which fund the development of prototypes that operational forces can use in simulated realistic combat environments to develop doctrine, operational concepts, tactics, and procedures that will take advantage of new capabilities.

Recent administrations have also initiated broader business process reforms. In 1989, President Bush called for a comprehensive look at the Department's management processes. Under Deputy Secretary of Defense Donald Atwood, an institutional process emerged to consider and act on a range of management initiatives concurrent with the annual budget review. Among the initiatives launched were the consolidation of accounting and finance services, improved spare parts provisioning, and a more comprehensive approach to information management systems. In large measure, the groundwork for implementation of the Clinger-Cohen Act at DOD was laid through these information management initiatives. Similarly, efforts were pursued to develop performance criteria and unit-cost-per-output determination in advance of the Government Performance and Results Act.

The Clinton administration initiated a National Performance Review (NPR) with performance audits that identified problems of or-

13. Integrated Product and Process Development (IPPD) is a management technique that brings together representatives from several disciplines in Integrated Product Teams at the very start of a project. The IPPD approach integrates timely input from all team members with varied functional backgrounds, with an emphasis on use of advanced modeling and simulation tools, so that programs are better structured up front and issues arising during development can be more quickly identified and resolved. It also helps various development and marketing activities to be performed concurrently, allowing products to be brought to market more quickly.

ganization and process government-wide. NPR implementation included training government employees in customer-service concepts, and publicizing best practices through "Hammer Awards," some 800 of which have been given. NPR changed its name in 1998 to National Partnership for Reinventing Government with a renewed focus on achieving quality performance by government organizations.

In 1995, the Report of the Commission on Roles and Missions of the Armed Forces (CORM) presented a lengthy analysis of problems with the DOD's support establishment and management practices.[14] It made extensive recommendations in both areas including greatly increasing the use of outsourcing, reengineering DOD support activities, creating a Quadrennial Strategy Review, and restructuring the Planning, Programming and Budgeting System (PPBS). Many of the CORM's recommendations have been, or are in the process of being, implemented.

Recent DOD acquisition, logistics, and management reform efforts have been gathered under the rubric of the Defense Reform Initiative (DRI, released in November 1997), one of the first initiatives of Secretary of Defense William Cohen. The DRI provides a strategic blueprint for adopting business processes in the Department. It has defined a series of initiatives in four areas:

- *Reengineer*: DOD is to adopt modern business practices to achieve world-class standards of performance;
- *Consolidate*: DOD is to streamline organizations to remove redundancy and maximize synergy;
- *Compete*: DOD is to apply market mechanisms to improve quality, reduce costs, and respond to customer needs; and
- *Eliminate*: DOD is to reduce excess support structures to free resources and focus on core competencies.

On June 2, 2000, a report by Under Secretary of Defense Jacques Gansler summarized the key recommendations of recent studies and highlighted planned initiatives.[15] These initiatives are aimed at:

14. The Commission on Roles and Missions of the Armed Forces, *Directions for Defense* (Washington, D.C.: U.S. Government Printing Office [U.S. GPO], May 1995).

15. Jacques Gansler, *The Road Ahead: Accelerating the Transformation of Department of Defense Acquisition and Logistics Processes and Practices* (Washington, D.C.: DOD, June 2, 2000). The studies summarized in this report were un-

- extending military specifications and standards reform to the entire defense system life cycle, not just new acquisitions;
- developing more flexible, long-term acquisition strategies that will create incentives for suppliers to provide innovative products to DOD;
- developing strategic alliances with defense suppliers;
- expanding performance-based acquisition to procurements for services;
- expanding the use of fixed-price versus cost-reimbursed acquisition;
- encouraging consideration of alternative methods to accomplishing missions (that is, managing DOD programs as a portfolio);
- changing DOD acquisition guidance to include consideration of cost, time-phased requirements, and evolutionary acquisition strategies;
- initiating pilot programs aimed at reengineering product support;
- decreasing R&D infrastructure, military bases, and other unneeded DOD facilities;
- moving toward "continuous learning" in the DOD workforce;
- restructuring acquisition career fields to emphasize the skills and leadership competencies necessary to implement the RBA; and
- institutionalizing a continuous "enterprise change" model throughout DOD.

All in all, the need for fundamental reform is well accepted within most of the DOD community and among prime contractors, although there are still pockets of resistance. Much has been accomplished and much is planned to overcome the historical biases and institutional resistance that continues to affect how and from whom DOD acquires good and services, and what it acquires.

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dertaken in response to congressional direction in Section 912(c) of The National Defense Authorization Act for Fiscal Year 1998.

Recommendations

The remaining sections of this chapter apply the lessons learned and the general principles identified in the previous sections to refine and expand on RBA reforms in three key areas: competitive sourcing, infrastructure reduction, and systems acquisition. *Competitive sourcing* is aimed at evaluating those DOD functions that are not "inherently governmental" in order to determine whether DOD's overall effectiveness would improve if they were performed outside the Department, that is, outsourced. Successful competitive sourcing achieves the numerous benefits discussed in this chapter including additional savings through the elimination of infrastructure, beyond that already justified by reductions in forces. This will add to the Department's current inventory of excess real property that needs to be eliminated. Thus, the need will only increase for an orderly process of *infrastructure reduction*, our second recommendation. Third, we urge a new model for those *systems acquisition* functions remaining within DOD, leading to better performance and lower cost.

COMPETITIVE SOURCING

DOD's core missions — joint military operations and policy development — have not changed. However, as a result of new threats, shifts in national strategy, changing geopolitics, and the globalization of the world economy, some of the specific activities that implement these missions are changing. The new skills must be integrated into the force so that it can respond to a wide range of challenges, old and new. This means redefining DOD's core competencies.

In parallel to the private firm's focus on defining core competencies in the context of its business, the DOD must define core competencies in the context of its public mission. DOD is the sole provider of a fundamental public service: the nation's international security. Thus, most of those who carry out its core missions — such as joint military operations, combat operations, and combat support operations — should be government employees. But many of DOD's functions are neither inherently governmental nor core: their execution does not require special public trust and confidence. Functions such as finance and administration, telecommunications and computer operations, routine logistics, and scheduled equipment maintenance are performed in many public and private organizations. Thus it is clear that people out-

side the DOD can do them. Deciding exactly which functions should be outsourced will uncover many ambiguities, but there is no doubt that a large number of functions performed by DOD employees could be supplied effectively under contract by private firms. The new administration will need to achieve the correct balance between public and private operations so as to enhance joint military operations while reaping the gains from competitive sourcing.

