
DECISIONMAKING FOR DEFENSE

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Defense is, for all nations, at the heart of national security. All nations face a common set of choices—what decisions must be made, who will make them, how resources will be allocated, and what investments will be made. At one level up, nations have to decide what principles and style of decisionmaking are appropriate for them, and, importantly, what structure will govern the process of defense decisionmaking. This chapter discusses these choices and reviews the issues that must be addressed in devising a governance structure for making them, drawing on U.S. experiences over the last half century. It concludes with a short discussion of alternative approaches and styles before looking briefly to the future.

America's experiences may have lessons for others even if their circumstances dictate a different set of governance arrangements for defense decisionmaking. Equally important, the United States is now at a point in its history when it must reconsider—if only to reconfirm—its own governance structure. The Cold War that motivated so much of the U.S. defense establishment and shaped its decisionmaking mechanisms has been replaced with a much different set of security challenges. The technological assumptions on which so many of DoD's current choices rest also must be reconsidered. Thoughtful defense analysts argue that a "revolution in military affairs" (RMA) is, and should be, under way. In short, should the United States in the early 21st century continue to make defense decisions the way it did in the latter half of the 20th?

DECIDING WHAT DECISIONS MUST BE MADE

Every defense establishment faces a set of interrelated decisions that it must make and that its governance structure should be designed to confront:

- What set of forces should the country maintain? How should forces be organized? Under what command structure?
- What training should forces receive? How ready should they be, and for what?
- With what equipment should forces be armed? In what condition should equipment be maintained?
- What tempo of operation should forces be prepared to maintain? What stock of consumable items and spare parts should be stockpiled to support this tempo? What ongoing maintenance capability is needed to sustain this pace of operation?

These decisions govern what the defense establishment delivers, but they should be guided by the *outcomes* desired by the national leadership. For the past 25 years, DoD has translated these outcomes into scenarios against which U.S. military forces are measured. During the late Cold War, the planning scenario focused on global conflict with the Soviet Union (on two fronts, Europe and Southwest Asia). After the Cold War, this scenario was replaced by a requirement to conduct two nearly simultaneous major theater wars (MTWs) while also conducting operations other than war (e.g., peacekeeping in the Balkans). When pressed for specificity, DoD posited the two MTWs as being on the Korean peninsula and in Southwest Asia.

When the Cold War ended, DoD tried at one point to formulate a new structure in which to make decisions about U.S. military forces—forces would be judged not against specific scenarios but against a set of military capabilities the country should maintain. DoD wanted to move away from a single scenario; its military leadership was concerned that no single scenario would be compelling. The shortcoming of the capabilities approach, as articulated in testimony by then Secretary of Defense Les Aspin, was that it did not yield defensible, specific criteria against which to judge military forces. To define such specific criteria, DoD tried generic “illustrative planning scenarios.” The lack of geographic specificity in these sce-

narios, however, when applied in the debate over the acquisition of the C-17, proved their undoing. DoD reverted to the concrete illustrations of conflict in the Persian Gulf and Korea, from which the notion of two nearly simultaneous MTWs eventually developed.¹

DECIDING WHO MAKES THE DECISIONS

A notable feature of the American political landscape is the U.S. Congress's salient role in defense decisionmaking, which is spelled out plainly in the Constitution. In enumerating the powers of the Congress, Article I gives it the authority to declare war, to raise and support armies and provide and maintain a navy, and to establish rules for the governance of the military. Indeed, of the 18 congressional powers enumerated in Section 8 of Article I, five explicitly deal with the military.²

The creation of a Secretary of Defense in 1947 reflected a balance between the prerogatives of the individual military services and President Truman's desire for a central executive to coordinate and rationalize their separate activities. The first secretary, James Forrestal, resigned after a largely unsuccessful struggle to orchestrate the activities of the National Military Establishment (as it was then called), frustrated by his limited powers as secretary. The 1949 amendment of the National Security Act addressed some of these limitations. It created the Department of Defense, subordinated the military departments to the secretary, and strengthened the staff supporting the secretary. Amendments enacted in 1958 further enhanced the secretary's role, thus paving the way for the far-reaching changes Robert McNamara imposed on the department. But DoD governance retains a tension between the centrifugal, competitive forces reflected in the responsibilities of the individual military departments (in whose well-being Congress takes a deep interest) and the centralizing responsibilities of the defense secretary.

