

DEFENSE BUSINESS BOARD

Report to the Secretary of Defense

LINKING AND STREAMLINING THE DEFENSE REQUIREMENTS, ACQUISITION, AND BUDGET PROCESSES

Report FY12-02

Recommendations to reform
 Defense Acquisition through shared leadership, accountability, and responsibility

LINKING AND STREAMLINING THE DEFENSE REQUIREMENTS, ACQUISITION, AND BUDGET PROCESSES

TASK

On April 29, 2011, the Vice Chairman of the Joint Chiefs of Staff requested the Defense Business Board conduct a study on Linking and Streamlining the Defense Requirements, Acquisition, and Budget Processes. The overarching goal outlined in the Terms of Reference was to streamline and link the three processes that together provide the capabilities required by the warfighter on time, at a reasonable cost, and in the quantities needed to accomplish the mission. A copy of the Terms of Reference (TOR) is provided at **Tab A**.

In response to this tasking, the Defense Business Board (hereinafter referred to as "the Board") established a Task Group to conduct the review chaired by Major General Arnold L. Punaro, USMC (Ret) with Mr. William R. Phillips; Dr. Dov S. Zakheim; General Michael P.C. Carns, USAF (Ret); Admiral Vernon E. Clark, USN (Ret); and General Paul J. Kern, USA (Ret). Colonel John P. Curran, USA, served as the Task Group Senior Military Assistant.

PROCESS

The Task Group's draft findings and recommendations were presented to the Board for deliberation at the April 19, 2012 quarterly Board meeting where the Board voted to approve the recommendations. See **Tab B** for a copy of the brief approved by the Board.

RESEARCH METHODOLOGY

The Task Group's research included a review of the approximately 300 studies of DoD's acquisition system that have been conducted since the Packard Commission recommendations were enacted in 1986. The Packard Commission recommended a fundamental approach of "strong centralized policy" implemented through a highly decentralized

management structure, with minimal regulations and bureaucracy and strong accountability. Subsequent studies by the Government Accounting Office (GAO), the Congressional Research Service, the Congressional Budget Office (CBO), the Defense Science Board, the Defense Business Board, several Federally-Funded Research and Development Corporations (FFRDCs), Business Executives for National Security (BENS), as well as many other think-tanks and commissions, have made this issue one of the most thoroughly studied topics in DoD. The Task Group looked carefully at the previous findings and recommended changes focusing on what was adopted, what was rejected, what worked, and what did not.

The Task Group also conducted more than 220 interviews with individuals operating at all levels in DoD's acquisition and requirements processes. These interviews included current and former government officials from the Office of the Secretary of Defense (OSD), the Joint Staff, the Military Departments, the Executive Office of the President, and Congress. They also included both industry executives and external observers and analysts. The Task Group carefully noted input from interviews with individuals who served on and staffed the Packard Commission since many of those guiding principles are as compelling today as they were then. A list of interviews by category is provided at **Appendix A**.

BACKGROUND

1. Common Perspectives from Studies and Interviews

In reviewing past studies and through interviews, the Task Group found a significant degree of commonality in the identification of the problems and in possible solutions. A common refrain was – we know what is broken; we know the needed fixes – how do we change the outcomes?

More specifically, the Task Group's review of previous studies and interviews identified the following common perspectives:

- DoD's acquisition system continues to take longer, cost more, and deliver fewer quantities and capabilities than originally planned.
- The fundamental problem is that decisions are made in three separate arenas, or "stovepipes;" requirements, acquisition, and budgets. Each of these "stovepipes" is a multi-layered, heavily bureaucratic series of sequential and oftentimes uncoordinated processes that are not linked, are uncoordinated, and whose outputs do not meet warfighter requirements in a timely fashion at a reasonable cost. The three stovepipes do not operate on the same timelines, do not utilize common documentation, and often times create situations in which a decision in one has an adverse impact in another. Essential and beneficial open dialogue with industry and the two-way partnership which informs and supports these processes has greatly diminished over time and been choked down by more and more regulations and restrictions.
- The individuals, both military and civilian, who work in these three arenas, collectively referred to in this report as "the Big "A" Acquisition System" are trying to do the best job possible every day. They are far superior to the processes in which they work.

2. The Scope of Big "A" Acquisition System and its Problems

The emergence of these separate stovepipes is perhaps understandable given the magnitude of the Big "A" Acquisition System. Together, the system supports over 1,200 contracting activities making more than \$400 billion a year in purchases including everything from major capital ships, to research on cutting edge technologies, to services, to consumables and repair parts. The scope of Activities in the Big "A" Acquisition System is shown in **Figure 1.**

¹ A similar conclusion is found in Department of Defense's FY 13 budget report which states: "DoD is not receiving expected returns on its investments in weapon systems. Programs continue to take longer, cost more and deliver fewer quantities and capabilities than originally planned."

 DoD Annual Base Budget 	
- FY 2012	\$530 Billion
- FY 2013	\$525.4 Billion (request)
Supplementals/OCO	
– FY 2012	\$118 Billion
FY 2013 Request	\$ 88 Billion
 Procurement, RDT&E, Goods and Services 	\$400 Billion
 Amount of Annual Cost of Growth in Major 	
Weapons Systems	\$135 Billion (GAO)

Figure 1: Scope of Activities in Big "A" Acquisition System

The number of people, military and civilian, working and supporting these three stovepipes is massive. There are 152,000 in the acquisition stovepipe alone, with 16,000 in program management and 30,000 contract officials. Civilians dominate the acquisition workforce at 136,000 with uniformed military at 16,000.

Accurate figures of total personnel working in the requirements and budgeting stovepipes do not exist. Based on the number of major commands, and the size of the staffs and layers of management in these areas, the Task Group received estimates of an additional tens of thousands. After asking multiple offices in OSD, reliable data on the number of contractors supporting the three processes could not be obtained.

The volume of regulations, restrictions, and documentation is impossible to quantify but the handbook for acquisition officers is 962 pages, the Defense Federal Acquisition Regulation (DFAR) consists of 1,903 pages, and the Federal Acquisition Regulation (FAR) tops off at 2,013 pages.

Despite these "marching armies moving mountains of paperwork," the GAO has reported many times that the major defense acquisition programs are costing more and taking longer to produce fewer quantities. The latest GAO report stated that DoD's acquisition cost growth for 2011 was \$135 billion with \$20 billion of that growth due to decreases in

quantities, \$31 billion due to inefficiencies and other factors, and \$13 billion due to R&D cost growth. This total cost growth is approximately the same as the entire DoD procurement budget for one year.

In the last ten years, DoD has "walked away" from over \$50 billion in weapons that either did not work or were overtaken by newer requirements; a not surprising outcome given the current average development cycle is 15-18 years.

