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TOWARD CENTRALIZED CONTROL OF DEFENSE ACQUISITION PROGRAMS

John T. Dillard

A great deal of turbulence in U.S. defense acquisition policy has contributed to confusion during the last three years within the acquisition workforce in terminology, major policy thrusts, and unclear implications of the changes. The new acquisition framework has added complexity with more phases and delineations of activity, and both the number and level of decision reviews have increased. As a result, program managers may now have fewer resources to manage their programs as they spend much of their time and budgets managing the bureaucracy. This same framework and its associated requirements for senior level reviews are opposed to the rapid and evolutionary policy espoused and are counter to appropriate management strategies for a transformational era.

The issuance of Department of Defense (DoD) Directive 5000.1 (2003) and DoD Instruction 5000.2 (2003) is the third significant revision of acquisition policy in many years. Looking further back, these three revisions of regulatory guidance evolved from two previous versions in 1991 and 1996. Each had its major thrusts and tenets, and perhaps of most importance to program managers; each modified the "Defense Systems Acquisition Management Process" (Defense Systems Management College [DSMC], 2001) or "Defense Acquisition Framework" (DSMC, 2001), which is the broad paradigm of phases and milestone reviews in the life of an acquisition program. The purpose of this research was to examine the evolution of this framework and explain the explicit and implicit aspects of recent changes to the model to better understand its current form. Provided here is a synopsis of the most important findings. The full report of this research, examining both private industry and defense acquisition decision models is available for a more in-depth review (Dillard, 2003).

The very latest DoD 5000 policy changes came during a time of DoD transformation, which is chiefly focused on changes to force structure and weapons employment capabilities. The latest version of the 5000 series was actually drafted in the documents rescinding its predecessor. According to a memorandum signed by Deputy Secretary

of Defense Paul Wolfowitz on October 30, 2002, the series required revision "to create an acquisition policy environment that fosters efficiency, flexibility, creativity and innovation" (P. Wolfowitz, personal communication, October 30, 2002). Interim Guidance 5000.1, Attachment 1, (2002) was issued, along with the rescission, as a temporary replacement outlining principles and policies to govern the operation of the new Defense acquisition system. Among them:

> 3.1 Responsibility for acquisition of systems *shall be decentralized to the maximum extent practicable* (p. 2).
>
> 3.18 The PM shall be *the single point of accountability* for accomplishment of program objectives for total life cycle systems management, including sustainment (p. 4).
>
> 3.27 It shall be DoD policy to *minimize reporting requirements* (p. 5).

Though the 5000 series provides guidance for all levels or Acquisition Categories (ACAT) of programs, its language is particularly applicable to the largest, ACAT I, Major Defense Acquisition Programs (MDAP). In such cases, the Milestone Decision Authority (MDA) is the Defense Acquisition Executive, who also chairs the Defense Acquisition Board (DAB) as a decision-making body for program milestone reviews. There are in fact both a Component Acquisition Executive and Program Executive Officer in the hierarchy, and direct communication between the MDA and Program Manager (PM) is infrequent. Other top management stakeholders are Office of the Secretary of Defense (OSD) staff principals who sit in membership on the DAB, where milestone decision reviews are conducted. Communication between PM and OSD staff principals is more frequent, especially via the Overarching Integrated Product Team process (Office of the Under Secretary of Defense [Acquisition and Technology], 1998). As of this writing, there are a total of 25 MDAP programs in the DoD.

THE CHALLENGES OF DEFENSE PROGRAM MANAGEMENT

Defense systems projects in particular, known for their size and technological pursuits, are considered to be among the most challenging of projects. Owen Gadeken, building upon previous studies at the DSMC, concluded that the project manager competencies of systematic and innovative thinking were among the most needed and critical in order to accommodate growing complexities (Gadeken, 1997).