¹Early in the Clinton administration, DoD leadership considered a posture of preparing for one MTW while checking a second opponent until resources could be mobilized or released to deal with it ("win—hold—win"). The resulting political uproar convinced the administration to endorse the two-MTW standard.

²The important (but often neglected) role of Congress is discussed usefully in Charles A. Stevenson, "Bridging the Gap Between Warriors and Politicians," paper for the 1999 Annual Meetings of the American Political Science Association, Atlanta, GA.

There is a further division of authority within the military departments, the one between civilian political appointees and the uniformed military hierarchy. This split is reflected in the fact that the separate civilian secretariat reports to the secretary of the military department, whereas the uniformed staff reports to the chief of staff. Much of the statutory authority wielded by a military department is actually held by that department's secretary, even though the uniformed staff is much larger than the civilian secretariat and typically exercises *de facto* control of the day-to-day agenda.

The Goldwater Nichols Act of 1986 changed the division of defense authority in three important ways. First, within the military departments, it strengthened the hand of the civilian service secretariats by formally subordinating the uniformed officers previously responsible for weapons acquisition and budget execution to their civilian counterparts rather than to the service chief of staff. For several decades, acquisition authority in the military departments had been divided between a civilian assistant secretary and a military deputy chief of staff assigned that function. Likewise, each military department had a military comptroller who reported through the chief of staff rather than to the civilian counterpart in the Office of the Secretary of Defense (OSD) responsible for financial matters. The Goldwater Nichols Act required that these military officers report to the civilian counterpart.

Second, Goldwater Nichols ratified the expanded authority of the commanders in chief of the unified and specified commands (CINCs), who, to the discomfit of the military departments, had been invited by Secretary Caspar Weinberger in 1981 to play a significant role in DoD's resource allocation processes. Goldwater Nichols further reinforced the CINCs' authority by requiring that all military units be assigned to one of their commands. Moreover, the CINCs were explicitly made responsible for the preparedness of their commands to carry out assigned missions. These changes solidified the CINCs' role as "customers" of DoD and, especially, of the military departments. The Act also underscored the future importance of joint operations as the way U.S. forces would be employed in the field, and thus the way in which planning for them should be conducted, including planning undertaken by the military departments. One example of this increased emphasis on "jointness" is that the

annual DoD budget proposals submitted to Congress include a separate item for joint exercises undertaken by the commands.

Third, Goldwater Nichols further empowered the chairman of the joint chiefs of staff (JCS) and joint staff. In the years following World War II, that position had gradually evolved into one clearly seen as the nation's senior military officer. Although the chairman is not legally part of the chain of command—which runs directly from the president through the secretary of defense to the CINCs—his advice is often treated with the same deference as that of the defense secretary, especially by Congress. In these ways, the Goldwater Nichols Act strengthened the chairman's advisory role, causing considerable concern within the military departments that his responsibilities importantly infringe on what they believe should be their responsibilities.

The Act also produced, in combination with the distinctive events of the last 15 years, a new central actor, the joint staff, which is in tension with the military departments because of its perceived intrusion on their authority (reminiscent of that produced by the “whiz kids” of Secretary McNamara's staff in the 1960s).

Divided authority could be a formula for bureaucratic gridlock and inaction, with many having the right to say “no,” but no element strong enough to see a program proposal through to approval and successful execution. One of the mechanisms that DoD has used in this circumstance, both to secure a wide circle of advice and to forge consensus on the best course of action, is the advisory board—i.e., a formal body that gives many if not all parties a “voice” in the process while allowing final decisionmaking authority to remain in the hands of the board's chair. The most powerful senior-level boards are

- The Defense Resources Board (DRB), chaired by the deputy secretary of defense. Advises the deputy secretary on major resource allocation decisions.
- The Defense Acquisition Board (DAB), chaired by the under secretary of defense for acquisition and technology (A&T). Advises the under secretary (A&T) on major acquisition programs and acquisition policies and procedures.