The Big "A" Acquisition System is not working as the Packard Commission recommended nor as DoD senior leaders in the Pentagon, past and present, desire. It is not providing the needed "bang for the buck" for either the warfighter or the taxpayer. In testimony before the Senate Committee on Governmental Affairs in April 1982, more than 30 years ago, Dr. Alice Rivlin, at the time Director, CBO, provided the following testimony:

Cost overruns have plagued the weapons acquisitions process as far back as records go, and recent DoD management initiatives designed to curb cost growth are by no means the first such efforts. In fact, the attention paid to cost growth over the past three decades has apparently met with some success: net of inflation and adjusted for quantity change, cost growth in weapon systems during the 1970s was only about half as great as that during the 1950s and 1960s. Nevertheless, the typical weapon system entering development today can still be expected to experience real cost growth totaling about 50 percent by the time the system is introduced into service. Cost growth in weapon systems is a pervasive problem. No branch of service and no type of weapon is entirely immune.

She could give that same testimony today, not change a single word, and still be accurate.

3. The System in Theory

Figure 2 depicts how a "linked and streamlined" acquisition system should work in theory. Note that the interrelated concentric ring of requirements is linked with the acquisition ring and also linked to the funding ring which must be programmed in the budget process. These processes should be linked at every step in such a way that when a program needs adjusting, all three processes are considered and analyzed,

and alternatives provided when decisions are made. All three processes need to be linked when initial decisions on requirements are converted to acquisition plans and when the necessary funding is obtained. A decision in one stovepipe impacts decisions in the other two, and should not be made without consideration of broader implications. It is essential that these three processes are linked and have the appropriate relationships with inputs from Congress and Industry.

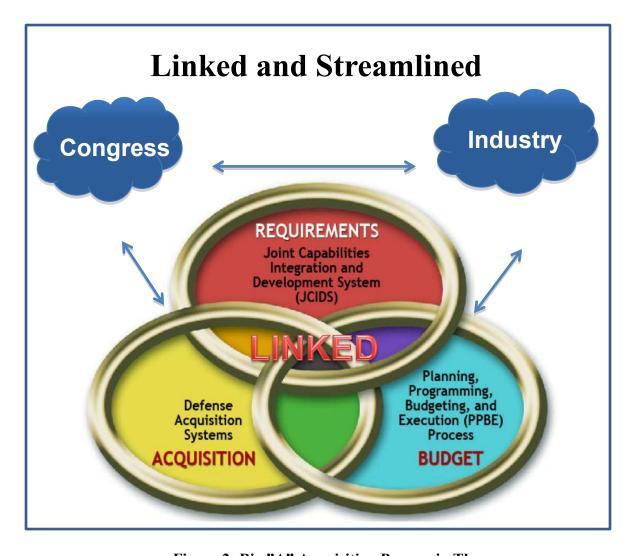


Figure 2: Big "A" Acquisition Process in Theory

4. The Defense Acquisition System in Reality

Figure 3 depicts the reality of today's stovepipe processes – this is a well-publicized depiction that has been around for years. The complexity of the three processes, when displayed on a single page, illustrates what unintentionally evolved over many years of well-intended policy and legislative changes.

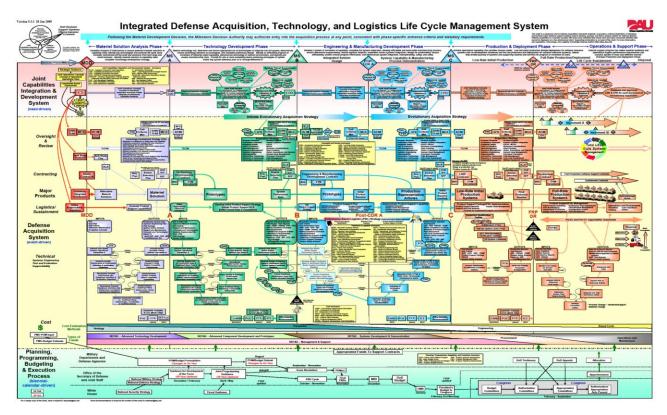


Figure 3: Big "A" Acquisition System in Reality --- NOT Linked and Streamlined

A 2009 report by BENS describes the challenges illustrated in **Figure 3**: "The acquisition process is actually not a unified process: It better resembles a collection of band-aids layered over each other, each designed in its time to solve some specific problem, none undertaken in consideration of its eventual impact on the acquisition function as a whole. Defense acquisition revolves around 15-year programs, 5-year plans, 3-year management, 2-year Congresses, 18-month technologies, 1-year budgets, and thousands of pages of regulations."

A Senate speech by Senator John McCain in December 2001 provides a particularly trenchant summation of the problem:

If you think you heard a lot of the same words about each of the programs I discussed, you would be right. Those words describe root causes of why big programs fail: aggressive promises for 'revolutionary' capability; poorly understood or fluid requirements; unrealistic initial cost estimates; overly optimistic schedules and assumptions; unreliable manufacturing and integration risk assessments; starting major production with an immature design or unproven critical technologies; and poorly performing government and industry teams. The disruption from those root causes has been exacerbated by a shocking lack of any accountability. So, over time, we have been left with a defense procurement (Acquisition) system that has actually incentivized over-promising and underperformance. In the face of the military-industrial-congressional complex, the taxpayer and the warfighter have not stood a chance.

What makes Senator McCain's assessment even more powerful is that many of the senior leaders within DoD acknowledged publicly that they agree that Senator McCain has correctly identified the problems.

5. Positive Actions Initiated by DoD

Under the leadership of Secretaries Robert M. Gates and Leon E. Panetta, Deputy Secretaries William J. Lynn and Ashton B. Carter, Undersecretary Frank Kendall, and Vice Chairmans of the Joint Chiefs of Staff General James E. Cartwright and Admiral James A. Winnefeld, the Department initiated a number of steps to improve the requirements, acquisition, and budget processes. Further initiatives are underway by the Military Departments. These actions have already made near-term improvements. Specifically, in the area of acquisition, where DoD:

 Established a focused acquisition process to create a rapid response capability for urgent operational needs such as counter Improvised Explosive Devices (IEDs), Mine Resistant Ambush Protected (MRAPs) vehicles, and logistical support.

- Initiated the Better Buying Power Initiative to improve outcomes and instill cost controls.
- Began to rebuild the acquisition workforce with improved training and emphasis on quality.
- Implemented new responsibilities for the Director of Cost Assessment and Program Evaluation's (CAPE) and enhanced CAPE's role in independent assessments and costing.
- Required affordability production caps and required sustainment cost caps.
- Initiated Enterprise Experimentation partnering with industry and incorporating mature technologies.
- Established commissions at the Military Department level to study acquisition reform and develop implementation plans that hold leaders and organizations accountable for executing changes.

The acquisition initiatives above address key issues: urgent response to wartime needs, better buying power initiatives, recognition and plans to improve the acquisition workforce, and hard cost controls on both purchases and sustainment.

