A TEN-YEAR REVIEW OF THE VISION FOR TRANSFORMING THE DEFENSE ACQUISITION SYSTEM

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"With this report, then, we begin a decade-long process of reinvention."

"We hope it will transform the habits, culture, and performance of all federal organizations."

(Former Vice President Al Gore, 1993)

This paper traces the vision for reform of the Department of Defense Acquisition System from 1993 through 2003. Using a qualitative document review process, a conceptual picture of overarching themes is presented. The purpose of this paper is to provide an analysis of the change roadmap to assist building empirical research models of the effectiveness of the various initiatives, programs restructurings, and policy mandates that have all contributed to the current climate for change within the DoD and the acquisition community.

The year 2003 marks the end of a decade of concerted effort at transforming the way the government does business. A major focus of that effort has been the transformation of the way the Department of Defense (DoD) acquires new equipment through the Defense Acquisition System. In fact, the beginnings of this journal were steeped in acquisition reform. The topic has been an on-going subject with six or more articles per year dealing with acquisition reform efforts. The inaugural issue in 1994 opened with a piece by then Deputy Under Secretary for Defense (DUSD) Colleen Preston outlining the new initiatives for acquisition reform (Preston, 1994). The pages of the *Acquisition Review*

Quarterly have proven to be a forum for a fertile debate on the merits, means, and misgivings of acquisition reform. This article looks back over the last ten years and traces the path of the vision for that change.

In 1993, the National Performance Review (NPR), released under then Vice President Gore, laid out a vision for change that many have considered the landmark for a new decade of effort to change the way the government does business. This paper attempts to take a conceptual view of what evolved from that NPR mandate into the particular vision for changing the Defense Acquisition System within the DoD (Gore, 1993). What makes this a good time for reflection is the fact that near the end of 2002, the Deputy Secretary of Defense, Paul Wolfowitz issued a memorandum canceling the DoD 5000 series of acquisition policy documents (Wolfowitz, 2002).

Deputy Secretary Wolfowitz judged the latest documents to be "not conducive to an acquisition environment that fosters flexibility, efficiency, creativity, and innovation." This raises the question of what exactly happened to the vision for acquisition reform during the past decade. To answer this question the authors of this paper decided to bring together their respective academic knowledge of organizational change and the practical experience of program management to examine a decade of reform effort.

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METHODOLOGY

We conducted a broad review of literature on reform of the DoD to identify key documents that could be considered landmarks or mandates for the acquisition transformation process. We searched government documents available on-line as well as those suggested by talking with people working in the acquisition corps. We also reviewed published articles in the *Acquisition Review Quarterly* since its inaugural issue in 1994. From a total of several hundred documents collected and examined, we selected seven as dealing broadly with a vision for changing the acquisition system.

In addition to the document search, interviews were conducted with a number of individuals in the Pentagon, the acquisition community, program managers, and industry leaders. The purpose of these interviews was not to collect a sample of data but to clarify the understanding of the documents and the intent of the some of the terms, titles, and statements to avoid misinterpreting the written records. We also used the interviews to confirm that we had selected what people involved in defense acquisition generally consider the landmark documents that have set the direction of change during the decade. Since the overall purpose of the report was very broad we agreed to a complete non-attribution arrangement with all the people interviewed.

We distilled the contents of the seven documents into tables highlighting their key elements for ease of comparison. From the summarized tables and interviews, we traced the evolution of the different aspects of the overall vision for change including the drivers (perceived problems), and the description of the desired end state. From our analysis of key milestone documents we developed a conceptual picture of how the transformation vision has evolved over the decade. Finally, we propose several observations that should be addressed with empirical methods to help answer important policy questions regarding acquisition reform. We hope this review effort will help spawn research and debate for charting the way towards a new and better acquisition system for the DoD.

THE NATIONAL PERFORMANCE REVIEW — 1993

The decade beginning in 1993 certainly was not isolated from the previous decades and prior attempts at reforming the DoD. David Packard had a large influence on the reform movement starting with the Packard Initiatives in 1969 through the Packard Commission and its report, "The Quest for Excellence" delivered in 1986. This era closed with Secretary of Defense, Dick Cheney's "Defense Management: A Report to the President" in 1989. These efforts attempted to deal with ballooning costs, duplicative programs across services, and the authority lines for determining acquisition priorities, budgets, and program evaluations but often also added layers of reporting and bureaucracy. This led Thomas McNaugher to lament at the end of the 1980s that the defense acquisition system may actually be worse for the reform efforts of that decade (McNaugher, 1990).

Without ignoring the impact of prior efforts, we limit this review to the decade that began on September 7, 1993 when Vice President Al Gore released his landmark report: "Creating a Government that Works Better and Costs Less: The Gore Report on Reinventing Government" as part of the NPR. While the Gore Report primarily focused on government waste and inefficiency, elements of the report impacted efforts at transforming the way the government conducts the business of defending the country as well. While the Gore report only mentioned three things directly related to acquisition reform, the fact that the Office of the Vice President was behind the concepts carried considerable weight. As related to defense, the Gore Report called for a need to 1) simplify procurement, 2) eliminate regulatory burden and 3) rely more on the commercial marketplace. These goals spoke of a need to change the culture of how the government conducts the business of defense.

The key theme of the NPR was that government was broken and the system needed to be overhauled from the top to the bottom to regain effectiveness. After the release of the NPR, many people in the government bureaucracy faced uncertainty about just how the government would function in the future. Such a broad

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change mandate coming from such a high level created a sense of imminent change. In response, many departments began to develop change programs including the DoD and its new Secretary, William Perry. The release of the NPR was quickly followed by a document outlining how and why change was needed within the DoD.