Inherent difficulty in the management of any program is exacerbated for the DoD by several additional factors, which have become even more apparent in the last twenty years. Large defense systems are very complex, consisting of hardware and software, multiple suppliers, etc., requiring design approaches to alleviate complexity via hierarchical decomposition into simpler subsets, etc. Rapid technology changes, yielding obsolescence, have become particularly problematic for very large systems with acquisition life cycles spanning a long period of time. Thus, it may not even be

feasible to fully define the operational capabilities and functional characteristics of the entire system before commencing advanced development (Pitette, 2001).

The DoD 5000 series acknowledges the many complexities and difficulties facing MDAs and PMs in their management and oversight of large weapon system developments. An approach to mitigate these technological challenges, especially in the post-2000 series, is evolutionary acquisition, referred to by some outside of DoD as progressive acquisition. Also advocated by the Government Accountability Office, evolutionary acquisition has evolved worldwide as a concept over the past two decades. It is an incremental-development approach, using iterative development cycles versus a single grand design. Described succinctly by the Western European Armaments Group, the progressive acquisition approach is:

> A strategy to acquire a large and complex system, which is expected to change over its life cycle. The final system is obtained by upgrades of system capability through a series of operational increments. (It) aims to minimize many of the risks associated with the length and size of the development, as well as requirements volatility and evolution of technology (Western European Armaments Group, 2000).

Very similar in description, DoD's adaptation of this approach as *evolutionary acquisition* is a major policy thrust in the series, and is the stated *preferred approach* toward all new system developments. This particular policy thrust is important to this study as it pertains to the framework of phases and decision reviews of a program moving toward completion. It is meant to change the way programs are structured and products delivered—actually separating projects into smaller, less ambitious increments. It is, additionally, one of several aspects of the new policy that affect the framework and its use as a management control mechanism.

ORGANIZATIONAL CONTROL THEORY AND DEFENSE ACQUISITION

R. Max Wideman (2000) also advocated progressive (evolutionary) acquisition and recognized senior management's responsibility for financial accountability in private and public projects and their preference for central control. He noted problems with senior management control over complex developments such as software enterprises like Defense Information Systems, even when projects were not very large or lengthy. His observations in large-complex programs align with classic contingency theory, which holds that organizational structures must change in response to contingencies of size and technology, as external environments become more complex and dynamic. Indeed, it has long been accepted that when faced with uncertainty (a situation with less information than is needed) the management response must either be to redesign the organization for the task at hand or improve communication flows and processing (Galbraith, 1973).

Gareth Morgan traced organizational theory through the past century and depicts organizations as a variety of images or metaphors in his treatise, *Images of Organization*. He warns that large hierarchical, mechanistic organizational forms have difficulty adapting to change and are not designed for innovation (Morgan, 1997). Further research by Gibson Burrell and Morgan indicate that any incongruence among management processes and the organization's environment tend to reduce organizational efficiency and effectiveness (Burrell & Morgan, 1979).

In Figure 1, an organization shown as "D" is illustrated as having incongruent relations between its organizational subsystems. Morgan's organizational development research, in accordance with the conclusions of contingency theory, makes a strong case for consistency and compatibility between these internal subsystems and changing external environmental circumstances. He warns that such an organization is over bureaucratized in its management style and will find difficulty sustaining its competitive position. He recommends organizations be designed and managed more like organizations "A, B or C." which are greater in alignment along the continuum of stable to turbulent environments (Morgan, 1997).

Gifford and Elizabeth Pinchot (1993) make an even stronger case for decentralized management in large complex organizations faced with transformational change. They suggest, as organizations today face increasing complexity, rapidity of change, distributed information, and new forms of competition, organizations must grow more intelligent to confront and defeat the diverse and simultaneous challenges. They posit that for an organization to be fully intelligent, it must use the intelligence of