Positive changes were also found on the requirements side under the leadership of the Vice Chairman of the Joint Chiefs of Staff (VCJCS). Admiral Winnefeld has put in place a new approach to eliminate excessive paperwork, reduce bureaucracy, and accelerate decision-making in the Joint Capabilities Integration and Development System (JCIDs) and the Joint Requirements Oversight Council (JROC). Components of the new approach to JCIDs and the JROC include:

- Made the process determinative so that discussions would lead to decisions.
- Conducted the JROC more like the Joint Chiefs' Tank sessions.
- Convened a much smaller informed group of decision makers instead of the stadium audiences of the past. Reduced the JROC attendance

to a Service Vice Chief plus one supporting individual. Combatant Commands (COCOMs) should have the same personnel restrictions.

- Mandated constant upfront analysis of alternatives from Joint Staff, J7 (already working) review of Analysis of Alternatives (AoA) prior to Milestone A.
- Limited page length of required supporting documents.
- Highlighted non-materiel approaches as an alternative to new starts. This could be achieved by leveraging existing materiel coupled with mature technology or by re-missioning a current unit to perform the required capability.
- Designated Functional Capability Board Chairs to present topics for appropriate debate.

These actions demonstrate the commitment of the Department's leadership to improve the requirements and acquisition processes and are already showing positive results. However, more action is needed to link the requirements, acquisition, and budget processes.

FINDINGS

The Task Group reported eight findings.

1. The three stovepipes in the Big "A" Acquisition System are too complex

The defense acquisition system comprised of the three stovepipes of requirements, acquisition, and budgets processes is too complex, bureaucratic, paper-laden, lengthy, and costly while disconnected and uncoordinated in both initiation and execution. Multiple layers of legislation and DoD internal reforms have had the unintended consequence of orienting the processes to avoiding mistakes rather than timely delivery of warfighter capabilities at a reasonable cost.

2. Coordination between the requirements and acquisition processes is inadequate

A wall has emerged between military-controlled requirements and civilian-controlled acquisition processes to the overall detriment of the outcomes resulting in a reduction of accountability. The Military Service Chiefs are insufficiently involved in the acquisition stovepipe.

3. The CAPE's increased role is a positive improvement

The CAPE is now playing an increased role in independent assessments and costing, particularly in the early phases of requirements and acquisition decisions. The Director of CAPE and the VCJCS have improved coordination between CAPE's efforts and the JROC. These efforts are helping DoD consider affordability and life-cycle costs at key milestones. The principle of "Cost as an Independent Variable" is increasingly important.

4. The acquisition workforce has atrophied. Steps are underway to improve the situation

DoD leadership agrees on the need to improve the quality and training of the acquisition workforce, including better integration of operational experience. The Department faces a number of challenges:

- The acquisition workforce has an inadequate understanding of operational needs.
- The management of the military acquisition workforce by the civilian acquisition community outside of the normal military personnel systems results in officers being at a disadvantage in terms of career opportunities and promotion potential.
- The military acquisition workforce is not being promoted at the same rate as their operational counterparts, as required by law.
- The Department is not meeting their goals for tenuring of senior program managers.

5. DoD has insufficient organic systems engineering capability

The Department lacks the organic system engineering capability that is essential to the inherently-governmental evaluation of technical feasibility, cost, and schedules. The shortfall in system engineering hinders DoD's ability to assess technology, cost, schedule, and viable alternatives. Industry is frustrated as they believe that the best customer is an educated customer.

6. Cyber and Information Technology (IT) requirements drive the need for an accelerated process

Cyber and IT modernization cannot succeed under the current system due to the accelerated advances of technology and rapidly changing threats to those technologies. Cyber and IT modernization cannot succeed because the cycle times or "spins" within Cyber and IT are far shorter than the time scale used by defense acquisition processes.

7. DoD and industry need to restore a two-way partnership

The Department needs to engage suppliers sooner on cost, schedule realism and technical feasibility related to requirements and alternatives. The same applies to acquisition. This means changing the nature and rules of the partnership with industry. DoD needs to add predictability to its relationship to industry. This is consistent with the commercial best practice of greater integration of key suppliers in integrated planning and design. Increasingly narrow legal interpretations have undermined the beneficial dialogue that used to exist between industry and DoD.

8. The Executive Branch and Congress have both added significant roadblocks to the recruitment and appointment of political appointees in acquisition

The experience and skills of civilian political appointees in the acquisition field have deteriorated over the last 20 years as the Executive Branch and Congress have both added significantly more difficult roadblocks to recruitment and appointment.

RECOMMENDATIONS

The Task Group developed a set of recommendations to address each of the eight findings. These recommendations are designed to accomplish the mission of linking and streamlining the three stovepipes.

Relationship to Current Law

Nothing in the recommendations would, if adopted, alter the operational chain-of-command as specified in the Goldwater-Nichols Department of Defense Reorganization Act passed in 1986.

Nothing in the recommendations would, if adopted, alter the management responsibility and authorities of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) as established in the 1986 Authorization Act which was based on the Packard Commission's recommendations in 1986.

The recommendations focus on restoring the management of the requirements, acquisition, and budget processes back to the state envisioned under the Packard Commission. The Packard Commission sought to link and streamline them; thereby, reducing complexities, regulations, and processes, and enhancing accountability as well as recruiting experienced personnel with strong management credentials.

Finding 1: The three stovepipes in the Big "A" Acquisition System are too complex

Recommendation 1:

- Zero-base the entire system, including all directives and regulations. The burden of proof should be on those who argue to retain something vs. those who argue to remove it.
- Train DoD's acquisition professionals along with supporting agencies in the identification, quantification, management, and mitigation of risk. Managing the high cost, high risk, high technological items

within the system will help to ensure the estimates are value added to the acquisition, performance trade-off, and budgeting effort.

- Realign the three systems with common documentation throughout the process and substantially reduce the number of pages and reviews.
- Freeze requirements early after cost, schedule, and technical feasibility trade-offs.
- Requirements should only be changed upon approval of senior leadership and only if funding is identified and programmed.
- Continue using CAPE's initial cost estimate in programming and budgeting.

Narrative to Recommendation 1:

The task group recommends that the entire system be "zero-based" including all directives and regulations. The rebuttable presumption should be towards discarding vice retention. There are many ways to do this without disrupting current activities such as "sunsetting" some provisions to expire after a certain period. "Zero base" is long overdue and it was repeated in numerous interviews that DoD "start over."

Another needed change is common documentation in all three processes and, at the same time, reducing considerably the number of pages and reviews of the common documents. An example of how the requirements process should be simplified and streamlined is found in a statement by an Air Force Vice Chief of Staff: "Our long-range bomber is a great example. The requirements document left the Air Force and in a short period there were so many additional items hung on the platform it was quickly unaffordable. The requirements document had grown to over 1000 pages. We really needed the aircraft so three senior leaders sat down and re-wrote a three page requirements document that could not be changed without the approval of the SECDEF."