A MANDATE FOR CHANGE: THE PERRY MEMO — 1994

On February 9, 1994, six days after being confirmed as Secretary of Defense William Perry released a memo titled, "A Mandate for Change" calling for a complete cultural change in how the DoD operates. Budgetary and efficiency issues remained important guiding principles drawing from the NPR, but the focus shifted from processes to outcomes (capability in the field). The main directives of the Perry Memo were based upon themes in the NPR. First, he called for a cultural change pointing out that the systems themselves were dysfunctional. Second, the outcomes were not effective (primarily too slow). Third, the obstacles to change were mostly internal (bureaucratic inertia). Secretary Perry clarified the essence of the need for change in his memo and created the sense of urgency that required immediate action. It also became clear that the DoD was not exempt from the NPR mandated transformation effort in the Federal Government.

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If the NPR showed what was wrong with government, then the Perry Memo demonstrated what was wrong with the DoD and why it had to be changed now. With many examples (following the NPR format), Secretary Perry carefully built an argument to show the failure of existing systems to deliver effective solutions to the warfighters. In particular he noted the threat of a reduced defense industrial capability in the post–Cold War era. In response to the challenge laid out by Secretary Perry, an office was created to specifically deal with transformation issues and to ensure that change was made in an effective way.

ACQUISITION REFORM UNDER THE DUSD (AR) COLLEEN PRESTON — 1995–97

After the Perry Mandate in 1994, a special office of Deputy Under Secretary for Defense (Acquisition Reform) (DUSD[AR]) was established with Colleen Preston the first office holder. Her vision for change was based heavily upon events at the time including the recent passage of the Federal Acquisition Streamlining Act of 1993 (FASA). The formation of the AR office was a strong signal to the acquisition community that change was coming as a result of the Perry Memo. Colleen Preston became a spokesperson writing articles in the *Acquisition Review Quarterly* (Preston, 1994), testifying before Congress (Preston, 1995a), and appearing in other DoD publications (Preston, 1995b).

Her mandate was to find ways to address the declining industrial capability while improving system responsiveness and reducing costs again echoing the main drivers of the Perry transformation vision. It thus was a mandate for both increased efficiency and effectiveness while restructuring the industry-government relationship base.

This was obviously a daunting task especially given the size and inertia of the defense industry and the acquisition community in general. DUSD(AR) Preston set out to build a specific change vision around the elements of the Perry Memo by importing best practices from the business world.

Three specific initiatives probably best characterize her efforts: the implementation of Process Action Teams (PAT), the adoption of Integrated Product Teams (IPT), and efforts made to capture lessons learned within the DoD and the acquisition change process itself. All three of these have endured within the broader acquisition community as acceptable methods of operation throughout the decade.

A major focus was directed toward rewriting the DoD Directive 5000.1 and the DoD Instruction 5000.2 documents. At the same time, a project was started for creating desktop PC accessible tools for disseminating the new policies to the acquisition community. This effort involved collecting best practices, success stories, lessons learned, and communicating them as widely as possible across the acquisition community. Practices were identified and borrowed from industry in an effort to reduce lead time and cost in getting state-of-the-art technology into the hands of warfighters. A key component of this approach involved using commercial suppliers rather than defense-only suppliers to take advantage of the relaxation of military specifications (MILSPECs) and the policy implications of the Federal Acquisition Streamlining Act (FASA). This implied further shifts in the defense industrial base requiring fundamental changes in the contracting relationship between the government and its key suppliers.

DEFENSE REFORM INITIATIVE — COHEN 1997–99

At the end of 1997, acquisition reform efforts were centered in an office called the Defense Reform Initiative (DRI). Secretary of Defense William Cohen in the DRI Report in November 1997 reiterated the vision and urgency of continuing to reform the way the DoD conducted business. The key assumption of the report was that under constrained resources and new threats, existing resources must be "reallocated from overhead and support activities to our fighting forces." DRI also took on the task of achieving a "Revolution in Business Affairs (RBA) to support the Revolution in Military Affairs (RMA) already underway" (Defense Reform Initiative [DRI] Report, 1997, p. ii).

> Reducing overhead and support structures by bringing the revolution in business affairs to DoD will be critical to achieving the revolution in military affairs. (DRI Report, 1997, p. ii).

The transformation of the military was driven by the guidance in the *Joint Vision 2010* document that outlined how the future military forces will defend the country. A central element of that vision is maintaining a superior ability to flow information from and to the battlefield. This information flow capability struck a chord with the acquisition community because the bureaucratic jams described in the NPR and the Perry Memo pointed out that it was the supply and support services that were slowing down the military's responsive capability. The new threats would not allow for this slack in the support system. The acquisition and

support activities must be brought up to speed with the technology and information flows to the field.

This vision of a *back-office* transformation to support the field operations became an identifiable link between acquisition reform and military effectiveness. This pointed connection may have been much more actionable than the more general *government is broken* mantra of the NPR and Perry Memo. While a boost to the sense of urgency, the vision also took on a programmatic focus in the sense that the goal of reform became shortening the technology development cycle time, speeding field delivery, and doing both at a lower cost. For example, the 5000 rewrite became a top priority and the implementation of cost-saving processes the critical tasks. In the midst of this process improvement the focus on fundamental cultural change diminished.

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Of the many policy and structural changes made, the Defense Management Council (DMC) was one of the most significant. By appointing a high level group representing all of the services, the intent was to bring focus and momentum to the change efforts. The decision read as follows: "Establish a Defense Management Council (DMC) to serve as the Board of Directors for the Defense Agencies and to oversee the continued reengineering of DoD." (DRI Report, 1997, p. 19). The goal was to get senior leadership involved in the change process thereby circumventing bureaucratic inertia and resistance to change inherent in any large organization.

While it is clear that change must be supported at the top, the momentum for change may not have increased with the addition of the DMC as a monitor of reform. Being a representative body, it may have had a built-in bias for protecting the status quo rather than advocating change.

THE ROAD AHEAD — 1999 (2000) GANSLER DUSD (AT&L)

The next major direction change came in 1999 with the issuance of a document called *The Road Ahead: Accelerating the Transformation of Department of Defense Acquisition and Logistics Processes and Practices*[1] (Gansler, 2000). This document laid out the framework for the Revolution in Business Affairs (RBA) to support the term Revolution in Military Affairs (RMA).