If done properly, a DOD focus on core competencies and collaborative partnerships carries significant advantages, such as:

- attracting and retaining talented people in both the government and the contractor base;
- encouraging flexibility in staffing over time without political constraints;
- promoting world-class performance and innovation, both internally and in outsourced activities, through an emphasis on both market competition and public and private contracts;
- tapping into key technological advancement in the private sector;
- facilitating modernization by replacing legacy systems with state-of-the-art capabilities; and
- reducing cost.

It has been the policy of the U.S. government since World War II to acquire its armaments and related goods and services from the private sector rather than from government arsenals. It is widely agreed that this has been a wise policy, particularly when it is compared with the experience of some European governments that have gone in the other direction. This policy is enunciated broadly in OMB Circular A-76:

> In the process of governing, the government should not compete with its citizens. The competitive enterprise system, characterized by individual freedom and initiative, is the primary source of national economic strength. In recognition of this principle it has been and continues to be the general policy of the government's reliance on commercial sources to supply the products and services the government needs.[16]

16. Circular No. A-76, Office of Management and Budget, Executive Office of the President, August 4, 1983 (revised 1999), p. 1.

The privatization of government activity is an attempt to introduce market relationships into the bureaucratic production of public services. In some cases it involves the outright transfer to the private sector of government assets and their attendant responsibilities, such as depots or data centers. Such activities have been widespread in state and local governments in the United States and in many foreign governments. The focus here is on a subset of the privatization activity: outsourcing, or the transfer of a support function previously performed in the government to an outside private service provider who will operate under a contract that includes flexibility as to how it is to meet the government's requirements.

The DOD has had extensive and largely positive experience with the process of competitively assessing whether public functions should be outsourced. The Center for Naval Analysis reported in December 1996 that:

Past A76 competitions within DOD have yielded significant savings ... about 1.5 billion dollars annually or about 30 percent of the baseline cost of performing the functions. The savings seem to result from competition rather than outsourcing per se.[17]

The CNA study identified the characteristics of functions that were associated with high savings: large single-purpose competitions; functions performed primarily by military personnel; research support; real property maintenance functions; services in support of military installations; intermediate maintenance (as opposed to user maintenance or depot maintenance).[18]

In a recent speech, Jacques Gansler, Under Secretary for Defense for Acquisition, Technology, and Logistics, cited some initial results from competitive sourcing of work that is not inherently governmental:

Regardless of who wins (government or industry), empirical data show that performance improves and prices go down from competitive sourcing. In examples of the public-private competition numerous

17. R.D. Trunkey, R.P. Trost, C.M. Snyder, *Analysis of DOD's Commercial Activities Program* (Alexandria, Va.: Center for Naval Analyses, December 1996), p. 2. See also William Brent Boning, et al., *Evidence on Savings from DOD A-76 Competitions*, CNA Research Memorandum 98-125 (Alexandria, Va.: Center for Naval Analyses, November 1998).

18. Ibid.

studies have shown that for more than two thousand cases, average savings are twenty percent when the public sector wins and forty percent when the private sector wins. Since to date the winners have been split about evenly, we have an average of thirty-percent savings—with higher performance.[19]

Despite these successes, the number of competitions has been relatively modest, just 2138 under the A76 rules from 1978 to 1994. Most of these competitions involved narrow functions with a small number of employees. For example, the Defense Science Board cites an analysis of 800 such competitions in which less than 10 percent of the activities involved more than 55 employees.[20]

Recently the DOD has expanded its competitive sourcing efforts through the establishment of a strategic sourcing program.[21] The new emphasis is intended to address a broader range of management options including elimination of obsolete practices, consolidation of functions or activities, reengineering and restructuring of organizations and adoption of best business practices. To some extent the new program reflects the DOD's inability to meet its previously stated A-76 job assessment goals for the period 1997–2005.

The Congress has resisted any major increase in the amount of outsourcing in spite of the declared policy in favor of the private sector and the positive results of past competitions.[22] The Defense Science Board analysis cited eight major congressional impediments to outsourcing activities. A 1996 letter from the Deputy Secretary of Defense listed thirteen statutory encumbrances to outsourcing:

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19. Jacques S. Gansler, "The Defense Industrial Structure in the Twenty-first Century," speech to the American Institute of Aeronautics and Astronautics (AIAA) Acquisition Reform Conference, January 27, 2000.

20. *Report of Defense Science Board Task Force on Outsourcing and Privatization*, the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, U.S. Department of Defense, August 1996, pp. 32–33.

21. DOD Interim Guidance, "Strategic Sourcing Program," February 29, 2000.

22. See Chapter 11 by Judith Miller for further discussion of how Congress has substantially constrained the practice of outsourcing by adopting a variety of reporting, timing and other restrictions that have made effective implementation of the policy very difficult.

The numerous statutory requirements of Chapter 146, and related provisions to the Authorization and Appropriation Acts, work together to create an often impenetrable barrier to outsourcing. They impose on the Department requirements to perform detailed studies and analyses that are extraordinarily time consuming, expensive and unrealistic. At the same time they preclude converting to contract if detailed studies cannot be done within a certain time.[23]

The Defense Science Board Study also listed the key problems with the A76 process as:

- complexity in timelines;
- inequitable public-private cost comparisons;
- emphasis on cost, not best value;
- mostly small "stovepipe" functions are affected;
- exemptions and waiver authority not used adequately.[24]

These impediments are reinforced by the general reluctance on the part of the bureaucracy to outsource functions traditionally performed by DOD employees, even if they are not inherently governmental. Evaluations of whether to conduct sourcing competitions are usually made as a part of the "requirements process" and are within the purview of the manpower and support organizations in each service. These organizations have strong incentives to maintain the status quo, because to define many functions as "non-governmental" is to eliminate the need for their organizations to exist. Thus the bureaucracy often gives way to the incentive to identify many functions as "inherently governmental" by using broad and loose definitions.

All of these impediments make it crucial that the senior leadership commit its energy and resources to an expansion of competitive sourcing activities. The results have been modest to date relative to the opportunity. Only a broad, programmatic approach to competitive sourcing will yield the kinds of benefits necessary to make a difference in terms of the overall performance of the Department.

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23. Letter from the Deputy Secretary of Defense, John P. White, to the Honorable John McCain, Chairman, Subcommittee on Readiness, Committee on Armed Services, United States Senate, April 22, 1996.

24. *Report of Defense Science Board Task Force on Outsourcing and Privatization*, p. 44.