Constantly changing requirements is another problem that adds cost, time, and bureaucracy. Once the linked processes produce requirements,

the acquisition approach is set, which includes technical feasibility and trade-offs, and then the funding identified and programmed, requirements should be frozen and only changed by very senior leadership and only if funding is made available. DoD must eliminate the situation where a process in one stovepipe creates an obligation, another stovepipe system has to acquire, and another stovepipe has to pay.

Finding 2: Coordination between the requirements and acquisition processes is inadequate

Recommendation 2:

- The Service Chiefs need to be more engaged and accountable in the acquisition process.
 - The acquisition process is a continuous process, running from requirements through program execution.
 - Just as USD(AT&L) input is critical in the requirements process in order to ensure that affordability and technological capability are considered, the Military Service Chiefs involvement is critical in the acquisition process in order to ensure that military needs are met.
 - DoD needs to create a partnership among the requirements, acquisition, and budget leaders to create a linked and streamlined process.

Narrative to Recommendation 2:

This finding in its simplest form is that a Military Service Chief, who is a key decision-maker in the requirements and budget processes, is NOT involved in the acquisition phase. This hinders their ability to fully execute their responsibilities in Title 10 to "equip" in support of the requirements of the Combatant Commands. This lack of involvement has contributed to program failures that could have been avoided.

The barriers between military-controlled requirements and civiliancontrolled acquisitions need to be removed. Just as the increased involvement of the USD(AT&L) is critical in the requirements process to

emphasize affordability and technological feasibility, the increased Service Chief involvement is critical in the acquisition process in order to ensure military needs are met. While they are often-times held accountable for problem programs, the Service Chiefs are neither sufficiently involved nor informed under current practices.

The Task Group recommends a very meaningful role for the Service Chiefs in acquisition to align and link the three stovepipes in a similar fashion to their involvement as key players in requirements and budgets.

It is important to note that this involvement must involve continuous engagement and not just a "one shot" opportunity to attend one meeting and offer "thumbs up or thumbs down." The Task Group found widespread agreement in the studies and our interviews that the Service Chiefs need to be more engaged as well as accountable in the acquisition process.

The efforts underway by the Departments of the Navy and Army are models that should be adopted by DoD. These models incorporate the Military Departments (requirements generators) in the decision/milestone discussions for Major Defense Acquisition Programs (MDAPs). Incorporating the Military Services as partners throughout the **depth and duration** of the weapons system acquisition timeline ensures the linking of acquisition to requirements.

One possible course of action which mirrors efforts by the Assistant Secretary of the Navy, Research, Development, and Acquisition (ASN-RD&A) could be the following:

The Defense Acquisition Board is a collaborative body made up of key civilian and military leaders making recommendations to the USD(AT&L) on all ACAT-I/MDAPs. Collaboratively insert Senior Operators, with appropriate grade, into Acquisition Category Approval Processes I – III and Milestone decision points. Creating a Service counterpart for all Component ACAT I decision authorities with civilian/military shared responsibility and accountability for program decisions and performance could serve to link acquisition to requirements at all levels. Pushing this process as far down as the Program Manager offices would incorporate the Services into the acquisition process.

Finding 3: The CAPE's increased role is a positive improvement

Recommendation 3:

- CAPE cost estimates should be presented, when relevant, at Functional Capability Boards, Joint Capability Boards, and as part of JROC discussion.
- Consistent with the Weapon System Acquisition Reform Act.
 - CAPE initial cost estimates should be the basis of programming decisions, recognizing that USD(AT&L) can decide to use Service cost position instead.
 - Services should leverage CAPE's total ownership cost estimates in developing their Program Objective Memorandums (POMs).
- DoD should emphasize principles of "cost-as-an-independent variable" and "design-to-cost."

Narrative to Recommendation 3:

It is crucial that DoD adopt "cost-as-an-independent-variable". This recommendation is straightforward in terms of CAPE cost-estimates being utilized in key deliberations. CAPE estimates should be the rebuttable presumption and the Military Services should leverage CAPEs total ownership cost-estimates. CAPE's efforts are helping DoD consider affordability and life-cycle costs at key milestones. The Task Group found solid support for CAPE's role and the improvements they have brought to independent costing.

Finding 4: The acquisition workforce has atrophied. Steps are underway to improve the situation

Recommendation 4:

 The Military Service Chiefs, in collaboration with senior acquisition leaders, should be accountable for the career path management,

training, education, and particularly promotions and equal promotion rates of military acquisition personnel, as required by law.

- Develop specific plans for civilian acquisition personnel to strengthen the implementation of the Title 10, Section 1722 responsibility of the USD(AT&L) for ensuring the development of appropriate career paths.
- Reinstitute a dual tracking system of primary and functional/ secondary career fields for officers and noncommissioned officers (NCOs) serving in acquisition positions.
- Place incentives in the system that attract, not disadvantage, officers and NCOs who serve in acquisition as a functional area or secondary Military Occupational Specialty (MOS). Consider awarding constructive joint credit for officers who serve in acquisition billets so the acquisition assignment does not impact their career timelines.
- Institute a duty tour with industry as part of their professional development prior to being a program manager. Consider expanding programs like the Defense Fellows Program with industry.

Narrative to Recommendation 4:

Very few outside the Military Departments realize that military personnel serving in the acquisition field are not being managed by the military personnel system that covers all other uniformed personnel. The current approach does not provide military officers with the requisite experience, skills, and qualifications needed for positions of increasing responsibility in the acquisition field.

A September 2010 study conducted by The Rand Corporation, "The Perfect Storm" found the implementation of the Acquisition Reforms in the Department of the Navy (DoN) had three undesirable consequences:

 It erected an impenetrable wall between a military-controlled requirements process and a civilian-driven acquisition process to the overall detriment of acquisition in DoN.

- 2. Its personnel policies deprived the DoN of a blended acquisition workforce composed of line officers with extensive operational experience who provided valuable perspectives that those who spent most of their careers in acquisition assignments lacked.
- 3. It created a generation of line officers who had little or no understanding of or appreciation for the acquisition process.

The Military Services should dual track a number of officers in operational career fields and acquisition under the shared accountability and responsibility of the Service Chiefs and Component Acquisition Executives for career path management and selections. This would create a needed balance of experience between acquisition and operations. The result would be an officer who understands both acquisition and operations and could help educate single tracked officers and inform leaders at all levels throughout the acquisition process.

The Service Chiefs should lead the military acquisition professionals as they do officers in operational career fields. They should manage career paths, training, and education that result in highly qualified and experienced professionals.

Civilian professionals also need greater opportunities to improve their skills and experience with improved career management. It is not clear whether significant increases in the size of the workforce or the significant funding being allocated will match the needs under current management approaches.

Finding 5: DoD has insufficient organic systems engineering capability

Recommendation 5:

The Department needs to establish a plan to increase the number of system engineers in the workforce and manage their careers so that the required numbers and skills are present to both support decision-makers and run programs. More specifically:

- Establish a human capital strategy for developing qualified system engineers capable of effective oversight and decision-making.
- Prioritize near-term needs and reassign system engineers to meet them.
- Increase the quality and capability of military and civilian engineers in the acquisition process and increase the sharing of resources across commands.