- The Joint Requirements Oversight Council, chaired by the vice chairman of the joint chiefs of staff (who also serves as the vice chairman of the DAB). Validates mission needs developed by the CINCs and by planning elements of the joint staff, reviews performance parameters and requirements, and develops recommended joint priorities for those needs.
- The Senior Readiness Oversight Council (SROC), chaired by the deputy secretary of defense. Advises the secretary of defense on readiness, oversees readiness-related actions, reports on relevant readiness questions, and coordinates DoD positions on readiness for outside audiences.

Each board was created by the direction of, or with support from, a particular secretary of defense, although succeeding secretaries have used and shaped them in accord with their styles. Thus, while the formal roles of these boards often change little over time, their real roles and authority respond to the style of each secretary, giving each secretary considerable latitude in how the department is managed.

Notably absent from this description of who makes decisions on defense issues is the U.S. president and his immediate staff. Designated by the Constitution as the commander-in-chief, the president could, in principle, take a detailed role in defense decisionmaking. The president and his staff typically do take an active role in formulating national security strategy, thus setting the basic course for the defense establishment, and the president usually makes the key operational decisions in times of crisis. But, otherwise, the American practice has been to leave most department managerial decisions to the defense secretary, although the president does set the budgetary constraint within which the department must live.

In the Kennedy administration, a concerted effort was made to involve the president early in key defense decisions. It was felt that securing the president's guidance early in the decisionmaking cycle would help the department formulate better policies. Draft presidential memoranda were prepared as vehicles for raising issues with the president. But when the first of these was presented to President Kennedy, he indicated that he was not prepared to make choices so early. The memoranda lived on for a period as a useful way to con-

duct policy debates within DoD, but they were never more than drafts and were never again sent to the president.

DECIDING HOW TO ALLOCATE RESOURCES

Budgets in bureaucracies are typically created one year at a time and are based disproportionately on expenditure patterns of the prior year. A group of analysts at RAND in the 1950s developed an alternative approach to budget preparation, one based on the idea that the proper way to begin was by setting long-term objectives. Codified under the cumbersome title Planning, Programming, and Budgeting System (PPBS), Robert McNamara brought the ideas behind this approach to the Pentagon in the 1960s when he hired Charles Hitch as comptroller from his prior post as head of RAND's Economics Department.³

The planning phase of the PPBS sets long-term goals. The secretary of defense announces objectives for the department in what is now called the Defense Planning Guidance. The Guidance is ultimately the secretary's document, although his own staff, the military departments, and the chairman and his staff all participate, reflecting the multiple centers of authority within the department. The document includes a variety of ways to measure progress toward the secretary's goals, including a set of illustrative scenarios describing the military events the secretary believes should guide key decisions of the department.

As administered since the late 1960s, the programming stage of the PPBS consists of the three military departments preparing a set of fiscally constrained proposals to meet the secretary's goals. These program objectives memoranda, or POMs, extend six years into the future. The secretary's office reviews the POMs to ensure they conform with the guidance provided by the secretary in the planning phase. Changes are made as required. Although the programming phase is a debate about means—which program choices best achieve the stated goals—it often reopens the debate about those goals, revisiting choices made in the planning phase.

³The spirit of the Government Performance and Results Act distinctly parallels that of the PPBS.

Once decisions about the six-year program are made, the material in the POMs is consolidated into the Future Years Defense Program (FYDP), and the department is then ready to formulate its budget for the next fiscal period. The department's constituent elements prepare budget estimate submissions based on the program decisions, reflecting latest pricing and execution experience. These are reviewed by the secretary's office, in a joint process with the Office of Management and Budget (OMB), and consolidated in the president's budget request.

The sharing of authority in PPBS reflects the reality of DoD's divided authority. It gives each element of DoD (most especially the military departments) a chance to fashion its future course within the parameters set by the secretary of defense and subject to his review and final decision. But the parameters are debated with the many elements before they are set, and the reviews of both the program and the budget include the affected parties, which are allowed wide latitude to argue their cases before the secretary makes final decisions.