Overcoming Resistance to Competitive Sourcing

It is our recommendation that the new administration should substantially increase the DOD's competitive sourcing goals to capture its benefits, including the ability to focus on core competencies, take advantage of private sector innovation, and obtain large cost savings. The Quadrennial Defense Review, mandated by law to take place in 2001, should be the vehicle for defining the program and specifying its goals. The Secretary of Defense should issue a new policy statement declaring that the private sector is the preferred provider of goods and services to the Department, and that all services that are not inherently governmental or combat related should be considered competitive candidates. He should make it clear in his guidance to the Quadrennial Defense Review that this is a fundamental paradigm shift in the Department's view of how it will conduct its operations, akin to Secretary Perry's memo of 1994 regarding military specifications.

The Secretary should make a formal request through OMB to the President that he be given wide latitude beyond the strictures of A-76 to pursue a broad, aggressive competitive sourcing program. This new program would complement the DOD's current A-76 program under the Defense Reform Initiative, not supersede it. This relief would allow DOD to adjust study guidelines and timetables, improve cost comparison and value methodologies, and evaluate major functions using the competitive sourcing process.[25] The Secretary should stipulate that public-sector employees whose functions are opened to competition would continue to be allowed to present a public-sector alternative to outsourcing. There is no policy justification for disenfranchising employees or preventing employees from improving their competitive positions and protecting their jobs. Public-private competitions are cumbersome and involve methodological difficulties, but are the foundation of a fair process.

The new administration should also vigorously seek the support of the key political leadership in the Congress, principally on the House and Senate Armed Services Committees and the defense appropriations subcommittees in both houses, for expanded outsourcing. Legislation should be proposed to give the DOD relief from

25. A-76 already allows for waivers and exemptions, but a request for explicit presidential approval is imperative because of the magnitude of the program and its political implications.

past congressional strictures and protect it from imposition of new limitations during the program's execution.

The Department must take the initiative in addressing the personnel issues that will arise from a broad-based competitive sourcing program. It should insist upon early involvement of the unions, provide open and sustained communication with the employees involved, and assure that those affected will receive appropriate retraining, outplacement services, and severance packages. Efforts should also be made to use attrition to reduce any surplus in the civilian workforce. The services should be assured that any uniformed personnel that become available can be reassigned, and that military end-strengths will not be reduced. In addition, there should be written commitments that all cost savings realized by the military departments will remain in those departments to be allocated to other programs. This will eliminate the service argument that the reforms are really disguised budget reductions.

The Secretary should charge the Deputy Secretary of Defense with leading the program, consistent with chairing both the Quadrennial Defense Review and the Defense Management Council. This will assure the direct participation of the Vice-Chairman of the Joint Chiefs of Staff, the Under Secretaries of Defense, the three services' Under Secretaries, and the service Vice Chiefs.

We recognize that making this program an integral part of the QDR puts increased stress on an already overburdened process. But this is critical to assuring that it is a central element of the new administration's strategy.

Candidate Selection Process

The selection of functions to be assessed should be managed at the QDR level, not by the service bureaucracies. A set of selection criteria should be developed, such as:

- the function being outsourced can be reasonably defined;
- outsourcing the particular function would allow for an increase in mission effectiveness;
- risks involved can be well understood, carefully specified, and minimized;
- private firms are providing similar services to private and/or public customers;

- similar private-sector outsourcing demonstrates major innovations, such as effective supply-chain management;
- the number of firms involved is sufficient to assure competition both at the time of outsourcing and thereafter;
- it is principally uniformed military personnel, not civilian employees, that are released from current duties;
- focus on functions where it is hard to attract and keep government employees; and
- DOD can provide the necessary supervision to the contractors to assure that its objectives are met.

Examples of Candidates for Competitive Sourcing

There are numerous candidates inside the Department for competitive sourcing using such criteria. Past studies have identified long lists of such candidates; another such list is not necessary here.[26] Five candidates from a recent DOD study are included here to illustrate the kinds of activities we have in mind.[27]

Long haul (long-distance) communications is a central requirement for the new warfighting strategies. Commercial solutions dominate the market today. The technology is expensive, complex, and moving so rapidly that DOD will find it increasingly difficult to keep up and to attract the necessary skilled people to perform these functions.

Information resource management is concerned with assuring appropriate information capabilities at various levels in the DOD; it is defined more broadly than just "information technology" (but not as broadly as information management, in which DOD decides what information it should have and how it should be used). These information resources reside in a structurally distributed system, so that centralization is not an effective solution, and the technologies involved are, again, expensive, complex, and changing rapidly. In addition, this function has the attractive characteristic that while

26. See, for example, Center for Naval Analyses, "Analysis of DOD's Commercial Activities Program"; and "Report of the Defense Science Board Task Force on Outsourcing and Privatization."

27. "Panel on Commercialization of the U.S. Defense Establishment," Peter Dawkins, Chair, Department of Defense, June 1999.

common standards are necessary for interoperability, the services and agencies can be allowed wide latitude in application design.

The Department's non-combat-related efforts in the area of *logistics and supply-chain management* have shown improvement but would benefit from the addition of competitive sourcing. Commercial logistics operations are widespread, highly innovative, subject to measurement, improving rapidly, and often adaptable to the DOD's needs.

The DOD needs a modern, comprehensive, integrated *financial management system*. The defense finance and accounting service (DFAS) has a "migration" plan that is gradually reducing the number of finance and accounting systems and improving other parts of the operation, but the pace is slow and completion is a long way off. Meanwhile, there is a large, sophisticated private industry that provides these kinds of services. Of concern, however, is that DFAS employs a large number of civil servants throughout the United States, an issue that will make this particular change politically difficult.

The *technical skills component* of the training provided by the military services can be done outside the DOD. This training is not uniquely military, but rather parallels skills widely taught in the private sector, such as computer operations and truck driving. Most of the trainers are military personnel, who can be reassigned without the political difficulties inherent in abolishing civilian jobs. The Department has successfully outsourced some of this training already; its resistance to extending that experience further is largely an institutional bias of the services to use uniformed trainers.

Expanded competitive sourcing embodies a major opportunity for the new administration. The groundwork has been laid and it has the appropriate vehicle for implementation in the QDR. This initiative could transform major parts of the DOD and deliver far-reaching benefits.