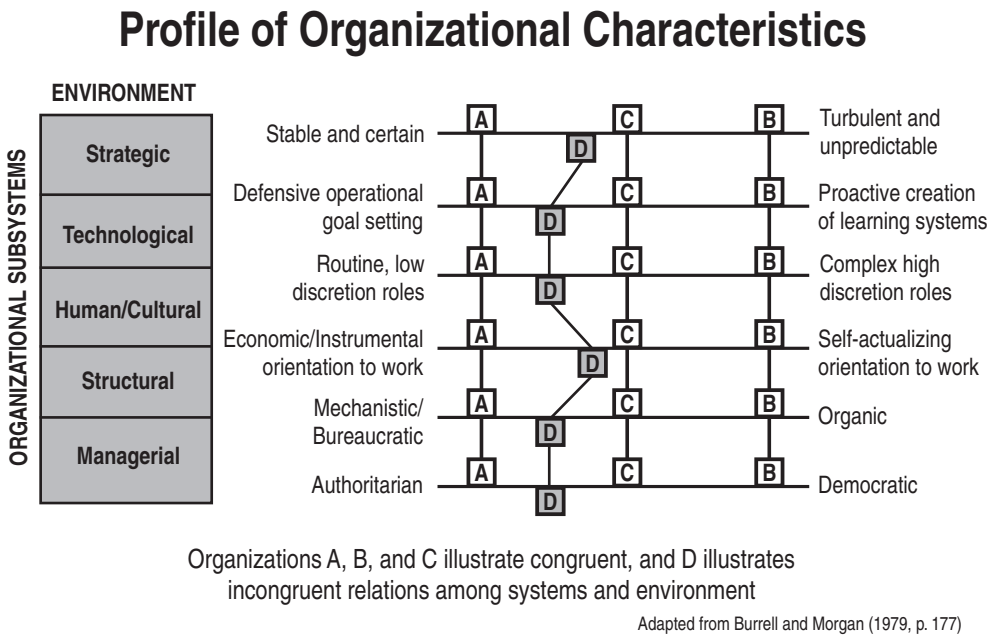


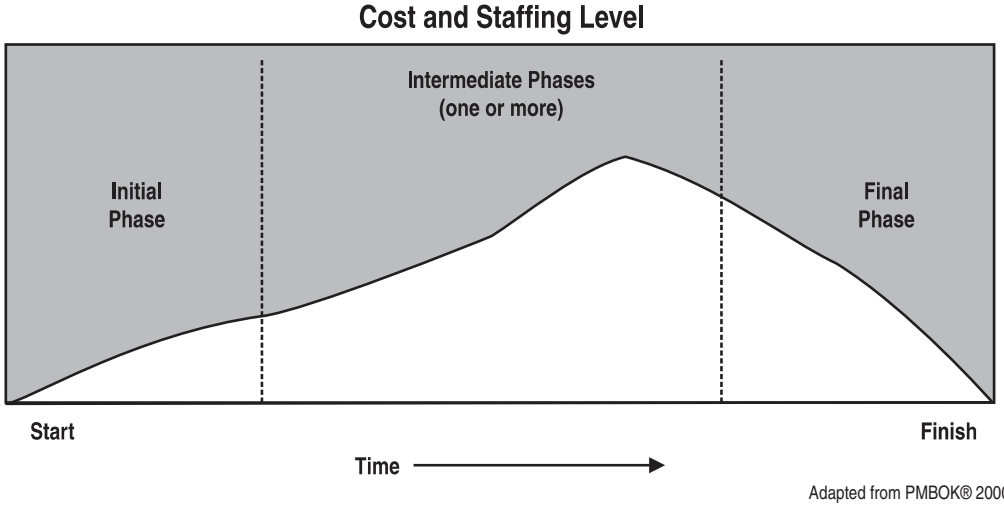
FIGURE 1. CONGRUENCE AND INCONGRUENCE BETWEEN ORGANIZATIONAL SUBSYSTEMS

its members all the way down the hierarchy. They note that with distributed information there is distributed intelligence, and failure to render authority to those closest to the problem will yield lethargy, mediocre performance, or worse—paralysis. Control will be maintained, and anarchy will not occur—but neither will success (Pinchot & Pinchot, 1993).