Nonetheless, PPBS gives the secretary of defense the essential tool to control the department's key decisions, each of which requires resources to implement: the structure of forces, their training and readiness, the equipment with which they are armed, and the provisions set aside to sustain them in operations. At the same time, both the 1969 decision to give each of the department's constituent elements the right to prepare the first draft of the resource plan (the POM) and subsequent decisions to give each element a real voice in the process have made PPBS the vehicle these elements use to define themselves and their futures. Indeed, a military department will often speak of its "POM position" as discourse proceeds about alternatives: It is the POM position that defines where that service's leadership has decided to go and how it is going to get there, thereby providing the starting point for the debate of alternatives.

The fact that the secretary of defense can begin the process with a reasonably clean sheet of paper gives him wide latitude to reshape the department as circumstances dictate, albeit at the expense of established programs and priorities. And because the service secretaries run a similar process within their areas of responsibility (as do the heads of the defense agencies, to a lesser extent) they, too, enjoy considerable latitude. From the perspective of the individual pro-

gram manager, however, this wide latitude can lead to unwelcome turbulence as resources are reshuffled by senior decisionmakers to meet new needs within a relatively fixed budget. Thus, while senior administrators see their ability to shift resources as a strength of the process, operating elements sometimes see this as a serious problem.

Perhaps the area in which this issue arises most sharply and generates the greatest debate is investment, especially the procurement of new articles of equipment. Investment program managers continually complain about the instability and uncertainty PPBS creates for them. A variety of attempts have been made to address this issue, including reviewing stability as an explicit issue in the programming phase, and pilot efforts to manage investment programs through streamlined processes that would (at least in theory) expose them less frequently to review.

One idea DoD has considered would actually promise some programs protection from resource reallocation between development milestones. "Milestone budgeting" would give each program a budget total at each milestone sufficient to carry it to the next milestone (even if several years away), the underlying reason being that these totals can best be estimated at the milestone junctures. Between milestones, these programs would be "off limits" to resource reallocation. From the perspective of the military department secretaries and the defense secretary, milestone budgeting would reduce their flexibility and could lead them to use the operating accounts as a source of funds to meet unanticipated needs. From the perspective of those responsible for the investment accounts, milestone budgeting would promise welcome stability for programs selected (if potentially greater instability for those excluded). It would increase the risk faced by investment managers, however, because it would severely limit their ability to secure added funds between milestones if they found they had underestimated the requirements or if they encountered unexpected technical or other difficulties.

Whatever milestone budgeting's merits, the fact that it is being debated illustrates PPBS's flexible nature and potential ability to shift resources in response to changing circumstances. Because it is a process under the defense secretary's control, it can easily be changed to adapt to new problems or to try new solutions to old problems. This inherent flexibility and adaptability may be why the system has en-

duced for over a generation. Indeed, a careful examination would demonstrate that in each cycle PPBS has been administered, it has been administered somewhat differently than in the prior cycle. Sometimes the differences have been substantial and dramatic (e.g., the introduction of POMs in the late 1960s, and the inclusion of CINC advice in the early 1980s), which is why today's system is very different from the one Secretary McNamara introduced so many years ago.

DECIDING WHAT INVESTMENTS TO MAKE

One of the important clarifications that the 1958 amendments to the National Security Act made in the powers of the secretary of defense related to investment decisions. While these had traditionally been the prerogative of the military services, the amendments confirmed that Congress ultimately held the defense secretary responsible for the department's investment portfolio. Secretary McNamara capitalized on this clarified authority to impose a centralized review of weapons decisions.

Characteristics of that review process included formal documentation of decisions and their rationale, and the use of cost-benefit analyses to weigh the pros and cons of alternative courses of action. Originally resisted by the uniformed leadership, these characteristics are now widely accepted within the defense community—much more so than elsewhere in the federal government.