INFRASTRUCTURE INITIATIVES

Inefficient and unneeded infrastructure is a major RBA problem (and DOD success in outsourcing will increase the excess). In the early to mid-1980s, which witnessed the largest peacetime expenditures for defense in our nation's history, DOD retained infrastructure capacity sufficient to support a military nearly twice the size of the actual force. Since then, the military force structure has declined by over 800,000 active-duty personnel, a reduction of nearly 40 percent compared to

U.S. armed forces levels at the time of the Gulf War. Since 1988, DOD has completed or set in motion a process to close or realign more than 100 military and government-operated bases in the United States. However, this represents less than 20 percent of DOD's infrastructure, facilities, and base operations. The present infrastructure could support a force structure double that of today. While the previous closure and realignment initiatives have saved over $15 billion so far, and will save an estimated $6 billion annually after 2001, these savings could be doubled if the infrastructure were sized to support current forces.

In this section we argue for a renewed commitment to facilities closure initiatives and the establishment of a new process to close excess capacity expeditiously. Such initiatives could be introduced and pursued under existing authority, but we present the arguments, and a strategy, for developing a new process.

Why a Process is Needed

The last wave of base closure initiatives (1988–95) did not even come close to shutting down all redundant facilities. Nonetheless, the effort was a remarkable achievement that made a significant dent in excess capacity and was a testimonial to commendable political courage. Closures and realignments over the past dozen years represent the collective efforts of four separate initiatives to rationalize DOD's support infrastructure. Each of the four efforts required an exhaustive review of the capacity and utility of bases that were candidates for closure and a process to minimize inappropriate political influence over the selection and closure criteria.

In large measure, the carefully monitored closure proceedings were a direct consequence of post–Vietnam era actions, which bore the taint of political motivation rather than national security considerations. U.S. military infrastructure had expanded dramatically in the 1950s and through the early 1960s, but as the Vietnam War wound down and military personnel discharges accelerated, the Nixon administration embarked on an effort to close excess facilities. While Congress and the American public welcomed the decision to withdraw from the protracted conflict in Southeast Asia, there was considerably less enthusiasm for terminating activities at home that had contributed to local economic well-being.

At that time, the President had comparatively unfettered authority to "rationalize" the stationing of forces and bases to support them.

Thus, President Nixon decided to close several military bases deemed excess to national security requirements. These happened to be located in congressional districts represented by members of Congress who did not support Nixon's policies. This started a new chapter in the struggle for dominance and control between the executive and legislative branches, and a new element of distrust.

Congress moved decisively to curb the President's authority to close bases or reduce the level of personnel at specific locations. Legislation was enacted in the 1970s to establish guidelines for potential closure. They included requirements for environmental impact statements, community hearings to assess the economic impact of potential adjustments, and extensive reporting prior to any action affecting any installation. In effect, statutory impediments were erected to assure that no base could be closed without congressional approval, which was rarely granted. The process became so onerous that the time and steps required to close a base would inevitably exceed the tenure of any administration, leaving the initiative to be reversed or simply forgotten by successor administrations.

The consequence was to dull the Department's interest in pursuing initiatives affecting local bases and their personnel levels. In time, an entire generation of Pentagon management simply gave up on the prospect of ever reducing the cost of infrastructure or any management initiative that could affect the number of people employed at various military installations. Indeed, through most of the 1970s and 1980s, congressional unwillingness to permit closure without a Herculean effort became a standard Departmental excuse for ever-increasing base-operation budgets and management inefficiencies.

A Process is Born

By the mid-1980s, defense budget growth had peaked and began to decline as the Cold War thawed. Toward the end of the Reagan administration, the Defense Department began paring its funding requests and proposing initiatives to save operation costs. To demonstrate the commitment to fiscal responsibility, but also to illustrate the sacrifice it would entail, Defense Secretary Frank Carlucci invited Congress to repeal the statutory impediments to base closures. While there was hardly a rush to accept the challenge, Carlucci's initiative did have the effect of reintroducing infrastructure costs into the national defense-budget debate. All previous efforts to

streamline the closure process had stalled because Congress did not trust the executive branch to be non-partisan in its selection of base-closure candidates. Similarly, the administration considered such initiatives to be a waste of time since, in the end, Congress would protect its members and the bases in their districts anyway.

Concurrent with Secretary Carlucci's proposal, Representative Dick Armey introduced the first legislative framework designed to minimize politics and to expedite base closure and realignment decisions. While not adopted, it was a beginning. Congress had finally wearied of hearing the administration's claim that infrastructure initiatives, the key to any future budget savings, were being blocked by congressional recalcitrance. In 1988, Congress — reasoning that this would minimize political vendettas — authorized a one-time process to convene a bi-partisan commission empowered to select candidates for closure. To neutralize the tendency for logrolling, Congress would retain only the right to accept or reject the entire closure package recommended by the Commission, but could not selectively pass judgment on individual recommendations.

Chaired by the respected former U.S. Senator Abraham Ribicoff, the first Base Closure Commission convened in the spring of 1988. Having started with a blank sheet of paper, just seven months later the Commission delivered its findings. Lacking adequate time and without a framework for selecting closure candidates, the Commission offered up the painfully obvious choices in locations that had widely been identified as redundant or as examples of infrastructure inefficiency. Secretary Carlucci accepted the Commission's recommendations, although they were not all he had hoped for, and the Congress posed no objection.

The 1988 Commission was a historic precedent: a clear indication that the political impasse could be broken. This seminal first effort included a number of important lessons for future consideration. First, it demonstrated the wisdom of a commission set above the political fray, whose members were highly regarded and yet familiar enough with the political arena to know its hazards. Chairman Ribicoff was clearly a bi-partisan, consensus choice, and proved to be the consummate role model. Similarly, the other commissioners were regarded as seasoned political veterans beyond reproach. Selection of a well-regarded legislative Brahmin was a crucial prerequisite, raising

the comfort level for Congress as it undertook the extraordinary act of delegating its legislative power.

Second, the shortcomings of its results demonstrated that a baseline was needed. Lacking a framework for rationalizing the massive infrastructure requirements of the Defense Department, members of any commission, however independent, are left to operate from their own instincts, biases, and limited knowledge. That first Commission was thinly staffed and given nothing to start with; on the contrary, it was explicitly directed to begin with a blank sheet of paper, as evidence of its objectivity. In and of itself, this attribute proved inadequate for the preparation of an acceptable, much less a comprehensive, list of excess facilities.

Third, this unprecedented foray into delegated legislative control over the most local of politics (to invoke Speaker Tip O'Neill's famous line) demonstrated that such decisions cannot be well considered during an election year. Even high-minded legislators and independent commissioners are unfairly exposed to wrathful public criticism during campaign periods. Base closures are extremely tough political decisions that cannot be made in a vacuum; their effects on local communities are significant. The choices are difficult at best, and the challenge of making them is exacerbated to the point of impossibility in an election year.