Finding 6: Cyber and IT requirements drive the need for an accelerated process

The importance of cyber is underscored in a recent statement by Secretary of Defense Leon Panetta:

I think the capabilities are available in cyber to virtually cripple this Nation, to bring down the power grid system, to impact on our governmental systems, to impact on Wall Street on our financial systems, and literally to paralyze this county. The one thing that I worry about the most right now is knowing that this is possible, and feeling we have not taken all necessary steps to protect this country from that possibility.

Recommendation 6:

- The Department needs to adopt an approach for Cyber and IT that matches the acceleration of technology and advancing threats.
- Consideration should be given to permitting Title 10 Cyber operational missions to emulate the pattern of Title 50 intelligence mission solutions.
- Congress should support USD(AT&L) decision to "establish a fast-track acquisition process that would enable it to develop new cyber warfare capabilities within days or months if urgently needed." -- (From a DoD Report to Congress, April 11, 2012)

 The critical importance of Cyber and IT acquisition and the enormous scope of the topic to all systems warrants further analysis.

Narrative to Recommendation 6:

With the ever accelerating advance of technologies and the rapidly developing cyber threats to those technologies, Cyber mission operations and IT modernization cannot keep pace using the current military requirements/DoD acquisition system. Cyber mission operations do not equal IT. Cyber operations ride the IT infrastructure like any other mission. Additionally, Cyber operations code is dissimilar to most computer applications normally created to perform a function.

Cyber code acts on and changes the functioning of software and hardware. Cyber operations applications development is to traditional software acquisition as writing is to buying a book. Cyber application development is a continuous process and not a discrete delivery of a product. It is continuously evolving and changing in a streaming methodology.

The world is changing from a net-centric model to a data-centric model, materially altering the way Information Assurance verification, software testing, capability development, and governance processes are performed. Tomorrow's acquisition process must be tolerant of frequent changes and not tightly coupled to the existing net-centric approach.

At the STRATCOM Cyber Symposium, May 2010, Deputy Secretary Lynn noted that:

- We operate more than 15,000 networks within the .mil domain.
- We have 7 million computing devices.
- 90,000 people are directly involved in IT Operations.
- It takes DoD on average 81 months from when an IT program is first funded to becoming operational.
- The iPhone was developed in 24 months.

The Task Group identified a good example of positive change management where the Department of the Army is currently undertaking the Network Integration Exercise (NIE) at Fort Bliss, Texas. This type of collaborative, real-time management could serve as a model for testing and incorporating mature technology into DoD's systems and platforms.

The Department recognizes that Cyber is "different" and must urgently adjust its processes to account for Cyber's criticality to national defense.

Finding 7: DoD and industry need to restore a two-way partnership

Recommendation 7:

- Establish a two-way partnership with industry.
- Bring suppliers in earlier during the requirements process to help scope technological achievability and schedule.
- Include outreach to smaller firms with innovative technical solutions.
- Increase the use of one-on-one discussions with interested suppliers at all tiers in the acquisition process.
- Conduct limited objective experiments where industry solutions can be tested in a controlled operational environment.
- Promote ongoing discussions between senior government officials and senior management from segments across industry.

Narrative to Recommendation 7:

One hundred percent of the Task Group's interviewees agreed that DoD needs to restore the two-way partnership with industry that previously existed. This means changing the nature and rules of the partnership with industry. Industry needs to be engaged sooner on cost, schedule realism, and technical feasibility related to requirements and alternatives. The same applies to acquisition. There needs to be continuous engagement

with industry on cost, competitive pressure, alternative solutions, and application of best business practices.

The Department needs to add predictability to its relationship to industry. This is consistent with the commercial best practice of greater integration of key suppliers in integrated planning and design. The increasingly narrow legal rulings of DoD have harmed the beneficial dialogue that used to exist between industry and DoD.

The fundamental point is that the better informed the Department is with regard to industry capabilities and limitations, the better requirements and then acquisition decisions it will make.

The Task Group believes that the prohibitions against industry/government information sharing create too many challenges in doing business with the Department. The concern over making a mistake has actually disadvantaged the Department during the requirements process. Disadvantages multiply as programs move into the acquisition and deployment phases.

It is acknowledged that unfettered dialogue between industry and DoD is not the answer. It is agreed that rules around fairness and transparency, as well as advocating for competition are important and must be maintained, but the Department is actually creating problems to include cost overruns, program cancellations, and ultimately not getting the warfighter what they need.

Commercial best practices call for engagement with suppliers as early in the process as possible. Connecting system engineers, cost analysts, and leaders in industry with their counterparts in DoD is critically important and not done very well today. Finding ways to facilitate 2nd and 3rd tier suppliers' engagement with DoD offers greater access to the innovation they drive, offering DoD new ideas to old problems. Streamlining the experiment process (often limited to Cooperative Research and Development Agreement (CRADA) type initiatives) would help leverage proven commercial innovation into DoD.

There currently exists a great number of misunderstandings or misconceptions to what is allowed or "crossing the line" when talking with industry. This problem is so severe and important that in February 2011,

the Executive Office of the President, OMB released an 11 page memorandum directed at chief acquisition officers, senior procurement executives, and chief information officers titled "Myth-Busting" Addressing Misconceptions to Improve Communications with Industry during the Acquisition Process." A second document was released by the House Armed Services Committee titled "Challenges to Doing Business with the Department of Defense", dated March 2012. DoD should use these two documents as a starting point to further study ways to improve communications with industry.

Finding 8: The Executive Branch and Congress have both added significant roadblocks to the recruitment and appointment of political appointees in acquisition

Recommendation 8:

- The Executive and Legislative branches should adopt changes that include:
 - Streamlining the process, reducing paperwork, and using "common procedures" in Executive and Legislative branches.
 - Minimizing financial disincentives, limiting recusals, allowing true blind trusts, providing tax incentives, and allowing longer divestitures in adverse markets.
 - Reassessing the post-government prohibitions in order to shorten the time period and limit the scope of coverage to specific programs.

Narrative to Recommendation 8:

The Department has over 50 civilian positions that are subject to Senate confirmation. The track record over the last 20 years of filling these positions in a timely fashion is mixed and in some cases, indefensible as key jobs are vacant for years. Many outside studies and a series of hearings in Congress have documented the "ills" and "barriers" to getting the right people to serve in the Executive Branch and then getting them through the Senate confirmation process.

This is particularly acute in the acquisition field. The Packard Commission's view for a streamlined civilian chain-of-command was premised on having highly qualified personnel with significant management experience in running complex technical programs in these jobs. The experience and skills of civilian political appointees in the acquisition field have deteriorated over the last 20 years as the Executive Branch and Congress have both added significantly more difficult roadblocks to recruitment and appointment. A previous Secretary of Defense is known to have asked over 12 candidates before he found one willing to accept a key acquisition job. This Secretary of Defense did not consider the individual to be the best candidate or sufficiently experienced.