For large complex hierarchies such as the Department of Defense, cumulative research appears to support that decentralized control and empowerment should be an organizational strength, given today's environment of program complexity, evolving requirements, and rapidly changing technology.

AN EXAMINATION OF PROJECT MANAGEMENT LIFE CYCLE MODELS

Models have long been used to illustrate the integration of functional efforts across the timeline of a project or program. It is the successful integration of these diverse elements that is the very essence of project management. Models also help us to visualize the total scope of a project and see its division into phases and decision points. The interaction and overlapping of many and varied activities such as planning, engineering, test and evaluation, logistics, manufacturing, etc., must be skillfully managed for optimum attainment of project cost, schedule, and technical performance outcomes. The Project Management Institute's, Project Management Body of Knowledge (PMBOK®) provides generally accepted knowledge and practices in the broad field of project management. Striving for commonality across diverse business areas and product commodities, PMBOK® provides a generic framework as a structure for understanding the management of a project or program. In Figure 2, a project life cycle is depicted as costs and staffing relative to time.



Adapted from PMBOK® 2000

FIGURE 2. SAMPLE GENERIC PROJECT LIFE CYCLE

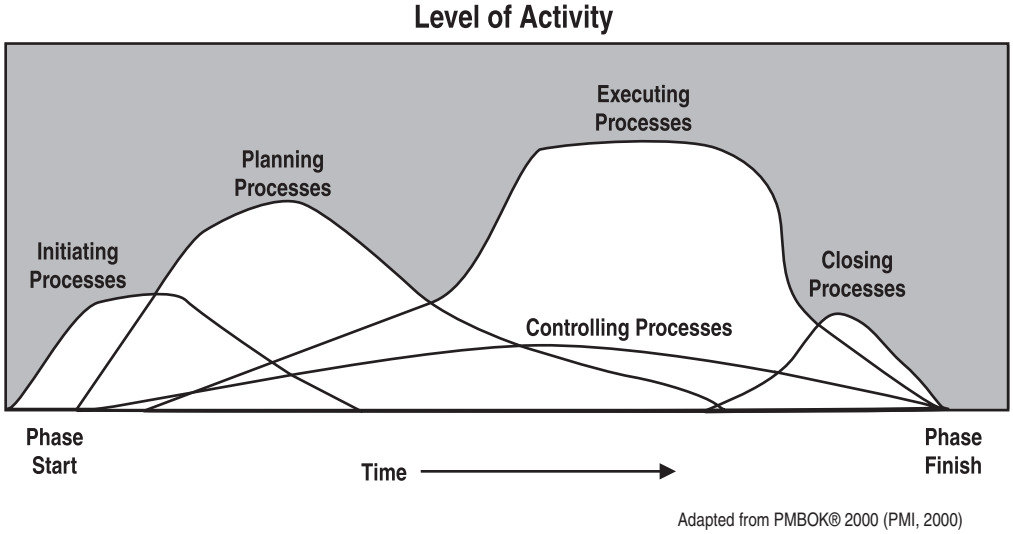


FIGURE 3. PROJECT MANAGEMENT PROCESSES

Project management difficulty climbs along a scale of system complexity and technological uncertainty, and is also simplified by division of the effort into phases, with points between for management review and decision. The conclusion of a project phase is generally marked by a review of both key deliverables and project performance in order to (a) determine if the project should continue into its next phase and (b) detect and correct errors cost effectively. These phase-end reviews are often called *phase exits*, *stage gates*, *control gates,* or *kill points* (PMI, 2000). The institute acknowledges a variety of approaches to modeling project life cycles with some so detailed that they actually become management methodologies. Further, the illustration of generic project management processes or activities across time are depicted (Figure 3) in order to convey another tenet of project management—the concurrency of efforts to minimize the project schedule.

THE EVOLVING DEFENSE ACQUISITION FRAMEWORK

THE 1996 MODEL

Models of program structure are important to the DoD in communicating the overall acquisition strategy of a large acquisition project. The 1996 revision of the 5000 series was published after a rigorous effort to reform the defense acquisition system during the first half of the Clinton administration.