Fourth and finally, this bold initiative demonstrated the virtue of persistence and strategy. Secretary Carlucci had made this initiative a regular part of his stock speech, calling for congressional cooperation in the quest for defense "reform," however it might be defined.

These four factors — politically savvy yet objective commissioners, a force structure baseline from which they could begin work, politically palatable timing, and consistency of objective — proved to be the recipe for dramatic improvements to the process for the next three phases of base closure and infrastructure rationalization initiatives.

Process Improvements with a New Imperative

Fresh from the completion of the 1988 base closure exercise, many in Congress hoped that the base closure demon had been purged. But with the collapse of the Berlin Wall in November 1989 and rapid transformation of the international system, others in Congress clamored for the "peace dividend" that should accrue. Struggling for definition of the "new world order" a scant two months after the

Warsaw Pact collapse, the new Bush administration submitted the FY 1991 budget proposal with the assumption that Congress would agree to a sweeping reduction in defense facilities and infrastructure.

To illustrate that the peace dividend would inevitably have domestic ramifications, the new Secretary of Defense, Dick Cheney, unveiled a laundry list of bases for closure that would be sure not only to reduce the cost of defense infrastructure but also to get the attention of his former colleagues in the Congress. The clear implication was that cutting the defense budget would result in a marked downsizing of defense operations, and Secretary Cheney meant to articulate that consequence early and often. Lacking an expeditious process for consideration of base closure candidates, Cheney's proposal was to follow the cumbersome extant procedures. The requisite announcement of personnel impact was released and the long environmental and community impact assessment was initiated. Meanwhile, prior to the Gulf War, world events kept unfolding, further fueling the presumption that a dramatic reduction in defense spending was not only feasible, but warranted.

However, Cheney's list was challenged, just as any list generated by an administration would be. Congress read partisan intent behind the selection of every candidate base on the list. Regardless, however, Cheney's declared intent was to follow the rules, knowing that this would demonstrate to Congress how painful the process could become. Members of Congress came to realize that fending off each step in the process was likely to occupy a lot of time back in their home districts, while many legislative riders would be required to stave off administrative actions that might disadvantage any of the bases proposed for closure. To the congressional leadership, this had all the makings of legislative chaos.

Given the 1988 precedent of an orderly base-closure process, support began to build for such a solution in lieu of a long-drawn-out campaign of attrition. Congressman Les Aspin, then Chairman of the House Armed Services Committee, had guided the enactment of the previous authority, and knew its strengths and limitations. In late spring 1990, Aspin countered the Cheney initiative with a proposal to initiate a three-stage process: Commissions would convene to consider base closure candidates identified by the DOD and proposed by the administration in 1991, 1993, and 1995. Aspin knew the overall advantages of having the Commission start with a baseline list, and con-

cerned himself with mitigating the attendant disadvantages. To maximize the advantages and diminish the prospect of partisan selection of bases, the Aspin proposal contained several important requirements.

Each of the Department's proposed closures had to comply with eight criteria, and the list of candidates had to contain an assessment of each base, to prove it was "excess." The first four criteria forced an analysis of bases relative to overall force structure requirements: mission requirements and operational readiness; land, facilities and airspace; contingency, mobilization, and future total force requirements; and cost and manpower implications. These four factors required a very specific focus on the mission objectives of the forces and the facilities needed to support those forces. The Air Force utilized these criteria to rank the value of facilities in each of its mission areas, thereby disclosing its decision process and justifying the closure candidates on the basis of their relative value to the rest of the infrastructure. It proved to be a very effective methodology for the other services as well.

The next four criteria assessed the return on investment (ROI) for the costs of closing facilities, and an assessment of impact: cost and savings of closure (with a ROI break-even point within seven years required); economic impact on communities; community infrastructure impact; and environmental impact. This formulation proved invaluable for establishing a cost baseline, useful in assessing conflicting data presented in support of counter-positions. But more importantly, it provided an assessment of the economic development initiatives that would be required to mitigate the impact on communities where bases were to be closed. Protracted efforts to deal with the aftermath of closure decisions were made more productive by these front-end assessments. Failure to do so could have escalated costs far beyond the value of the closure savings the decisions were designed to yield.

Lessons Learned

The Aspin proposal also envisioned a different approach to composing the Commission. Unlike the 1988 approach of appointing political "graybeards," the commissioners were selected based on a formula to assure that the administration and the Congress shared influence. The President and the congressional leadership on each side of the political aisle could nominate a specified number of commissioners. Ultimately, the members of the Commission would be appointed by the President

and confirmed by the United States Senate, like other senior presidential appointees. The selection process was clearly designed to minimize political influence, or at least to balance that influence by assuring that all of the players were present at the commission table.

The Aspin proposal introduced some important differences as to how the Commission should conduct its business and how the President and Congress could treat the product of its deliberations. The Commission's primary responsibility was to assure that the Department's list of closure candidates did not deviate from the eight criteria. If the Commission determined that any base proposed was inadequately justified based on even one of the criteria, the Commission was empowered to remove the base from the list. While the Commission could add new candidates for closure, Aspin was confident that it would be unlikely to do so, unless by consensus among the commissioners. His instincts proved to be right.

The Base Closure and Realignment Commission proceedings were to be conducted in public at various locations around the country. The results of the Commission's deliberations would be forwarded to the President, who then had the choice to approve the entire list without modification or reject it as a whole. If the President accepted it, Congress then had the option of rejecting the entire list within a specified period. If it did not, the President's decision could be implemented without further legislative or administration action.

The 1991, 1993, and 1995 Commissions were based on a far more elaborate process than the 1988 variant, but each round of closures was predicated on the same premise: that Congress gained political cover by delegating the authority to close bases. The process had to appear objective in order to be successful. Unfortunately, President Clinton's actions during the 1995 process called that objectivity into question. The Commission's report made decisions about each base that it reviewed that were either specific (for example, "close base A and move its functions to base B"), or offered the administration choices (such as "close base A and either move its functions to base B or outsource them to the private sector"). In his transmittal of the Commission's report to the Congress, President Clinton interpreted its findings concerning two large facilities as allowing him to privatize them rather than relocate the work to other bases. Consequently, those activities remain in operation today, but with a corporate logo over the door instead of the Department's seal. The Congress subse-

quently allowed the report to become law. However, some members of Congress and other affected constituencies perceived this action as a maneuver to thwart the intent of the base closure process, undermining the perception of fairness.