For major systems—i.e., those exceeding a threshold value for either development or production—the process now begins with a mission needs statement drafted by the responsible party. The system proceeds through a series of milestones, overseen by the Defense Acquisition Board (DAB), which is chaired by the under secretary of defense for acquisition, technology, and logistics with representatives from the military departments and the joint staff. The DAB's approval is required to enter each milestone phase (concept and technology development, system development and demonstration, and production and deployment).

David Packard, deputy secretary of defense from 1969 to 1971, began the practice of gathering advice on milestone investment decisions through an organized board, creating the Defense Systems Acquisi-

tion Review Council (the DAB is its contemporary successor). Packard also initiated the concept of independent cost estimates being produced by the secretary's office as a check on what he considered the too often optimistic views of program managers. DoD's reasonably good record in estimating future costs of technologically ambitious systems (which is much better than that of most federal agencies, and better than that of many large-scale private undertakings) owes a great deal to this innovation.

Perhaps the most important milestone decision for DoD is whether to proceed with production. Development expenses are usually a modest fraction (typically 20 percent) of a system's total acquisition cost. Thus, the financial burden of a development decision does not loom nearly as large as that of a production decision. Moreover, in development there is always the hope that further research will resolve any difficulties the system has encountered. The production decision involves an acceptance of the article as worth the department's investment funds. For these reasons, and because of its longstanding distrust of DoD's decisions to proceed with systems, Congress mandates that systems pass an independent test before procurement in quantity begins.⁴

DoD completely separates development from operational testing. Such tests are expensive, however, so the department is typically reluctant to spend the funds necessary to achieve high confidence in the test results.

Before and during World War II, a substantial amount of weapons production took place in government factories—arsenals or shipyards. This is no longer the case. Government-operated shipyards and depots are still responsible for much of the maintenance work on military systems, including major overhauls, but weapons systems are produced by private companies (sometimes using facilities and/or equipment still owned by the government).⁵ Thus, one of DoD's important managerial decisions is how—if at all—it wishes to intervene in the marketplace to shape the set of suppliers that bid on its work. Similarly, the contractual relationship between the govern-

⁴This requirement was initiated by Congress in the 1970s.

⁵Congress mandates the minimum proportion of maintenance work that must be carried out in government-owned and -operated facilities (currently 50 percent).

ment and the private contractor is a critical DoD administrative decision.

Defense contracting takes place under the Federal Acquisition Regulations (FAR), a regulatory code that governs all procurement by the U.S. government. A key philosophical tenet of this code is full and open competition, a factor that has an important bearing on the incentives faced by contractors, the way in which procurement is carried out, and the government's ability to intervene directly to shape the marketplace. The FAR also embodies a variety of social policy decisions that the federal government insists be reflected in its acquisition practices, most notably support to small business and special consideration for the disadvantaged entrepreneur.

Private contractors (rather than government labs) also typically carry out the development of major systems. The U.S. military acquisition system has evolved such that the firms that undertake development also undertake production. It is difficult to compete in the procurement of a system developed by another contractor,⁶ so, in general, the competition for development effectively becomes the competition for production.

Development of a system that pushes the technological frontier is risky, and private firms understandably wish to limit their exposure to such risks when undertaking development contracts. Private firms thus seek cost plus (or similar) contracts for development, while promising in various ways to hold down the costs of production. As a practical matter, this leaves the government bearing not only most, if not all, of the risk, but also the embarrassment if the risks prove greater than the contractor's estimate. In several periods, DoD attempted to limit its risks (total package procurement in the 1960s, fixed price development contracts in the 1980s), but each attempt was abandoned after being perceived as creating problems worse than the ones it was meant to solve.

All this has left DoD in an unsatisfactory situation. Competition at the development stage, when so little is known, encourages contractors to overpromise on performance, especially because they know

⁶Difficult but not impossible. In the 1980s, DoD ran several production competitions, called "second sourcing."

that securing the development contract virtually guarantees them the production contract, where most of the profit potential resides. Then, when the government recognizes that the promises were inflated, it usually must face one of two unpalatable choices: delay the program substantially to switch to another provider, or accept a substantial restructuring of the program with the current contractor.