The model (Figure 4.) is streamlined, simple, and depicts only four phases and four decision reviews. Low Rate Initial Production (LRIP) could and frequently did occur before Milestone III in Phase II as a Service Secretary decision. Another key change was the very deliberate change in the declaration of Program Initiation moving from

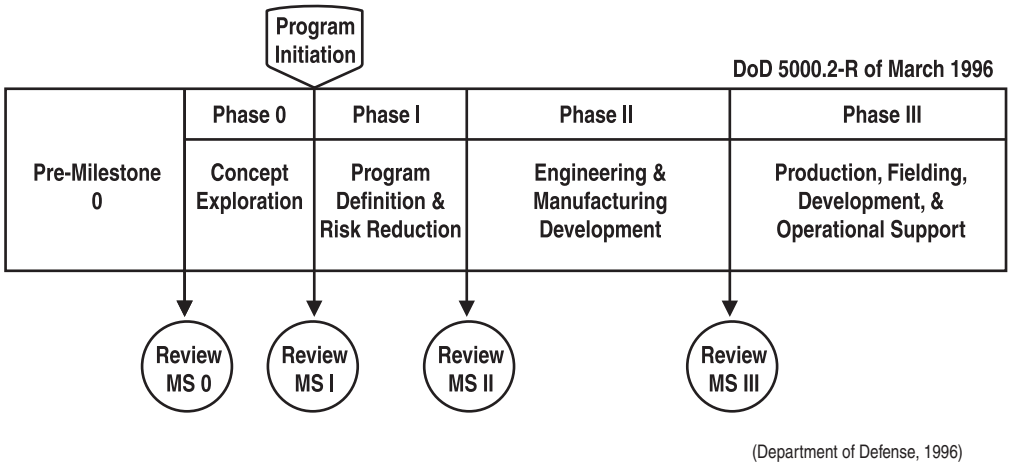


FIGURE 4.
DEFENSE SYSTEMS ACQUISITION MANAGEMENT PROCESS

Milestone 0 (in the 1991 model) to Milestone I. Program Initiation also serves as a benchmark of OSD interest in annually reporting to Congress, per 10 USC § 2220(b), the average time period between Program Initiation and Initial Operational Capability (across all ACAT I programs of any commodity). In 1994, the average was 115 months (DoD, 1996).

THE CURRENT 2003 MODEL

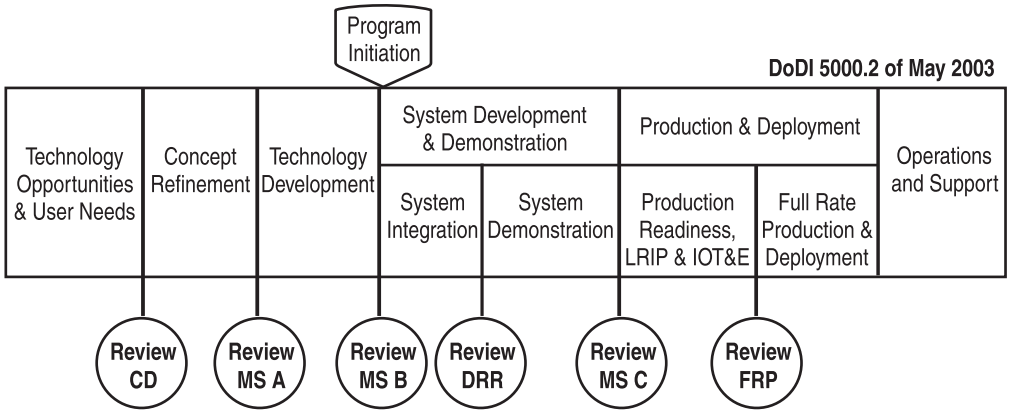


FIGURE 5.
DEFENSE ACQUISITION MANAGEMENT FRAMEWORK
(UNDER SECRETARY OF DEFENSE [USD] ACQUISITION
TECHNOLOGY, AND LOGISTICS [AT&L], 2003)