The special authority for base closure expired in 1995, and thus the rules devised in the 1970s now apply again. While the administration has persistently sought renewal of the expedited closure authority, the Congress has thus far shown no interest in entertaining the request.

Prospects for Future Initiatives

Any future effort to introduce an initiative to rationalize the Department's infrastructure must incorporate the primary ingredients of the previous base closure process:

- the bases to be closed must be demonstrated to be excess capacity, based on an objective analysis of force-structure support requirements;
- cost and impact must be assessed, based on specified criteria;
- assessment of post-closure economic development requirements must be done in advance, during selection of closure candidates;
- the decision-makers must be credible and considered objective;
- Congress must have a limited set of parameters for considering the package;
- the activity must not be conducted in an election year; and
- no subsequent action can be taken to call into question the credibility of the process.

The imperative for future base closure and realignment efforts is evident. The Department continues to support far more infrastructure than the force structure requires. The budget includes at least $6 billion annually to support facilities that are excess to force structure requirements. Both the administration and the Congress acknowledge that the Department's ability to reduce costs will be limited unless facilities can be closed. The persistent stumbling block has always been how those decisions will be reached. The recent history should help guide development of a new framework. However, the recent experience also provides a fresh memory to members of Congress about how hard it is to make decisions to close facilities. Absent

extraordinary political courage, the tendency toward political gerrymandering will predominate. Moreover, the process must be a truly new one, because the previous formula has now been mastered by a broad range of constituencies: as a result, the quality of the result in each successive round of closure and realignment was progressively diminished, as creative tactics were developed to blunt the political consequences of closure decisions.

In a new process, it is imperative that all affected constituencies be afforded a chance to be heard, and that the political accountability for the decisions be diffused as broadly as possible. Indeed, these conditions may be more important for the success of the endeavor than any specific aspect of the process ultimately determined. The activity of formulating the process in partnership with the congressional leadership is likely to achieve both the objectives of inclusiveness and diffusion of decision-making.

Without the next administration's unwavering, consistent commitment to facilities and infrastructure closure, no progress will be achieved. If its objective is merely to berate Congress for thwarting cost-saving objectives and retaining infrastructure for political objectives, no process is necessary. But if the next administration is committed to improving the support infrastructure for the armed forces by eliminating excess capacity, a new process for decision-making must be developed and approved by Congress.

To prompt the development of that future process, the next administration should take a page from former Secretary Cheney's strategy, by introducing a list of base closure candidates and making a commitment to a closure plan that comports with current law. This process is so extensive and public that it is certain to demand an unacceptable amount of time and effort on the part of local and federal officials. Indeed, such an unpleasant assessment drove the previous imperative to devise a more acceptable decision process. The act of negotiating a framework was sufficient to achieve buy-in to the concept, but absent the threat of the initial draconian strategy, the base closure objective would never have been realized. Such an opening strategy should drive the players to the negotiating table in search of a new process paradigm. At the same time, the new administration should draft a legislative proposal in order to accelerate the inevitably difficult negotiations that will follow.

SYSTEMS ACQUISITION

The two previous sections have argued for eliminating functions and infrastructure either that DOD does not need or that it can acquire more efficiently from external suppliers. This section addresses an important part of how DOD should manage its relationship with external suppliers. We outline a concept we call Value Based Acquisition (VBA) and show how VBA, by embodying the incentives, accountability, and customer focus of commercial markets, can improve DOD's systems acquisition.

The Value Based Acquisition (VBA) Concept

DOD acquisition reform efforts described above have cleared away major legal, regulatory, administrative, and bureaucratic barriers to taking advantage of the rapid pace of product improvement and efficiency in commercial markets. In areas where commercial companies perform functions or manufacture products that are nearly equivalent to those needed by DOD, such as housing, health care, and accounting services, DOD has already increased its use of outsourcing and direct purchasing of commercial items. Above, we recommend ways to improve and expand DOD's competitive sourcing activities. However, progress has been limited in cases where DOD acquires clearly noncommercial items such as major systems that are uniquely military in character (e.g., armored vehicles, warships, and fighter planes). There are many in the defense community who believe that DOD must continue to use traditional acquisition methods when acquiring such products. They assert that the development risk associated with complex defense systems, combined with their typically non-competitive production, makes it impossible to apply market mechanisms widely. We disagree. Using Value Based Acquisition, DOD can create market signals that are now lacking in systems acquisition, and in doing so create incentives for contractors that mirror those of commercial producers. VBA allows contractors to profit from finding innovative solutions that meet defense needs.

The VBA concept is already DOD policy. Secretary of Defense William Cohen articulated the fundamental principle in a recent report to Congress: "The Department needs to change its focus from trying to figure what something costs to acquire, to focusing on the value a thing has over its useful life. This change will allow DOD to compete differ-

ing solutions and get the best value."[28] This "best value" concept is being promulgated throughout DOD in the form of performance and strategic plans. Office of the Secretary of Defense (OSD) guidance requires that lower-level strategic plans show a clear linkage to DOD's corporate goals, and the military services are beginning to include linkages to performance-based management in their planning and budget documents. But understanding and communicating the relationships among systems, missions, and high-level DOD objectives is still sparse. Even at the level of individual programs, value-based approaches that allow flexible tradeoffs among performance, cost, risk, and schedule have not yet been developed.

VBA has much in common with current efforts within DOD to expand the use of what is called price-based acquisition (PBA). A recent DOD study group defined PBA as follows:

> In its purest form, PBA results in a firm-fixed-price (or fixed-price with performance incentives) contract and a fair and reasonable price is established without obtaining supplier cost data…. "Pure" price-based acquisition is at one end of a continuum. At the other end is "pure" cost-based acquisition (CBA) where virtually every aspect of the DOD/supplier relationship demands that the supplier provide DOD with actual or estimated costs.[29]

We believe that VBA, in which both price and performance are traded off, is actually the other end of the continuum from CBA, with PBA as an in-between step. VBA has several advantages over PBA, as we elaborate below. However, in terms of implementation, PBA and VBA face similar philosophical and practical barriers.