The RMA set out objectives that would have to be met in order to ensure military success against future threats and enemies. The RBA was meant as a way of stating that delivery to the field required a different management of the acquisition and logistics supply chain behind the new military. The message was clear: If the military had to change to meet new threats, the support system had to change to supply the new military.

The DRI's vision documented in *The Road Ahead* clearly shows an overall *faster/cheaper* simplification of the transformation mandate. There was much more emphasis placed on *cost* issues and less focus on cultural change of the bureaucracy. The three goals were 1) faster (reduce average acquisition cycle time), 2) cheaper (lower total ownership cost in program costs and logistics support), and 3) cheaper (lower overhead costs of acquisition and logistics).

Even though the argument of cultural change and defense industrial base sustainment had faded, this document was widely circulated and quoted as the new direction for maintaining the change momentum. This document brought the full force of the change effort to bear on reducing costs in the bureaucracy thereby freeing up funds and time to improve deployment to the field. The document gave impetus to the further use of commercial techniques and to a greater use of outcome driven performance improvements. This meant more performance-based contracts, commercial business practices and flexible responsibility at the program management level.

These changes had a profound impact on major acquisition programs such as the RAH-66. From the first contract award after gaining approval to proceed into Demonstration and Validation (MS I) in 1991, the RAH-66 Comanche Program underwent a series of directed restructures as DoD priorities shifted during this reform decade. With each restructure, the entire program's Training and Doctorate Command (TRADOC) approved requirement and contract went under review and updating. Accommodating the changing acquisition environment, from MILSPECs to commercial standards coupled with a greater reliance on performance based contractual agreements, each restructure adopted, or was forced to adopt, the new acquisition reform initiatives.

One perhaps unintended result was that the full responsibility for total system integration via performance standards migrated to the contractor resulting in the perception that the government Program Management Office (PMO) performed little more than contractual oversight via participation in the IPT process. The paradigm of risk ownership migrated away from the contractor from the Lehman Years Fixed Price Research and Development (R&D) contracting methods where the burden of program risk rested primarily with the contractor. During Pete Aldridge's tenure as Defense Acquisition Executive (DAE), he continued the transition of risk from the contractor to the government by formally emphasizing that the burden of risk in the execution of complex development and integration programs will be placed squarely on the shoulders of the government.

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Achieving Key Performance Parameters (KPPs) was no longer a decision of which engine, gun, or rotor system; but how much shaft horsepower, how many rounds per minute, and what rate of climb. For example, the initial weight and cost goals for Comanche as directed from then Army Acquisition Executive (AAE) James Ambrose in 1987, was for Comanche to weigh no more than 7,500 pounds and cost no more than $7.5 million per aircraft. Although noble goals, they were not performance-based objectives. However, regardless of the acquisition reform methods, these two goals continue to haunt the program as measures of how much the aircraft performance has changed and degraded over time. This raises an important reform question of which standards will be used

to measure reform progress? These issues demonstrate the need for clear vision of the end state, not just the savings or speed that the process changes hope to achieve. What is the vision for how weapons systems will be acquired in the future? How will programs currently in the pipeline be measured when they were started under one system, modified numerous times as the Comanche was, and perhaps finished under a third acquisition environment?

The Road Ahead was also the launching document for the third reform program office under the auspices of the DUSD Acquisition, Technology and Logistics (AT&L) Pete Aldridge called the Office of Acquisition Initiatives (AI). The AI office continued to work through 2002 on a number of initiatives, the major one being to rewrite the 5000 series of documents guiding acquisition policy. Other efforts included a new guide to managing intellectual property, program risk management, and contracting tools (cost as an independent variable, earned value management and performance base contracting, etc.). The Office of the Secretary of Defense (OSD) AI worked to document reform progress and cost savings. The office also worked hard to get the new information disseminated to the acquisition community. A desktop reference was put together allowing on line access to many of the policy and guide materials for acquisition.

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The Defense Acquisition University (DAU) was reorganized and decentralized into five regional campuses to get closer to the customers. Many of the 5000 changes appeared as new directives for program managers' compliance. Faced with a growing list of prescriptive compliance items to document adherence to reform, some program managers began to view these reform efforts as burdens rather than process improvements. Realizing the reform cycle had come full circle to where it was creating the additional paperwork it was supposed to eliminate might have contributed to some of the cynicism toward acquisition reform in the program offices during this later part of the nineties.

For example, the burden to accommodate the best practices in measuring earned value of work performed within the confines of a large R&D program was particularly difficult as more and more contracts were awarded to partnerships and Joint Ventures. Few realized how difficult a task it would be to merge two completely different cost accounting paradigms into a single Earned Value Management System (EVMS) document. For Comanche and other large complex, and long running programs, the process was even more complex as the mergers and acquisitions of major Defense contractors brought the entire DoD helicopter industry dangerously close in terms of labor and overhead rates.

Additionally, as Comanche underwent a series of four major restructures throughout the 1990s, measuring earned value from a realistic and established baseline was seldom more than a two-year event. It was no surprise that Boeing and Sikorsky enjoyed EVMS metrics, which seldom deviated from 1 over a

ten-year period. It was not until the MS II contract award that the EVMS data being reported indicated that neither contractor could keep up with the planned work of funding. Although criticized for often shifting the baseline work, the EVMS process implemented by the Comanche contractors provided a clear picture as to how far behind schedule and over budget the program was headed just six months after the contract was awarded in 2001.

During the most recent restructure of Comanche, the Program Manager enforced contractual requirements for the Joint Venture to implement an integrated management plan that accommodated differences in manpower loading, overtime rates, and labor rates across the two companies to reflect more accurate and timely EVMS information. These are examples of how reform efforts often require more attention than imagined to implement and have consequences in industry, labor, and commercial markets that affect the outcome of initiatives.