CONCLUSION

Linking and streamlining the three stovepipe processes, re-injecting accountability, and providing incentives for improved performance are at the heart of this report. Most of the recommendations can be enacted through changes in DoD policy creating quick wins. The dedicated personnel who work in these areas deserve better, as do the warfighters and the taxpayers.

Respectfully submitted,

Arnold Punaro

Task Group Chair

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TAB A TERMS OF REFERENCE

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THE VICE CHAIRMAN OF THE JOINT CHIEFS OF STAFF WASHINGTON, D.C. 20318-9999

CM-1396-11 29 April 2011

MEMORANDUM FOR THE CHAIRMAN, DEFENSE BUSINESS BOARD

Subject: DBB Terms of Reference – "New Ways to Execute the Joint Requirements Process"

- 1. (U) The Department of Defense must have an Acquisition Requirements Process that enables the Department to develop and procure urgently needed equipment more rapidly. Increasing combat demands and fiscal constraints make it critical that investments in new weapon systems and non-material solutions not only meet the needs of the warfighter, but also make the most efficient use of available resources. A change to the acquisition requirements process is required to reflect the realities of the current fight, cycle time of the current threat, and DoD organizational changes. In its place, we need a new system with the following characteristics:
 - a. Demonstrates a shift from the current requirements process by changing from one that relies on consensus to a determinative process that informs the decision maker.
 - b. Streamlines the joint capability and integration timeline.
 - c. Involves the warfighter/COCOMs to a greater extent in the development and prioritization of capabilities and needs.
 - d. Adds a combined aspect to the process to get input from our international partners.
 - e. Clearly defines warfighter priorities that align with the National Defense Strategy and the National Military Strategy.
 - f. Ensures end to end synchronization of the requirements, acquisition, and budget processes.
 - g. Creates a 3 tiered process with the first tier addressing urgent needs, a third tier with a more conventional standard requirements timeline, and a middle tier focused on rapid spiral upgrades.
 - h. Ties DoD processes to industry systems and tools.
 - i. Answers how the enhanced Joint Staff J7 operates (with respect to the requirements process) and its interaction with the Joint Staff J8.
- 2. (U) As the Department's independent advisory board for economic and business affairs, I request you form a task group to review the current Joint Capability and Integration System (JCIDS) with the intent of recommending business practices that consider the above characteristics and allow the prioritized needs of the warfighter be met on a timeline that can impact near to midterm operations. The task group should focus in particular on non-materials solutions.

- 3. (U) The Joint Staff will serve as your principal support resource and will provide assistance as necessary. Other Department of Defense elements will provide assistance if determined to be necessary.
- 4. (U) This effort should be completed by the DBB's July 2011 board meeting.

JAMES E. CARTWRIGHT

General, USMC Vice Chairman Joint Chiefs of Staff

TAB B FINDINGS AND RECOMMENDATIONS PROVIDED TO THE BOARD ON APRIL 19, 2012

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DEFENSE BUSINESS BOARD



Linking and Streamlining the Defense Requirements, Acquisition, and Budget Processes

April 19, 2012

Briefing Agenda

- Task Group Overview
- Research Methodology
- Background
- Findings
- Recommendations

Task Group Overview

Task Group Focus

- Review the current Joint Capability and Integration System (JCIDS).
- Recommend business practices that allow the prioritized needs of the warfighter to be met on a timeline that can impact near to midterm operations.
- Recent initiatives by the VCJCS led the Task Group to focus on integrating the defense acquisition system (requirements, acquisitions, and budgets) into a single streamlined process.

Task Group Members

General Arnold Punaro, USMC (Ret), Chairman Mr. Bill Phillips Dr. Dov Zakheim Admiral Vern Clark, USN (Ret) General Mike Carns, USAF (Ret) General Paul Kern, USA (Ret) Colonel Jack Curran, USA, DBB Military Assistant

Research Methodology

Analyzed Past Studies

- Reviewed over 300 past studies on requirements, budget, and acquisition reform for findings and recommended changes.
- Included GAO,CRS, CBO, BENS, FFRDCs, Defense Business Board, Defense Science Board, and many think-tanks and commissions.

Conducted Interviews

- Conducted over 221 interviews over nine and a half months with many past and present senior officials to obtain observations and opinions from their differing perspectives.
- Included Office of the Secretary of Defense, Joint Staff, Military Departments, Executive Branch, Congress, Industry, and White House.
- Interviewed subject matter experts from previous studies including members and staff from the Packard Commission.
- Examined Outcomes & "Lessons Learned"

The Task Group findings and recommendations are generally consistent with recent studies and with the thoughts of the vast majority of interviewees

Background

- The Department of Defense's (DoD) acquisition system continues to take longer, cost more, and deliver fewer quantities and capabilities than originally planned. *
- The DoD, Congress, think tanks, industry, GAO, and multiple outside organizations have conducted over 300 studies and commissions since the Packard Commission's conclusions in June 1986. The Packard recommendations were included in the 1986 Authorization law which created the Under Secretary of Defense for Acquisition. The fundamental recommendation in Packard was for "strong centralized policy implemented through highly decentralized management structures."
- Despite multiple efforts by Congress and the Department to improve the system, the end result is still three stovepipes, each of which is a multilayered bureaucratic process that is not linked to the others.
- The reduction of open dialogue between DoD and industry has further exacerbated the problem.

^{*}A similar conclusion is found in Department of Defense's own FY 13 budget report which states: "DoD is not receiving expected returns on its investments in weapon systems. Programs continue to take longer, cost more and deliver fewer quantities and capabilities than originally planned."

BackgroundScope of Activities in the Big "A" Acquisition

DoD Annual Base Budget

- FY 2012 **\$530 Billion**

FY 2013 \$525.4 Billion (request)

Supplementals/OCO

- FY 2012 **\$118 Billion**

– FY 2013 Request\$ 88 Billion

Procurement, RDT&E, Goods and Services\$400 Billion

Amount of Annual Cost of Growth in Major

Weapons Systems \$135 Billion (GAO)

Number of People involved in Acquisition alone 151,608

 Number of Contractors Supporting the three Processes – no verifiable numbers available.