And firms overpromise not just on performance; they often overpromise on schedule, as well. Schedule delays plus the additional time consumed by program restructurings to resolve performance shortfalls can produce substantial delays in fielding relative to initial expectations. From the contractor's point of view, the federal government can be a capricious client, changing the performance specifications in the midst of development and thus necessitating contract renegotiations and program restructuring.

A different difficulty is created because of industry's belief that research and development (R&D) is not profitable:⁷ the extent of research not directly funded by the government itself is sharply limited, and thus so is the set of choices available to DoD. Cold War budgets could support a large government-funded R&D program; but even though R&D has been somewhat protected in the post-Cold War drawdown, the budgetary appetite of a few large programs has limited the investment in innovation.

These recurring acquisition difficulties explain the perennial call for acquisition reform. The Clinton administration was no exception; nor is the current Bush administration likely to be so.

The Clinton administration's approach to acquisition reform was led off by Secretary of Defense William Perry's 1994 paper, "Acquisition Reform: A Mandate for Change." In it, Perry emphasized the loss to DoD from its alleged inability to acquire state-of-the-art commercial technology, which, he asserted, reflected the difficulties created by

⁷Indeed, it appears that many of the big R&D contracts of the Cold War earned, at best, subnormal profits, and some R&D competitions explicitly stipulated a company "investment" (e.g., the F-22) that was to be repaid through production profits. Thus, one important academic economist characterizes U.S. weapons procurement as a competition for "production prizes," with firms vying to subsidize the R&D phase (see William Rogerson, "Economic Incentives and the Defense Procurement Process," *Journal of Economic Perspectives*, Vol. 8, No. 4, Fall 1994, pp. 65-90).

the FAR and by DoD practices for doing business with commercial companies. The administration helped develop the Federal Acquisition Streamlining Act of 1994, which encouraged the purchase of commercial products whenever possible and eliminated government-unique certification and accounting requirements, especially for smaller purchases. The Act did not, however, change the principle of fair and open competition.

One of the most significant steps taken to create a more commercial environment was the decision to replace military specifications and standards. The traditional procurement process had typically relied on government-unique specifications and standards, but by 1997, several thousand military specifications and standards had been canceled or replaced by performance specifications or, when practicable, nongovernment standards.

Moving beyond these steps, the Clinton administration's second under secretary of defense for acquisition and technology, Paul Kaminski, sought to directly attack the related problems of how long it takes to acquire a system and how much systems cost. Two innovations particularly sought to change the governance of defense acquisition:⁸

- Cost as an independent variable (CAIV). The aim of this innovation was to reduce life-cycle costs by making cost a driver in system design (replacing the Cold War emphasis on performance). The CAIV picks a cost objective and focuses on cost-performance tradeoffs to achieve savings.
- Advanced concept technology demonstrations (ACTDs). The purpose of ACTDs was to shorten the acquisition cycle (and improve performance) by moving directly to fieldable prototypes. Evaluations were to take place in the field and were to be carried out, in part, by the users of the technology, who could explore how new capabilities might be used and recommend adjustments to improve system performance before a full acquisition decision was made.

⁸For a full view of Kaminski's efforts, see his prepared statement for the House Committee on National Security, "Defense Acquisition Reform," February 26, 1997, DoD Testimony, 105th Congress, first session, 1997.

These innovations were the latest in a long series of acquisition reforms that began in the Hoover commissions (1949 and 1955) and continued through the Fitzhugh commission (1970), the Commission on Government Procurement (1972), the Grace commission (1983), and the Packard commission (1986).⁹ Indeed, it can be argued that defense procurement has steadily improved over the past five decades, as measured by acquisition results (e.g., the performance of equipment in combat operations). But further improvement is still highly desirable, as can be seen in the call of Kaminski's successor, Jacques Gansler, for DoD to concentrate on cutting in half the time it takes to acquire weapons systems.¹⁰ Perhaps acquisition reform is best seen as an evolutionary, rather than revolutionary, set of changes.