RUMSFELD'S VISION — SEPTEMBER 10, 2001

The events of September 11, 2001 raised dramatically the urgency of solving acquisition problems. Ironically, on September 10, 2001, Secretary of Defense Donald Rumsfeld delivered a key speech outlining his determination to *liberate the Pentagon from itself* by reducing bureaucracy and simplifying the acquisition process. This document laid out the new secretary's vision for building the future military and the defense system to support it. The *system* was the enemy and needed to be defeated. "The topic today is an adversary that poses a threat, a serious threat, to the security of the

United States of America. It's the Pentagon bureaucracy" (Rumsfeld, 2001). The unfortunate events of the next day undoubtedly lessened the impact of these words on the change process. However, they still are evidence of the intent, vision, and determination to transform the acquisition system.

Rumsfeld's vision contained several key elements. Notably he again emphasized the concept of commercial outsourcing to save money and a renewed emphasis on doing only the functions directly related to warfighting. With respect to technology, he called for new efforts to streamline the development process to catch up with private sector development cycles. Finally, he made a strong case for improving the retention of a quality workforce in the entire military from the uniformed personnel to the acquisition corps. This last goal was probably the most significant new focus and reflected a growing realization during the late nineties that the DoD was losing ground on the labor front.

The Goldwater Nichols Act of 1986 coupled with the Secretary of Defense Dick Cheney's Defense Management Review of 1989, formed the groundwork for a professional acquisition workforce by "establishing in each military department a dedicated corps of military officers who will be acquisition specialists" (DoD DMR, 1989). This sweeping change was not accepted across the board as a good thing for the services, but according to the General Accounting Office (GAO)

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investigations conducted after 1986, the Army was clearly leading the way to implementing the provisions of Goldwater-Nichols and Defense Management Review (DMR). Major General Dick Stephenson, then the senior Army aviation acquisition professional on active duty, stated that the full implementation of the Army Acquisition Corps would result in the "formation of another Army Veterinary Corps"… where the officers of the corps would lose all credibility with the warfighting side of the Army.

On the civilian side of the labor force, as a result of successive hiring freezes and senior grade restrictions, the average age of the workforce is rapidly approaching 50 years of age with few experienced acquisition civilians ready to fill the gap of the retiring workforce. Over the last ten years, the acquisition workforce grew farther and farther apart from the main stream Army. This rift in cultures between the warfighters and acquisition officers forced the most senior officers in the Army to question the net value of acquisition general officers to the business case of the Army.

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The Comanche program, since its inception as the Light Helicopter Experimental (LHX), was managed by a General Officer; but in 2001, with the Comanche budget exceeding $1 billion annually, the Army downgraded the Program Manager (PM) position to a Colonel. Ironically, this degradation of rank compared to authority and responsibility is in contrast to the warfighting changes to the Army in the Objective Force, in which more senior ranking personnel command smaller units. Between 2001 and 2002, the Comanche Program Management Office (PMO) lost over 120 years of civilian experience as all of the most senior acquisition personnel in the PMO attained retirement age and departed government service over a nine-month period. In order to fill these vacancies, the PM was forced to seek candidates outside of civil service in order to find qualified replacements because no qualified government candidates applied. This trend seems to support the shift in vision by Rumsfeld toward development of the acquisition corps itself.

CANCELLATION OF 5000 SERIES — OCTOBER 30, 2002 USD PAUL WOLFOWITZ

On August 29, 2002, a draft memo was circulated from the Secretary of Defense titled: *Operation of the Defense Acquisition System* issuing interim guidance for the acquisition community in light of the pending cancellation of the 5000 series of documents. The memo to cancel the 5000.1 D (directive), the 5000.2 I (instruction), and the 5000.2 R (regulation) documents was later issued by the DUSD (AT&L) Paul Wolfowitz on October 30, 2002. Canceling all of these sent a strong signal throughout the acquisition corps that incremental and piecemeal programmatic approaches were not acceptable solutions to the transformation problem.

The cancellation memo laid out a clear message by stating that the 5000 documents are "overly prescriptive and do not constitute an acquisition policy environment that fosters efficiency, creativity, and innovation." It went on to state further that the interim guidance issued separately is

Table 1. The Seven Key Documents Reviewed

Document	Title	Definition of Problem	Acquisition Impact	Focus of Effort
National Performance Review VP Al Gore Sept. 7, 1993	From Red Tape to Results: Creating a Government that Works Better and Costs Less	1. Rules made for era of stratified retailing. 2. Overly focused on fraud prevention. 3. Govt required specs on non-essential items. 4. Govt spends more for same commercially available parts. 5. Private sector compliance burden of regulations. 6. Proliferation of unneeded regulations.	1. Unnecessary rules and procedures. 2. Heavy burden of bureaucracy and procedures. 3. Adds time to process and paperwork. 4. Wastes money on specifications not important. 5. Compliance cost estimated at $430 Billion/year. 6. Lack of change motivation (system inertia).	1. Simplify the Procurement Process. 2. Rely More on Commercial Marketplace. 3. Eliminate the Regulatory Burden.
Perry Memo Plan Delivered to House Armed Services Committee and Governmental Affairs Committee Feb. 9, 1994	Acquisition Reform: A Mandate for Change Maintaining Technological Superiority & a Strong National Industrial Base	1. Industrial Age Big Contracts Mentality. 2. Low Risk and High Control of Process. 3. DoD small % of commercial purchases. 4. Cycle Time 10+ years vs industry 4 yrs. 5. Compliance burden of regulations. 6. Dispersed functional responsibility.	1. Consolidation of industry and erosion of base. 2. Obsession with system, process and programs. 3. Lack of interest from commercial sector (no wins). 4. Deployment of obsolete technology. 5. Unnecessary cost, wastes money for field. 6. Lack of change motivation (system inertia).	1. Cultural Change. 2. Technology Flow. 3. Bureaucracy.
DUSD (AR) Acquisition Reform – Colleen Preston - 1995 Reengineer the Acquisition System	Statement by DUSD (AR) Mrs. Colleen Preston on Acquisition Reform before Committee on National Security US House of Rep.	1. Warfighter is Customer but is not present. 2. Change is not embraced within the DoD. 3. Do not emulate commercial best practices. 4. Too many defense only suppliers. 5. Not oriented on performance outcomes.	1. Long Acq Lead times 2. No one willing to take any risk. 3. High costs and inefficient. 4. Some suppliers are not willing to sell to DoD. 5. Excessive protests filed as way of getting business.	1. Improve Responsiveness. 2. Reduce Costs. 3. Facilitate Merger of Defense and Commercial Industrial Bases.
Defense Reform Initiative Report (DRI) 1997 William Cohen Secretary of Defense	Leading Change in a New Era (The DRI Office was officially launched in May 1998)	1. Lack of interest from commercial sector. 2. Consolidation of industry; lack of base. 3. Revolution in Military Affairs needs support to work.	1. Potential deployment of obsolete technology. 2. Obsession with system, lack of motivation to change. 3. Unnecessary costs wastes money for field.	1. Reengineer. 2. Consolidate. 3. Compete. 4. Eliminate.