Volumes of Regulations, Instructions, and Documentation

DFAR 1903 pages
FAR 2013 pages
3170 CJCSI (JCIDs) 40 pages
3170 instructions 80 pages
Acquisition officer's handbook 962 pages

Background: Big "A" Defense Acquisition

(Includes Requirements, Budgeting, and Acquisition Processes)

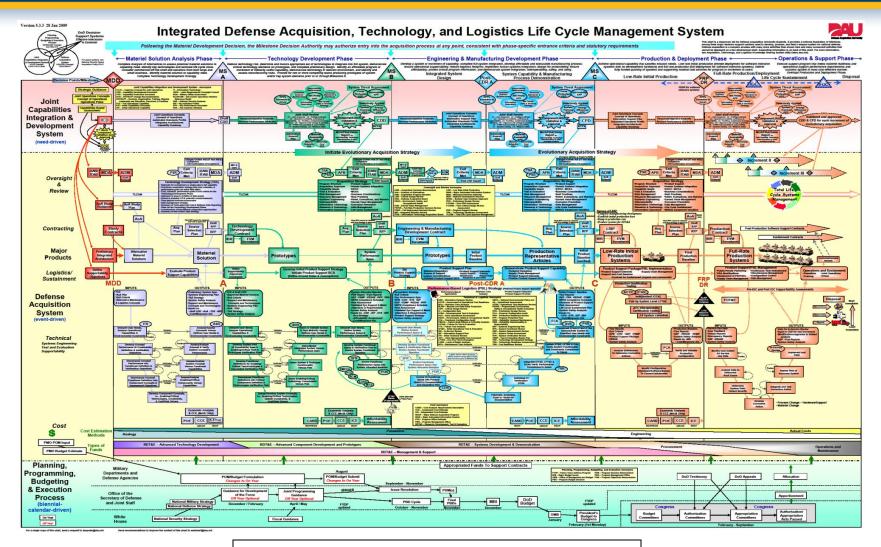
- The acquisition process encompasses the design, engineering, construction, testing, deployment, sustainment, and disposal of weapons or related items purchased from a contractor.
- DoD purchases goods and services from contractors to support military operations.
- Any purchase of a good or service by DoD is defined as a "procurement".
- In contrast, the term "defense acquisition" is a broader term that applies to more than just the purchase, or procurement, of an item or service.

Background Defense Acquisition System: In Theory



Linked and Streamlined

Background Defense Acquisition System: In Reality



NOT Linked and Streamlined

Background

Comments and Testimony: U.S. Senate Floor Speech by SEN John McCain

"If you think you heard a lot of the same words about each of the programs I discussed, you would be right. Those words describe root causes of why big programs fail: aggressive promises for 'revolutionary' capability; poorly understood or fluid requirements; unrealistic initial cost estimates; overly optimistic schedules and assumptions; unreliable manufacturing and integration risk assessments; starting major production with an immature design or unproven critical technologies; and poorly performing government and industry teams. *The disruption from those root causes has been exacerbated by a shocking lack of any accountability.*

So, over time, we have been left with a defense procurement (Acquisition) system that has actually incentivized over-promising and underperformance.

In the face of the military-industrial-congressional complex, the taxpayer and the warfighter have not stood a chance." -- SEN. John McCain, Dec. 15, 2011

BackgroundSignificant Positive Developments

- Under the leadership of Secretaries Gates and Panetta, Deputy Secretary Carter, and Under Secretary Kendall, a large number of positive changes have been put in place with both short-term results and long-term potential.
 - The Department adjusted to a rapid response for urgent operational needs such as IEDs, MRAPs, and logistical support.
 - Initiated the Better Buying Power Initiative to improve outcomes and instill cost controls.
- Began effort to rebuild the acquisition workforce and improve training and quality.
- Implemented CAPE's new responsibilities and enhanced CAPE's role in independent assessments and costing.
- Required affordability production caps and required sustainment cost caps.

Background Significant Positive Changes in JCIDs/JROC

Vice Chairman ADM Sandy Winnefeld recently instituted a series of changes in the Joint Capabilities Integration and Development System (JCIDS) and the Joint Requirements Oversight Council (JROC) with the objective of eliminating excessive paperwork, reducing bureaucracy, and accelerating decision making. Components of the new approach to requirements include:

- Limit the audience so determinative discussion/decisions can be made.
- Conduct the Joint Requirements Oversight Council more like the Joint Chiefs Tank decisions.
- Convene a much smaller informed group of decision makers instead of the stadium audiences of the past. Reduced the JROC attendance to a Service Vice plus one supporting individual. COCOMs should have the same personnel restrictions.
- Mandate constant upfront analysis of alternatives from JSJ7 (already working).
 - Review of Analysis of Alternatives (AoA) prior to Milestone A.
 - Limited page length of required supporting documents greatly reducing documentation.
 - Highlight non-materiel approaches as alternative or in conjunction with materiel solutions leveraging existing materiel coupled with mature technology or remission a current unit to perform the required capability.
 - Functional Capability Board Chair tees up the appropriate debate.

1. The three stovepipes in the Big "A" acquisition system are too complex.

The defense acquisition system comprised of the three stovepipes of requirements, acquisition and budgets (PPB&E) processes is too complex, too bureaucratic, too paper-laden, too lengthy and costly while disconnected and uncoordinated in both initiation and execution. Multiple layers of legislation and DoD internal reforms have had the unintended consequence of orienting the processes to avoiding mistakes rather than timely delivery of warfighter capabilities at a reasonable cost.

2. Coordination between the requirements and acquisition processes is inadequate.

A wall has emerged between military controlled requirements and civilian-controlled acquisition processes to the overall detriment of the outcomes resulting in a reduction of accountability. The service chiefs are insufficiently involved in the acquisition stovepipe.

3. The CAPE's increased role is a positive improvement.

CAPE is now playing an increased role in independent assessments and costing, particularly in the early phases of requirements and acquisition decisions. CAPE and the VCJCS have improved coordination between these activities and the JROC. These efforts are helping the DoD consider affordability and life-cycle costs at key milestones. The principle of "Cost as an Independent Variable" is increasingly important.

4. The acquisition workforce has atrophied. Steps are underway to improve the situation.

DoD leadership agrees on the need to improve the quality and training of the acquisition workforce, including better integration of operational experience.

- The acquisition workforce has inadequate understanding of operational needs.
- The management of the military acquisition workforce by the civilian acquisition community outside of the normal military personnel systems results in officers being at a disadvantage in terms of career opportunities and promotion potential.
- The military acquisition workforce not being promoted at same rates, as required by law.
- The Department is not meeting their goals for tenure of senior program managers.

5. DoD has insufficient organic systems engineering capability.

The Department lacks the organic system engineering capability that is essential to the inherently-governmental evaluation of technical feasibility, cost, and schedules. The shortfall in system engineering hinders DoD's ability to assess technical, cost, schedule, and viable alternatives. Industry is frustrated as they believe that the best customer is an educated customer.

6. Cyber and IT requirements drive the need for an accelerated process.

CYBER and IT modernization cannot succeed under the current system due to the accelerated advances of technology and rapidly changing threats to those technologies. Cyber and IT modernization cannot succeed because the cycle times or "spins" within Cyber and IT are far shorter than the time scale used by defense processes.

7. DoD and industry need to restore a two-way partnership.

Government needs to engage suppliers sooner on cost, schedule realism and technical feasibility related to requirements and alternatives. The same applies to acquisition. This means changing the nature and rules of the partnership with industry. DoD needs to add predictability to its relationship to industry. This is consistent with the commercial best practice of greater integration of key suppliers in integrated planning and design. Increasingly narrow legal interpretations have undermined the beneficial dialog that used to exist between industry and DoD.