TOWARD CENTRALIZED CONTROL OF ACQUISITION PROGRAMS

The current 2003 model (Figure 5.) has five phases and six potential decision reviews. The most apparent and perhaps least significant change occurring between the 1990 and 2000 eras was from numerical to alphabetical designation of major milestone reviews. Another obvious and important change was the appearance of divided phases and within-phase decision and progress reviews. With the latest release of the regulatory series, these additional sub-phases or *work efforts*, along with *pre-acquisition activities* have brought the total number of distinct activity intervals to eight, with as many as five phases and six decision reviews—more than at any time past. Each of these sub-phase efforts has its own entrance and exit criteria, making them more in practice like distinct phases of acquisition. All of the reviews are conducted at OSD level. Newest is the Design Readiness Review, an evolution of the Critical Design Review (which had up to this time been a PM-level technical review) in the previous interim model—and prior to that a mid-phase Interim Progress Review. There are several other significant implications of this model regarding placement of the milestones and activities, not addressed in this article (Dillard, 2003).

Program reviews of any kind at the OSD level have a significant impact on program management offices.

Reviews are described in the current policy to be decision points where decision-makers can stop, extend, or modify the program, or grant permission to proceed into the next phase. Program reviews of any kind at the OSD level have a significant impact on program management offices. Much documentation must be prepared and many preparatory meetings are conducted enroute to the ultimate review. And while effort to prepare for non-milestone reviews are generally considered to be lesser in scope, a considerable amount of effort managing the decision process is still expended. A six-month timeline for these activities in preparation for an OSD-level review has been unchanged for many years (Defense Acquisition University [DAU], 2003). It outlines the requirements for meetings and preparatory briefings to staff members and committees. Some representatives from program management offices keep an accounting of travel and labor costs associated with milestone reviews for an MDAP system. While only anecdotal data was available for this research, it is apparent that a substantial amount of program office funding is expended on such items as government agency or support contractor assistance with supporting analyses and documentation, presentation materials, frequent travel to the Pentagon, and other associated expenses in preparation for high-level reviews (Anonymous Representative, personal communication, February 19, 2003).

With Evolutionary Acquisition as the preferred strategy, notional systems are now described in the policy as shorter developments (in the System Development and Demonstration [SDD] phase) with iterative Milestone B-to-C cycles. The new DoDI 5000.2 prescribes that, "In an evolutionary acquisition program, the development of each increment shall begin with a Milestone B, and production resulting from that increment shall begin with a Milestone C" (USD[AT&L], 2003, p. 10). Thus, program managers can expect to undergo the management reviews determined appropriate not only for the initial increment of development in their program, but also the reviews specified for the follow-on increments. The strategy suggests the initiation of low-rate production of an *80 percent solution* at Milestone C as the preferred approach. So a more accurate depiction of the new model, with perhaps only one *spiral* or increment of evolutionary effort is shown in Figure 6, presuming the achievement of 100 percent