Table 1. The Seven Key Documents Reviewed (continued)

Document	Title	Definition of Problem	Acquisition Impact	Focus of Effort
The Road Ahead June 2, 2000, USD(AT&L) J.S. Gansler, Launch of the Acquisition Initiatives Office in the OSD	Accelerating the Transformation of Department of Defense Acquisition and Logistics Processes and Practices	1. Supporting the RMA to meet threats of asymmetric warfare. 2. Need for high interoperability among U.S. Forces. 3. Development dollars squeezed by flat budget lines and rising support costs.	1. Acquisition support system not in tune with RMA (needs RBA in department). 2. Too many barriers to change. 3. Not keeping pace with technology development (falling R&D investments and cycle times).	1. Reduce acquisition cycle times for technology. 2. Lower total ownership costs. 3. Reduce overhead of support (A&L).
Rumsfeld's Vision of Reform Sept. 10, 2001	Bureaucracy to Battlefield	1. Waste of resources. 2. Outdated systems. 3. Redundant processes.	1. Supporting the RMA to meet threats of asymmetric warfare. 2. Need for high interoperability among U.S. Forces. 3. Development dollars squeezed by flat budget lines and rising support costs.	1. Reduce cycle time. 2. Improve workforce morale. 3. Strengthen health of industrial base. 4. Leverage commercial technology insertion.
Cancellation of the 5000 Series Wolfowitz, 2002 Rapidly deliver affordable, sustainable capability to meet warfighter needs	Draft Memo Circulated (later signed)	1. Current 5000 set is overly prescriptive (The PM shall…). 2. 5000 does not create the desired new acquisition policy environment. 3. Does not foster efficiency, creativity, and innovation.	1. Remove proscriptive nature of 5000 series to allow more PM discretion.	1. Flexible. 2. Innovative. 3. Speed in technology deployment.

to "rapidly deliver affordable, sustainable capability to the warfighter that meets the warfighter's needs." Thus the three tenets from 'The Road Ahead' of faster, cheaper, cheaper were reiterated here in the interim guidance but the driving reason for change was still a need for fundamental cultural change (fostering the favorable policy environment).

The faster/cheaper message does not carry the same kind of urgency for deep change that the Perry memo called for.

Thus, it is understandable that the DRI and its successor, the OSD AI office, operated primarily from a mandate of programmatic fixes to demonstrate cost savings/avoidance. A year after the Rumsfeld September 10, 2001 call for an overhaul to the Pentagon bureaucracy, the efforts (5000 updates, program management tools implementation, etc.) were still not structured in a way that could add up to the fundamental type of change demanded by Perry in 1994, Gansler in

1999, or Rumsfeld in 2001. Table 1 summarizes the key points from each of the eight documents reviewed and forms the baseline of reference for this paper.

Next we examine the eight documents in light of the key drivers of acquisition reform. Then we return to look at the tensions remaining in the change vision and what can be learned from this decade of change effort.

THE NEED FOR CHANGE

CHANGING NEEDS OF WARFIGHTERS

Many recurring issues have driven efforts at change in the DoD over the last decade. Three key drivers continue to surface throughout the statements and documents relevant to transformation. First are the changing demands of the warfighters. The battlefield has become a technological platform. To respond to growing unconventional threats and asymmetrical warfare, military requirements have been shifting over the last decades.

For example, the Comanche program has evolved over the years to meet a new set of requirements and warfighter needs. The Comanche (RAH-66) is now more of a systems integrator to the overall force than a modern attack helicopter. By morphing its role it has remained relevant to the new needs of the force. At the same time, the program has languished for decades competing for funds and attention to actually bring the technology to the battlefield. It has faced serious technological obsolescence issues due to long development cycles and less than desirable program structuring (Birmingham, 2002).

The vision of transformation as driven by the changing needs of warfighters (customers) is outlined in Table 2. The term *warfighter* does not appear in the NPR, but it was quickly adopted within the DoD to mean the ultimate *customer* of the acquisition system. Since the needs of the customer were changing, the support structure of the acquisition community must change to meet those evolving customer needs. The warfighter as customer seemed to lose some focus near the end of the 1990s not appearing in documents relating to the DRI and OSD AI. As the decade progresses, more and more attention was given to the technology flows, the shifting defense industrial base, and slipping market power of the DoD in breaking technological fields perhaps assuming the warfighter needs were being addressed.