DoD has also taken advantage of "other transactions" procurement authority, increasing its flexibility because fewer regulations apply to "other transactions." This form of procurement authority was originally granted to the Defense Advanced Research Projects Agency (DARPA) by the 1994 Defense Authorization Act; it was then extended to all of DoD on a trial basis by the 1997 Act. Major weapons systems that have benefited from this initiative include the Navy's Twenty First Century Destroyer Program (DD21) and the Air Force's Evolved Expendable Launch Vehicle (EELV). The hope is that the flexibility of "other transactions" authority will translate into lower costs, but it is too soon to tell yet.

ALTERNATIVE APPROACHES TO DECISIONMAKING

Ever since McNamara's tenure as defense secretary, DoD has emphasized the principle of optimization in making decisions. Optimization requires a clear statement of objectives against which the benefits and costs of alternative courses of action are weighed. The Cold War was well suited to this decisionmaking paradigm. Not only was the opponent well known, but the threats the opponent posed

⁹For a useful summary of these earlier reform recommendations, see Defense Policy Panel and Acquisition Policy Panel, House Committee on Armed Services, *Defense Acquisition: Major's Commission Reports*, Committee Print No. 26, U.S. Government Printing Office, Washington, DC, 1988.

¹⁰*Defense News*, 6 September 1999, p. 1.

were well specified. Scenarios could be devised that allowed planners to optimize their forces and programs against the threats the Soviet Union presented. Indeed, it can be argued that the U.S. success in winning the Cold War with a defense effort that represented a gradually shrinking economic burden (relative to the output of the U.S. economy) is a tribute to the effectiveness of optimization as a decisionmaking principle: it allowed available resources to be used wisely.

With the end of the Cold War, however, the decisionmaking environment changed significantly. It was no longer clear who would challenge the United States in a way that would require the use of military force, and it was no longer clear what scenarios should be used to judge the effectiveness of future forces. For the greater part of the Clinton administration, DoD focused on having to conduct two nearly simultaneous MTWs—one in Iraq and one in North Korea—as a useful benchmark. But the threat of Iraq or North Korea invading its neighbor began to appear less likely (and their forces less capable) over the course of the 1990s. Regardless of the ill intent of these two countries (and others), however, it was becoming clear that optimizing U.S. forces to fight two nearly simultaneous MTWs was impeding what was really needed: a transformation of U.S. forces to enable them to cope with the wide variety of new, often unpredictable challenges they were facing. Thus, the question became: Given great uncertainty about what opponents the United States might face in the future, and about the location and nature of the conflicts U.S. forces might face, should classic cost-benefit optimization still be the guiding principle for decisionmaking?

Cost-benefit analysis came out of an effort by social scientists to apply the tools of economics to Cold War military problems, and the same tool kit may also yield instruments suited to the uncertain post-Cold War world.

One of the basic principles of economics is that diversification of one's portfolio—i.e., hedging against a variety of possible outcomes—is the appropriate investment strategy when faced with uncertainty. To apply this principle to contemporary defense problems, one must identify the set of possible situations—i.e., the set of possible futures, or even future scenarios—for which the United States should be developing hedges. Since the forces and programs appro-

appropriate for one future will not necessarily be appropriate for another, it is only with the greatest good luck that a program optimized for one future will reasonably cover the bets that need to be made. The issue thus becomes how many bets to make and how large they should be, not which is the best single wager.

Warning and the rapidity with which U.S. military forces respond to unforeseen (and currently unforeseeable) circumstances form another approach to an uncertain security environment. If warning can be sufficiently timely or forces are sufficiently flexible in responding to the unexpected, a single programmatic solution to the defense problem might once again be appropriate. Improvement in the ability to discern and act on warning and in the flexibility with which forces respond to unforeseen circumstances can substitute for some of the “portfolio diversification” of the capabilities resident in U.S. forces that would otherwise be required to handle the uncertainties of the post-Cold War world.

ALTERNATIVE DECISIONMAKING STYLES

Decisionmaking gradually became more centralized, consistent with the Cold War emphasis on optimization and with the strengthening of the defense secretary’s powers that the 1949 and 1958 amendments to the National Security Act brought. The trend accelerated during Secretary McNamara’s tenure, in the 1960s. The secretary of defense’s office took control of the defense program, raised issues concerning service plans, and forged a set of decisions that emphasized rationalization of defense efforts in accord with optimizing criteria.