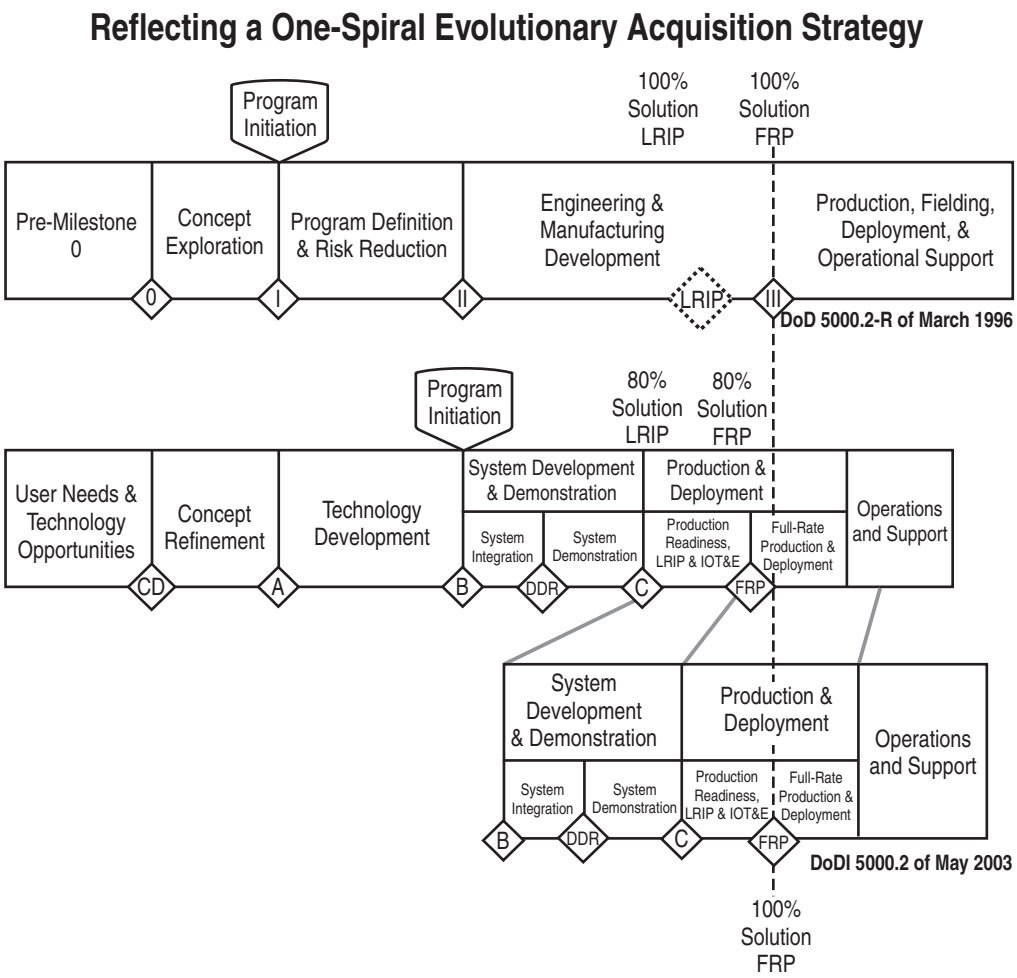


FIGURE 6. COMPARISON OF 1996 AND 2003 ACQUISITION FRAMEWORK MODELS

capability in the same timeframe as under the traditional single-step project strategy. The diamond icons represent decision reviews.

What becomes more apparent here is the increased number of actual decision reviews required, as well as the concurrent activities involved in managing a separate follow-on development increment and its requisite reviews. In fact, the most recent published guidance shows an example of a system with two increments of evolution having no less than *fourteen* reviews in its first eleven years from Concept Decision (DAU, 2003). Assuming advanced development SDD for an 80 percent solution is indeed shortened, and further assuming that concept and early prototyping phases are no longer than before, the time and effort on control activities appears almost certainly to be disproportionate within the same 100 percent system capability delivery timeline. It seems in the least to be counter to the policy espousing decentralized responsibility, innovation, and flexibility at the program management level.

On the whole, the 2003 acquisition model prescribes a very new paradigm, and only time will tell whether Deputy Secretary Wolfowitz's goals of program management flexibility and innovation are achieved.

On the whole, the 2003 acquisition model prescribes a very new paradigm, and only time will tell whether Deputy Secretary Wolfowitz's goals of program management flexibility and innovation are achieved. No major program has yet gone through the entire model, and none will for many years to come.