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SHIFTS IN MILITARY-INDUSTRY TECHNOLOGY FLOWS

The second driver closely linked to the first is the commercial rate of technological development. Military acquisition cycles are as much as 2.5 times longer than commercial cycles. Technological advances can quickly appear on the threat horizon creating the very real possibility that U.S. Military personnel could be technologically inferior to a foe in the field solely due to the slowness of the acquisition support process. Secretary Rumsfeld directly attacked

Table 2. Tracing the Changing Needs of the Customer (Warfighter)

Reference Document	Characterization of Acquisition Problem	Reference to Warfighters Needs
National Performance Review Gore, 1993	"Industrial-Era Bureaucracies in an Information Age"	"tough global competition." "demanding customers."
Perry Memo, 1994	Current acquisition system does not support a strong national defense industrial base.	"the threats are changing and unpredictable."
Colleen Preston, 1995 (p. 2)	"new national security challenges require a more flexible, agile and timely acquisition process." Lead times are too long to field equipment/technology.	"meet warfighter needs"… we must be 'capable of meeting unpredictable needs.' Warfighter is customer but is not present in the process.
Defense Reform Initiative, 1997	Reallocating resources 'from overhead and support activities to our fighting forces.	Enhancing efforts to defend against asymmetric threats. Joint Vision 2010; information use and denial in battle.
The Road Ahead, 1999	Revolution in Military Affairs must be supported by Revolution in Business Affairs.	Unpredictable threats, rogue nations, use of weapons of mass destruction (WMD).
Rumsfeld's Vision, 2001	Pentagon Bureaucracy. Institutional Inertia. Dollar wasted is one denied to the warfighter (efficiency) Overcapacity of bases.	Must change to meet new world challenges of multiple threats of unpredictable source and nature. Excellence in functions related to warfighting.
Wolfowitz's Memo Cancelling the 5000 Series	Overly prescriptive; Does not foster efficiency, creativity and innovation.	"to rapidly deliver affordable, sustainable capability to the warfighter that meets the warfighter's needs."

this bureaucratic threat on September 10, 2001 when he outlined his vision for the new way of doing business in the Pentagon. One outcome of changes in technology flows is that the military has found itself struggling to keep pace with technological developments due to either disinterest on the part of commercial developers or cumbersome DoD acquisition systems.

The dynamics behind this shift in market power (the DoD used to be the major buyer of technology) goes back to the aftermath of World War II. As wartime production ended, the Cold War helped sustain predictable and steady

Table 3.
Tracing the Changing Nature of Technology and Industry Dynamics

Reference Document	Characterization of Acquisition Problem	Reference to Industry and Technology Dynamics
National Performance Review Gore, 1993	"Industrial-Era Bureaucracies in an Information Age" Faulty economic assumptions of scale efficiency and faulty managerial assumptions of audit, compliance and control.	"tough global competition" "demanding customers"
Perry Memo, 1994	"shrinking defense industrial base;" "commercial technology advancements are outpacing DoD sponsored efforts."	1965 Military consumed 75% of semiconductor production; 1995 consumed around 1%. Commercial design cycle is 3-4 yrs; DoD 8-10 yrs.
Acquisition Reform, DUSD(AR) Colleen Preston, 1995	Too many defense-only suppliers. "facilitate the merger of the defense and industrial bases.	Some suppliers unwilling to sell to DoD (hassle factor prohibitive). Not emulating best commercial practices.
Defense Reform Initiative, 1997	Consolidation of industry and erosion of core capabilities. Lack of interest from commercial sector.	RMA will outrun ability of Acq System to support it. Deployment of outdated technology to the field.
The Road Ahead, 1999	Logistics response too slow; Acq cycle too long.	Integrate a civil-military industrial base.
Rumsfeld's Challenge, 2001	Bureaucratic inertia; Excess infrastructure. PPBS outdated.	Technology moves faster than the DoD System. Deploying outdated technology.
Cancellation of 5000 Series, Wolfowitz, 2002	Rapid movement from S&T to Deployment and FieldingIntegrated T&E Improved Cycle Time	Overly prescriptive regulations do not foster innovation and flexibility in program management to keep up with technology.

TERMS:
   PPBS – Program Planning Budget System
    S&T – Science and Technology
    T&E – Test and Evaluation
   RMA – Revolution in Military Affairs

improvements in materiel and systems to counter the static Soviet threat. As the technology boom of the nineties took off and the Cold War ended, industry rushed off to richer commercial markets and the military industrial base was threatened with an erosion of core capability. The defense industry consolidated as major program awards dwindled and the predictability of defense business declined rapidly. As has happened in other consolidating industries — railroads, steel, and telecommunications — the power of unions became concentrated limiting further the ability of defense contractors to control labor costs or move production work to more efficient locations.

In tracing the vision of acquisition reform as it relates to technology, two themes are intertwined: loss of DoD market influence on the defense industry and cycle time gap between military and commercial technology applications. The vision from Gore and Perry focused on dealing with shrinking military-industrial base by first commercializing the technology developed for the military thereby helping industry to profit from defense related work; and second, by using more commercial technology in defense programs thereby lowering the DoD acquisition costs.

The twin needs of speed and support are embedded in these efforts but seem to gain more focus toward the end of the decade. Notice in Table 3 how the health of the defense industry is an objective up through 1995. It still receives mention in 1997 and 2001 but more as a principle of change, not a focus of change itself. Thus, the vision for change with respect to technology seems to have shifted from building a new military industrial reality to more simply reducing technology deployment cycle time.

Another way to interpret this is that the focus shifted from a perceived complex root cause to a tangible demanding result. It is also possible that the vision shifted because the threat of technological inferiority became a real crisis. Thus, the industry alignment became eclipsed by the immediate need to get technology to the troops faster. The shift makes it easier for Rumsfeld to connect change (meaning rapid fielding of technology) to meeting warfighter needs. It is probably much more difficult to take on fixing the defense industry capability, which is fraught with political, labor, economic, and international concerns that make it difficult to see meaningful progress.

Table 3 outlines the key elements of the change vision as it relates to technology throughout the decade.