Those with philosophical objections to VBA reside principally within the contracting, audit, and legislative communities. They contend that traditional DOD-controlled, cost-plus-fee contracting is still the most sensible way to manage risky, long-term development and production programs in which there is no meaningful competition. They hold that DOD must carefully monitor contractor activities

28. William S. Cohen, *Section 912 Report to Congress*, April 1, 1998.

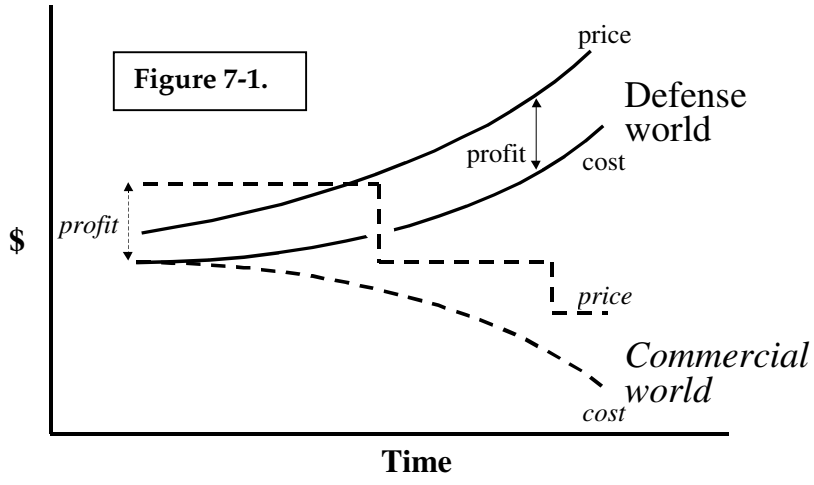
29. Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, *Report of the Price-Based Acquisition Study Group*, draft of November 15, 1999. This report was submitted to Congress as part of the studies undertaken in response to congressional direction in Section 912(c) of the National Defense Authorization Act for Fiscal Year 1998.

in order to insure adequate performance and to avoid waste, fraud, and abuse. In this environment, there is no practical way to engage in a commercial-style transaction. A fixed-price contract would expose contractors to too much risk, leading to overly conservative designs, while a contract that allowed for variable price or variable performance is unacceptable when spending public funds, as it makes it impossible to allocate budgets in advance and does not hold contractors sufficiently accountable. The public will not tolerate "excessive" profits for companies receiving public money.

The philosophical objections to VBA are sound but shortsighted. To leverage commercial market dynamics, DOD must take a longer-term perspective. In commercial markets, it is "excessive" profits that drive product improvement and process efficiency: commercial companies are motivated to become more efficient precisely because doing so leads directly to increased profitability. But this increased profitability can only be sustained if the improvements continue. In fact, many firms experience recurrent "boom and bust" cycles: extreme profitability is followed by periods of capital reinvestment. It is largely the prospect of "extreme" gains that motivates investment in high-risk innovation. In such an environment, even a monopoly producer must improve in order to prevent competition from being attracted to the market.[30]

In adopting a more "commercial" stance with respect to the defense industry, DOD may indeed pay more in the short run, but it can thus set in motion a dynamic that, over the long run, will lower prices and improve performance. Figure 7-1 depicts these two market scenarios. The commercial market scenario (descending cost and price curves) represents companies succeeding in the marketplace by lowering costs and improving performance. These efficiency gains are passed on to consumers, over time, as lower prices. In the defense market scenario (rising cost and price curves), companies working under cost-plus contracts have exactly the opposite incentive: their profits increase when their costs increase. Over time, rising costs can make the profits earned under such contracts even more "excessive."

30. The speed with which competitors will enter a market depends on the particular barriers to entry. In the case of intellectual property barriers, it can take as long as the expiration of patents. A barrier like high initial capital costs creates incentives to search for alternative technologies and approaches. In any case, no barriers are permanent.



In the figure, the two-sided arrow representing commercial contractor profit in the early years is equal to the arrow representing defense contractor profit in later years.

The important question for DOD is how to engage commercial suppliers in a market environment in which future costs are unknown. Past costs are not a good guide. If DOD set prices for computer or communications equipment based on historical costs, it would pay far too much. Knowledge of past costs can be a good starting point for planning and focusing management effort. But in order to create incentives for the cost-reducing, performance-increasing trends that characterize many commercial technology markets, DOD needs to have relationships with suppliers that are based on value, as suggested by Secretary Cohen.

This brings us to the practical problems with VBA. How can VBA be realized? How does one model and communicate value consistently across different levels of concern? What are the implications for DOD program management? We explore these questions below, beginning at the level of the individual program, and then tracing the implications of VBA for mission-level tradeoffs and for broader DOD and government objectives.

VBA in Practice

The key to VBA at the program level is the development of a value model that embodies key system design features, such as weight,

manufacturing cost, reliability, and the like, as well as key acquisition concerns, such as cost and schedule.[31] Quantification of the elements of value will generally be imperfect and partly subjective. Nonetheless, an explicit value model allows operational benefits — how a particular operational capability affects the ability of the warfighter to accomplish his mission — to be traded rationally and consistently against other important design factors, such as weight, reliability, and manufacturing cost.[32]

Once a quantitative value model has been defined, it can become the basis for contracting. A program office can offer a contract in which price is a function of value. The contract would specify the price that the program would be willing to pay for different levels of performance; that is, it would specify the various combinations of price and performance that would be equally acceptable. Prices would be based on the value model, as well as on market information and historical experience. The contractor would then use the relationship between value and cost to determine a solution that best matched its technical capabilities. Under a value-based contract, a contractor maximizes profit by including only those features whose value to the government exceeds their cost.

To understand how this works, one needs to consider that the development of a complex system can involve hundreds or thousands of designers deep in the contractor's and subcontractors' engineering organizations. These are the people who will make most of the de-

31. Our description of weapons-system value modeling is adapted, with permission, from Paul Collopy, "Joint Strike Fighter: Optimal Design through Contract Incentives," *1999 Acquisition Research Symposium Proceedings* (Washington, D.C.: Defense Systems Management College, 1999), pp. 335–346.