However, time spent *managing the bureaucracy* has long been an encumbrance to PMs. Back in 1988–1989, military Research Fellows studying commercial practices at the DSMC wrote about an imbalance of authority between PMs and the OSD staff (DSMC, 1989). Of eleven improvements they recommended to the acquisition process, number three on their list was, "Reduce the number and level of program decision milestones" (DSMC, 1989, p. 73). In the context of the 1987 Life Cycle Systems Management Model of five acquisition phases and five key decision points, they recommended that only one of these reviews be conducted at OSD level—the review for advanced development. They quoted the 1986 Packard Commission's conclusions, which said, "He [the PM] should be fully committed to abide by the program's specified baseline and, so long as he does so, the Defense and Service Acquisition Executives should support his program and permit him to manage it. This arrangement would provide much needed program stability" (Packard, 1986, p. 59).

As mentioned earlier, the contingency theory encourages senior leaders to find the best fit for their organization's structure to its environment, understanding that some

situations might call for rigid bureaucratic structure while others might require a more flexible, organic one. The concept of control is also a cornerstone of cybernetics: the study of organizations, communications, and control in complex systems. It focuses on looped feedback mechanisms, where the controller communicates to the controlled what is the desired future state, and the controlled communicates to the controller information with which to form perceptions for use in comparing states. The controller then communicates (directs) purposeful behavior (Ashby, 1960).

The fundamental need for communications constrains the options for control, making the communications architecture a critically important feature of the control system. It is often heard that with communications in today's *information age warfare*, we seek to *act within the enemy's decision cycle*. For acquisition decision makers, the information architecture is the command and control hierarchy within our bureaucracy. And the decision cycle in the course of a program still, after many years, reflects 180 days of typical preparation lead time for a decision review. This DAB decision cycle appears to be one very important process that has yet to undergo transformation.

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Similarly, when Rand authors wrote about DoD decision making pertaining to training, equipping, manning, and operating the force, they suggested that decisions should be based upon senior leadership's desired outcomes. They acknowledge that with a decentralized management style comes dilution of responsibility and accountability, unless vigilance of execution is maintained. But they agree with other theorists that centralized decision making was consistent with the cold war, and a style well suited to the 1960s, that can also be stifling and can restrict innovation (Johnson, Libicki, Martin, & Treverton, 2003).

The Pinchots do not call for decentralization to undermine bureaucracy, but to improve it. They advocate decentralization with horizontal interconnection (a network organization) between business units, to lessen the reliance upon going up the chain of command and down again for communication flow and decision. Rather than total autonomy for PMs, they support self-management, from trust, with responsibility and accountability (Pinchot & Pinchot, 1993). This thinking seems particularly appropriate to the information age and for a professionalized bureaucracy such as the DoD acquisition workforce, with disciplined standards of training, education, and experience steadily progressing since implementation of the Defense Acquisition Workforce Improvement Act (DAWIA) in the early 1990s.

CONCLUSIONS

It is evident that the debate about centralized control and number of OSD-level reviews has been taking place for a long time. The current model increases the number and levels of reviews, and their placement with regard to program events indicate that we are moving toward an even more centralized approach to control of acquisition programs. A recent GAO report calls for even more departmental controls over acquisition than are now in place (GAO, 2003). But what is perhaps even more significant than this observation is that movement toward greater centralization of control at the higher levels may be a cause for serious concern, given predominant management theory cited herein. The mainstream of thought indicates that more efficiency and effectiveness might be gained from a different approach to an external environment of instability and uncertainty, whether from unclear threats and uncertain scenarios, or from complexities of rapidly changing technology and systems acquisition.

Centralization of control is a management issue to be dealt with—the challenge to avoid anarchy, with no guidelines or parameters, as well as excessive control. Might programs actually be lengthened by more cumbersome reviews? Whether fourteen reviews in eleven years are too many is a matter of conjecture and more debate. However, it is obvious that there are more reviews today than ever before, and these do have a requisite cost associated with their execution. We will likely continue the struggle to find the appropriate balance between centralized functions at OSD and autonomy for the management of programs in both explicit or implicit management policies and frameworks. Further areas of research can perhaps be focused on the effectiveness of such reviews, and almost certainly demand that the program costs of centralized decision reviews be measured. Moreover, a study of how the DoD might exploit its current capacity via increased horizontal communication might provide insight toward attaining the decentralized empowerment it advocates.

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