DEFENSE BUDGET CONSTRAINTS

The third key driver of change is budget and spending constraints. The initial vision declared that the government must actually spend less and, indeed, defense budgets had been declining in the late eighties and through most of the nineties. About half way through the decade the emphasis seems to shift from an absolute cost reduction to a reduction in overhead allowing more money for technology and R&D. This focus is most notable in Rumsfeld's comments on September 10, 2001 when he spells out a vision for not reducing overall cost but for reducing waste allowing for more productive use of the same funding. This part of the vision probably changed the most and even more so after September 11, 2001. As defense budgets began to expand

Table 4. Tracing the Shrinking Defense Budget as a Driver of Change

Reference Document	Characterization of Acquisition Problem.	Reference to Changing Defense Budgets.
National Performance Review Gore, 1993	"The federal government seems unable to abandon the obsolete." "Waste and inefficiency; loss of faith of taxpayer to fund it."	"government must cost less" "reducing the federal deficit"
Perry Memo, 1994	DoD pays more for same parts due to regulatory burden. Lack of access to commercial supply and surge production.	Defense spending in real terms has declined by 40% from FY 1985 to FY 1997.
Acquisition Reform DUSD(AR) Colleen Preston, 1995	More firms become defense only suppliers (dependent).	Reduce costs; Procure best value goods and services.
Defense Reform Initiative, 1997	Revolution in Business Affairs must support Revolution in Military Affairs	Resources must be freed up to invest in new R&D.
The Road Ahead, 1999	Total ownership costs too high. Support costs and overhead growing too fast.	Reduce support costs; Reduce overhead costs.
Rumsfeld's Challenge, 2001	Excess infrastructure (bases). Redundant staff and agencies. Inefficient systems/processes.	Public trust for tax dollars spent on defense; Waste drains resources needed for addressing new threats.
Cancellation of 5000 Series, Wolfowitz, 2002	Need total systems approach to acquisition management. Performance based logistics Cross service acquisition agreements	Overly prescriptive regulations do not foster efficiency of operations; cost realism or program stability.

again, the focus shifted even more to spending it on the right things and particularly getting the technology into the warfighters hands faster and more efficiently. Figure 1 shows overall defense spending during the decade of transformation.

Table 4 traces the vision of change as driven by budgetary concerns. The shift in perspective roughly correlates with the change in administrations, the end of Base Realignment and Closure (BRAC) (93 & 95) rounds and the onset of the terrorist war. One thing is clear

Information Technology Projects ACAT IA - III			
	ACAT IA	ACAT II	ACAT III
Total Life Cycle Costs	> $378,000,000	N/A	< ACAT I
Total Program Cost	> $126,000,000	N/A	< ACAT I
Total Program Costs (all appropriations) in any single year	> $32,000,000	N/A	< ACAT I

Note: All $ amounts are expressed in FY2000 constant dollars
Source: DOD Instruction 5000.2, May 12, 2003, Enclosure 2

Figure 1. Percent Real Growth in Defense Spending

— the spending patterns will not be the same as in the post–World War II and Cold War periods. Large multi-year cost-plus contracts are gone. The new environment of performance-based contracts and milestone development protects the budget from being devoured by program growth but at the same time has introduced a high level of uncertainty into the program management side of acquisition. This has in turn affected the relationship between the DoD and industry exacerbating the already weak industrial base. It is also likely that continued budgetary constraints because of the demands of homeland security will make cost efficiency and cost-effectiveness essential to all military spending plans.

OBSERVATIONS FOR FURTHER EMPIRICAL RESEARCH

LESSONS LEARNED FROM THE DECADE

What does the review of these documents tell us? There are several general observations and many research questions generated from a review such as this. First, visions change with vision owners and changing visions make it difficult to maintain change momentum. Changing visions also create potential for less than full realization of change consequences as change agents become overly focused on achieving some measure of change during their term in power. This emphasis on demonstrable action and results can diminish the effectiveness of even well thought out visions and plans.

Second, visions do naturally evolve with time. Not just because of changing vision owners but also because of changing environmental conditions as with the changing threats the U.S. Military must counter. But changing environments also come from within as in the changing workforce, federal labor acts, and technology driven product life cycles. In the midst of change — of the change vision itself — clear pictures of the desired end states may be even more important. Thus, it would seem important for leaders to focus on maintaining a clear and compelling vision (picture) of where we are

going in the midst of evolving change plans and programs.

TENSIONS IN THE CHANGE PROCESS

Faster vs. Cheaper

In examining the status and number of DoD program starts, restarts, and cancellations over the last ten years, it is obvious that the DoD track record for keeping programs on schedule and within cost has not been impressive. Both industry and DoD program manager's have suffered from a contagious trend of unmerited optimism in defining and supporting both cost and schedule program risks, especially across the most complex programs such as V-22, F-22, and Comanche. The initial program baselines were built around making the programs fit inside a constricting cost and schedule box vs. designing program plans within flexible boxes to accommodate the many unknowns associated with complex integration initiatives. The current DoD acquisition administration's recognition of the problem has been outlined with recent Cost Analysis Integration Group (CAIG) guidance to put realism into the program plans. Evidence of this realism can be seen in the high number of program Nunn-McCurdy breaches occurring over the past few years.

In Army aviation alone, Comanche, Chinook, and Blackhawk have all exceeded program breach thresholds from baselines between 2001 and 2003, baselines that were inadequately established for reasons of keeping the programs alive and on schedule. Further examination of the Comanche history indicates a pervasive *give it ALL to me faster* philosophy despite changes to requirements and the reality that not all capabilities can be delivered within the same program risk profile. Despite efforts from OSD AT&L leadership to make the TRADOC community accountable for the approved set of requirements in addition to requirements creep, few in TRADOC recognize or understand programmatic impacts to Cost As an Independent Variable (CAIV) analyses.

General Abrams, in April 2001, in a briefing to the Army Chief of Staff in which he was justifying a new set of Objective Force requirements for the program plan, stated that the "Comanche weight growth experienced over the last 13 years is the result of the Army Acquisition Corps' inability to keep discipline within the requirements process." Ironically, this was the same briefing in which the Program Manager stated to the Chief of Staff, Army (CSA) that based on the current contractor performance and expanded set of requirements, "all program goals and objective could not be met."