32. The advantages offered by a quantitative, value-based approach can be illustrated by an assessment of stealth. The prior method was to estimate, based on cost analyses, the reduction in combat losses due to improved survivability with stealth. The improvement thus calculated was only marginal, because the historical data do not show high loss rates. The reason for that is that squadrons avoid flying missions that put aircraft and crew in great jeopardy; the cost of such missions exceeds the value. The real advantage of stealth, however, as demonstrated in the Gulf War, is that stealthy aircraft can attack high-value targets that would, without the benefits of stealth, be too costly.

tailed design decisions that determine cost and performance. Because the value model captures the relative importance of key system features such as weight, manufacturing cost, reliability, and the like, it can be used as an effective communication tool all the way down the product hierarchy. For example, because the weight of a system is simply the sum of the weights of its components, each component designer can have insight into the overall value of small-scale design decisions. Such information is not communicated in the current system in which rigid specifications as to performance and cost are communicated downward from the top.[33]

VBA also embodies incentives for delivering improved system capability as underlying technologies evolve. The same performance-price relationship that defined payments for initial deliveries implicitly defines payments for upgrades. Whenever making use of a new technology increases value, the contractor is paid for that incremental value based on the original performance-price contract. If that added price is large enough to offset the cost of the upgrade (amortized across some number of units), the contractor improves its profitability by inserting it. Hence the contractor is motivated to design the system to be easy to upgrade so that it can realize increased profit, not only by improving each succeeding production lot, but also by inserting new technology into previously delivered systems.[34]

The ability of DOD to make a transition to use of VBA depends on implementation initiatives that are quite similar to those for price-based acquisition. The *Report of the Price-Based Acquisition Study Group*, submitted to Congress in November 1999, covers several spe-

33. What typically happens now in large system design is that Engineer A's part is over the specified weight but under the target cost. His best choice is to change to a lighter-weight, more expensive material that would increase cost by $5,000 and reduce weight by 8 pounds. The design is now satisfactory under the contract specs. Engineer B's part is over cost but under on weight. A cheaper, heavier material increases weight 28 pounds, but reduces cost $2,000, also meeting all specified goals. The net effect of both decisions results in a system that is 20 pounds heavier and costs an additional $3,000. In a value model, the relative value of weight is the same for each designer and is known throughout the supply chain.

34. This type of guidance can improve independent research and development (IR&D) decisions by focusing them better on the warfighter values as reflected in the model.

cific implementation needs, such as managing development risk, remaining knowledgeable about commercial markets, maintaining competition through all system development and production phases (including research and development), performing source selection, financing, handling contract claims and cancellations, training acquisition personnel, and including cost considerations within the DOD requirements process.[35] The Senate Armed Service Committee expressed its approval of that report and urged DOD to implement its recommendations.[36]

Relationship of VBA to Higher-level DOD Reform Goals

We began the discussion of VBA with Secretary of Defense William Cohen's statement: "The Department needs to change its focus from trying to figure what something costs to acquire, to focusing on the value a thing has over its useful life. This change will allow DOD to compete differing solutions and get the best value."[37] A GAO review found that although DOD's FY 2000 Performance Plan states overall performance goals, these goals are not clearly associated with specific missions and with the capabilities of weapon systems designed to help carry out those missions.[38] Using explicit value modeling to describe DOD missions would help DOD accomplish this goal. To build a value model, one must consider in depth how the key attributes of a system relate to the mission goals of the user. The value of the maximum speed of a fighter plane, for instance, is determined by assessing the implications of speed for survivability while attacking a hard target, effectiveness in base defense, fuel costs, and so on, across its most important missions. The value of various missions can be broken down into attributes in the same manner: destroying a hard target, for example, plays a part in winning a campaign, which in

35. *Report of the Price-Based Acquisition Study Group*.

36. Senate Armed Services Committee, Report for the Fiscal Year 2001 Defense Authorization bill, states: "Many of the recommendations of [the Price-based Acquisition] report ... show significant promise for the reduction of risk in the acquisition of major systems. The committee urges the Department of Defense to take strong action to implement [its] recommendations."

37. Cohen, *Section 912 Report to Congress*.

38. U.S. General Accounting Office, *Observations on the Department of Defense's Performance Plan for Fiscal Year 2000*, GAO/NSIAD-99-178R, July 20, 1999.

turn plays a part in achieving political objectives. Although such relationships can be difficult to assess and are partly subjective, the basic value modeling structure is the same.

Articulating the structure of values explicitly not only clarifies the key variables in a decision, but can also inspire creativity, by making it possible to separate a problem into its value attributes and then to explore various combinations of those attributes, unconstrained by preconceived ideas. Organizationally, thinking in structured, value-based terms makes it clearer how to separate the pieces of a problem into modular units that can be effectively delegated. A plan for building a subsystem is part of the plan for building a weapon platform; this in turn is part of a plan for waging war. Different groups are involved at these different levels. Value modeling creates a consistent structure that links these different levels and hence can help align organizations around shared goals.

In this way VBA could eventually lead to changes in the high-level process of defining and validating requirements, which are discussed by General Shalikashvili in Chapter 2. We are confident that VBA, properly implemented, would improve communication among program offices, prime contractors, and lower-tier suppliers by moving away from the notion of fixed requirements in favor of more flexible specifications that express the linkage between a system's key performance parameters and its effectiveness in accomplishing its missions. (Architectural requirements such as interface standards and communications protocols will often be an exception: they must be fixed, in order to enhance interoperability for joint capabilities, as described in Chapter 2.) Beyond this, we believe that, if VBA is successful at the individual system level, it could eventually become a language for discussing alternative mission approaches. This would help fulfill DOD's long-standing objective of better matching overall performance goals with specific missions and with the capabilities of weapon systems designed to help carry out those missions.

In the end, the most important goal of VBA is to change the way people think about their tasks. A parallel is found in the commercial world. Success and growth during 1960s and 1970s led to complacency for many companies; consolidated organizations grew in a manner that made corporate managers overly focused on internal matters. Success in the 1980s and 1990s was, by contrast, defined by becoming better organized to meet the needs of customers: more in-

novative in anticipating customer need, more reliable in meeting customer expectations, and able to deliver a service or product more cheaply.[39] For DOD, a focus on the quality of outcomes as viewed by customers — primarily the U.S. taxpayers and their representatives in Congress, as well as internal customers such as the regional and functional commanders-in-chief — has the potential to change how the entire DOD organization thinks about its tasks, activities, and responsibilities.

Conclusion

Achieving the goals of the Revolution in Business Affairs will require major policy, procedural, organizational, and cultural reforms, as well as significant downsizing. It will engender strong internal resistance. This resistance will have to be addressed with the same seriousness and focus as DOD's national security missions. Success will depend on building alliances with Congress, garnering public support, creating effective long-term programs inside the DOD, gaining the support of DOD's people, and developing new relationships with the relevant parts of the private business sector. It will not be easy but it is necessary. The Revolution in Business Affairs is a critical element of the array of reforms that are required for the DOD to succeed in the ever-changing, highly uncertain, but probably dangerous world of the future.

39. Waterman, *What America Does Right*.