Central planning as a decisionmaking style was well suited to the challenge posed by the Cold War. It also solved the decisionmaking problem of any organization operating in a nonmarket environment in that it created a way to produce coherent and internally consistent decisions when there were otherwise no “signals” to guide the organization’s constituent elements. That said, however, central planning can also be stifling. In the uncertain post-Cold War world, it could restrict the very innovation needed to generate alternative options with which to hedge DoD’s bets.

As an alternative, the central actors in the department would set the “rules of the game” governing decisions about future forces, their training, their equipment, and their preparations for sustained operations, but would then leave much of the decisionmaking about particular choices to the department’s constituent elements. Such decentralization would be a significant shift in the managerial paradigm, but not as significant as might first be perceived. Training decisions remained largely decentralized even in an era of centralized decisionmaking, and in many ways the POM process has already operated in a decentralized manner since the late 1960s. But it would be a significant change for the management of investment decisions.

While a more decentralized decisionmaking approach might encourage innovation, it is not without its own problems. It could restrict the ability of central actors to redirect the department’s activities in response to fast-changing circumstances. If authority is decentralized, so is responsibility, which may be inconsistent with Congress’s preference to hold the top leaders of the department accountable for the department’s actions.

Decentralization would also run up against the question of how to manage the defense agencies. Created over many years (starting in the 1950s), these agencies typically arose because of the perception that it would be more efficient (or at least more effective) to have a consolidated organization carry out certain functions than to permit each military service its own capability. Many of DoD’s intelligence, research, and support functions were being carried out by these centralized organizations, and that structure would have to be re-considered in any serious effort to decentralize.

A very different management issue relates to the time focus of decisionmakers’ attention. Especially since Secretary McNamara’s tenure, the defense secretary’s focus has been on the future, on looking ahead and planning how DoD should best cope with future events. Surprisingly little attention is paid to how well the department executes the plans it has on the books. Such attention as is paid to execution is disproportionately concentrated in the very top of the department and focuses on programs that are “in trouble.” The routine monitoring of program execution is largely left to the secretary’s assistants, and to the military departments and defense agencies—in essence, a style of management by exception.

This is, of course, a sweeping generalization, and there are exceptions. Secretary Weinberger, in the early 1980s, instituted a series of secretarial performance reviews in which each military department reported directly to him on the performance of major programs once a month. He used these to monitor such issues as the health of the All-Volunteer Force and the president's strategic nuclear modernization program. In the late 1980s, Deputy Secretary William Taft experimented with a biennial POM process, using the off-year to conduct an execution review. Neither innovation survived much beyond its creator's tenure.

It is often observed that the troops on whom the boss checks frequently are the troops who do the best. Especially if a future secretary were to move to a more decentralized decisionmaking style, it would be useful to balance that style with increased attention to program execution. Such attention would have the added benefit of helping DoD more promptly resolve problems that arise—for instance, the concerns over reduced readiness due to reduced resources that existed before the Bush administration's major increases in defense spending. It would also help the department understand how the results of experiments and real-world operations inform decisions about the very uncertain future DoD faces in the years ahead.

LOOKING TO THE FUTURE

Looking to the early years of this century, two of the four enduring decisions any military organization must make are likely to continue being the focus of debate. First, despite the sharp increases in the defense budget that the Bush administration has made, the size and the structure of U.S. military forces are once again likely to be debated. Indeed, this issue has never been fully joined, despite the several major reviews conducted in the 1990s. The current force structure therefore represents more of an evolution than a definite choice geared to the realities of the present era. The strains placed on the current force by contemporary operations, plus the new missions in counterterrorism and homeland security, only add to the pressure to consider this issue explicitly.

The second enduring focus of debate is the nature of equipment that should be used to arm the U.S. force. The urgent need to recapitalize

the present generation of equipment has put this decision high on the department's agenda. In short, the new century brings to the fore a critical set of specific defense decisions that must be made, and with them comes the opportunity to consider afresh *how* those decisions will be made. It will be a fascinating period for both students and practitioners of defense decisionmaking.