"The prospect to do smart things cheaper and faster is a dual edge sword."

The complexity of the interrelationship between TRADOC and Acquisition is further strained as DoD programs continuously undergo a systemic decrement of program funding after contracts are signed and executed. The prospect to do smart things cheaper and faster is a dual edge sword. Development Program Managers on both the industry and DoD side must constantly search for ways to do business cheaper and faster...just to keep up with the annual drain of funding.

For fielded system Program Managers, the problem of doing business cheaper and faster is often confused

between efforts, which are cost saving vs. cost avoiding. Cost saving efforts, almost always will be accompanied with a reduction in program budgets far ahead of the realization of the cost savings. Cost avoidance is a more agreeable term for the near term but pays the same penalty in the out-years.

Standardized vs. Latest Technology

The concept of evolutionary acquisition is not new. For the past ten plus years, DoD program managers have modified their fielded systems with technology insertions, usually benefiting from commercial innovations. Over the last ten years, the shift from a DoD centric technology base — where much of the warfighting technology was developed for and within the DoD military-industrial base to — commercial centric technology development. DoD programs have become hostages to the velocity and pace of commercial standards and demands. To survive, program managers had to shift their development and technology insertion strategies from leader to follower — often becoming the tail end of scalable products. Although this strategy has helped to slow down the pace of obsolescence, little has been done to address the Program, Planning, Budgeting and Execution System (PPBES) and process to pay for these efforts.

The Apache Forward Looking Infrared (FLIR) technology lagged behind the commercial standard, not because of availability of technology but because funding was not planned well in advance

> **"Planning for technology upgrades and phased recapitalization lacks support across the DoD budget leadership."**

of the technological maturity and test complete dates. Comanche has changed its mission processing technology three times since 1991, not because additional processing capability was required but because INTEL chose not to manufacture a Comanche-only P133/233 and transfer controller. To plan for a smooth transition to production plan, the Comanche program manager was challenged to hold a development baseline configuration through the first few lots of production in order to keep development on schedule and keep costs down. Without a special, congressionally approved reprogramming action, the program would have been forced to change processing architectures in mid-development — further delaying the fielding of the system.

Configuration management of DoD systems, particularly non-commercial off-the-shelf (COTS) systems present another unique challenge for DoD program managers. Since DoD systems are not fielded like Ford automobiles, multiple configurations of the same system is *a given*. Comanche will field 650[2] aircraft starting in 2008 and complete fielding in 2020. Using the last ten years as a model, it is likely that there will be at least four different Comanche configurations in our Army when the last lot of aircraft is delivered. Planning for technology upgrades and phased recapitalization lacks support across the DoD budget leadership. DoD will not plan for funding against notional requirement changes and obsolescence when current operations and fiscal shortfalls to current systems exist. The consequence has been the need for greater Operation and Support (O&S) dollars to support multiple systems, and this trend does not seem likely to change.

Test management and requirements has gained considerable momentum over the last ten years and has almost ignored the rapid growth of models and simulations. Live fire testing requirements remain a congressional mandate and DoD 5000 policy has given the test community a tilted balance of power in the material acquisition process. Although most program managers support a robust test and evaluation plan for their systems, escalating costs of redundant testing has forced program managers to stretch program schedules to accommodate required operational test plans and their associated funding requirements.

Evolutionary acquisition procedures have not gained widespread approval from the test community, as most program plans still require a major, expensive graduation exercise called Initial Operational Test and Evaluation (IOT&E). Since the Low Rate Initial Production (LRIP) decision occurs well ahead of the IOT&E, the Limited User Test (LUT) baseline for the LRIP Defense Acquisition Board (DAB) has gained importance to become the program plan center of gravity. Testers have translated this *operational assessment* into as much of an IOT&E as possible. Both Army testers and Director of Operational Test and Evaluation (DOTE) required that the Comanche program conduct a side-by-side test with the Kiowa Warrior prior to the LRIP DAB — *to determine its overall suitability*. Both the Army Vice Chief of Staff and Army Acquisitions Executive questioned this philosophy as being "outdated and ridiculous to use an aircraft that is being phased out and has everything known about it on paper."

Finally, it is important to ask if there is any difference between Rumsfeld's challenge to the Pentagon in 2001 and Perry's Mandate in 1994? Both call for radical change to the normal way business is done at the Pentagon. Does Rumsfeld's call imply that Perry's vision has not been implemented or is it the necessary restatement of the urgency required to maintain change momentum? How much urgency is required to keep a vision alive? What causes a clear vision to change course and lose sight of the original goal or adopt a new focus? Perhaps further empirical research can document the effects of these shifts in vision within the DoD reform experience.

CONCLUSIONS

Critics of reform often say it is all tied up in politics with little hope of change. Deborah Frank outlined this argument succinctly in an article printed in the *Acquisition Review Quarterly* journal (Frank, 1997). Her argument, based on systems theory, suggested that with no change in the political process, there is little hope for real change in the acquisition process. Acquisition funds are too susceptible to political influence for other than military ends. While this is always true in the American model that gives ultimate control of the military to elected officials, it does not preclude the ability of a bureaucracy to change itself over time driven by clear change visions.

We think there are several lessons to be learned from this paper and hopefully much more detailed research to be done into the effects of the change efforts already under way. This review of

transformation efforts shows the length of time and level of persistence needed to effect real change in a bureaucracy as large as the DoD. Continued strong leadership and clarity of purpose will hopefully bring about deep and substantial progress in the in the years ahead.
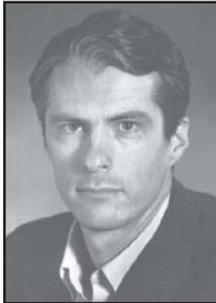
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ENDNOTES

1. The document was actually signed by DUSD (AT&L) J. S. Gansler on June 2, 2000 but had been widely circulated within the acquisition community since the middle of 1999.

2. The Army requirement was for 819, but the Defense Acquisition Board only approved 650.

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