8. The Executive Branch and Congress have both added significant roadblocks to the recruitment and appointment of political appointees in acquisition.

The experience and skills of civilian political appointees in the acquisition field have deteriorated over the last 20 years as the executive branch and Congress have both added significantly more difficult roadblocks to recruitment and appointment.

Recommendation 1

Streamline Processes, Change Incentives, Reduce Complexity

- Zero base the entire system, including all directives and regulations. The burden of proof should be on those who argue to retain something vs. those who argue to remove it.
- Train our acquisition professionals along with supporting agencies in the identification, quantification, management, and mitigation of risk. Managing the high cost, high risk, high technological items within the system will help to ensure the estimates are value added to the acquisition, performance trade-off, and budgeting effort.
- Realign the three systems with common documentation throughout the process and substantially reduce the number of pages and reviews.
- Freeze requirements early after cost, schedule, and technical feasibility trade-offs.
- Requirements should only be changed upon approval of senior leadership and only if funding is identified and programmed.
- Continue using CAPE initial cost estimate in programming and budgeting.

Recommendation 2 Break-down the Barriers/Link the Processes

- Widespread agreement that Service Chiefs need to be more engaged and accountable in the acquisition process.
 - The acquisition process is a continuous process, running from requirements through program execution.
 - Just as OUSD(AT&L) input is critical in the requirements process in order to ensure that affordability and technological capability are considered, Service Chief involvement is critical in the acquisition process in order to ensure that military needs are met.
 - DoD needs to create a partnership across budget, requirements, and acquisition leaders to create a linked and streamlined process.

Recommendation 3 Include CAPE Cost Estimates at Critical Decision Points

- CAPE cost estimates should be presented, when relevant, at Functional Capability Boards, Joint Capability Boards, and as part of JROC discussion.
- Consistent with the Weapon System Acquisition Reform Act.
 - CAPE initial cost estimates should be the basis of programming decisions, recognizing that USD(AT&L) can decide to use Service cost position instead.
 - Services should leverage CAPE's total ownership cost estimates in developing their POMs.
- DoD should emphasize principles of "cost-as-an-independent variable" and "design-to-cost."

Recommendation 4 Ramp Up the DoD's Investment in Human Capital

- The Service Chiefs, in collaboration with senior acquisition leaders, should be accountable for the career path management, training, education, and particularly promotions and equal promotion rates of military acquisition personnel, as required by law.
- Develop specific plans for civilian acquisition personnel to strengthen the implementation of the Title 10, Section 1722 responsibility of the USD(AT&L) for ensuring the development of appropriate career paths.
- Reinstitute a dual tracking system of primary and functional/secondary career fields for officers and NCO's serving in Acquisition positions.
- Place incentives in the system that attract, not disadvantage, officers and NCOs who serve in acquisition as a functional area or secondary MOS. Look at awarding constructive joint credit for officers who serve in acquisition billets so that doing so does not impact their career timelines.
- Institute a tour with Industry as part of their professional development prior to being a program manager. Consider expanding programs like the Defense Fellows Program with industry.

Recommendation 5 Focus on Systems Engineering Decision Making

- Establish a human capital strategy for developing qualified system engineers capable of effective oversight and decision-making.
- Prioritize near term needs and reassign system engineers to meet them.
- Increase the quality and capability of military and civilian engineers in the acquisition process and increase the sharing of resources across commands.

Recommendation 6 CYBER/IT Approach needs to be Accelerated

- The DoD needs to adopt an approach for Cyber and IT that matches the acceleration of technology and advancing threats.
- Consideration should be given to permitting Title 10 Cyber operational missions to emulate the pattern of Title 50 intelligence mission solutions.
- Congress should support USD(AT&L) decision to "establish a fast-track acquisition process that would enable it to develop new cyber warfare capabilities within days or months if urgently needed." -- (From report to Congress 11 April 2012)
- The critical importance of CYBER and IT acquisition and the enormous scope of the topic to all systems warrants further analysis.

Recommendation 7 Break Down Walls Between Industry and DoD

- Establish a two-way partnership with industry.
- Bring suppliers in earlier during the requirements process to help scope technological achievability and schedule.
- Include outreach to smaller firms with innovative technical solutions.
- Increase the use of 1:1 discussions with interested suppliers at all tiers in the acquisition process.
- Conduct limited objective experiments where industry solutions can be tested in a controlled operational environment.
- Promote ongoing discussions between senior government officials and senior management from segments across industry.

Recommendation 8

Streamline the Recruitment and Confirmation Process and Eliminate Barriers

- The Executive and Legislative branches should adopt changes that include:
 - Streamlining the process, reducing paperwork, and using "common procedures" in executive and legislative branches.
 - Minimizing financial disincentives, limiting recusals, allowing true blind trusts, providing tax incentives and longer divestitures in adverse markets.
 - Reassessing the post-government prohibitions in order to shorten the time period and limit the scope of coverage to specific programs.

DEFENSE BUSINESS BOARD



Questions?

Defense Business Board

Business Excellence In Defense of the Nation

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APPENDIX A INTERVIEWS

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Appendix A (Interviews)

The Defense Business Board task group would like to extend its most sincere thanks and professional admiration to those individuals and organizations that carved out valuable time to contribute and participate in the study. Without the direct input and recommendations of experts who have worked in some cases for decades with the acquisition system the study would not have achieved its stated goals. The task force conducted interviews over a twelve month period focusing on leadership who had current or previous experience working within the system. The list is by no means all-inclusive as there are many more very knowledgeable professionals who could add valuable recommendations based upon their experience. With the time and availability the task group believes it successfully achieved a balance between current and former members of the Office of the Secretary of Defense, Deputy Secretaries, Under Secretary of Defense for Acquisition, Logistics and Technology, Service Secretaries, Assistant Service Secretaries, Service Chiefs, Vice Chiefs, Primary Staffs from the Services, Industry Partners, Think Tanks, Advisory Boards, US Government Agencies and the Congress of the United States. The below list of categories excludes names and reflects the positions of those interviewed to observe non-attribution. The task group often times conducted multiple meetings with individuals and groups as the study evolved and mandated further discussion.

Office of the Secretary of Defense

Former Secretaries of Defense.

Former and Current Deputy Secretaries of Defense.

Former and Current Under Secretaries of Defense for Acquisition, Logistics and Technology and Staff.

Former and Current Director and Staff of Cost Analyses and Program Evaluation.

Former and Current Under Secretaries of Defense Comptroller and Staff

Former and Current Assistant Under Secretaries of Defense Comptroller and Staff.

Former Principal Deputy Assistant Secretary of Defense for Production and Logistics.

Joint Staff

Former and Current Chairmen of the Joint Chiefs of Staff.

Former and Current Vice Chairmen of the Joint Chiefs of Staff. Former and Current Primary Joint Staff Officers. Joint Staff Work Groups.

Military Departments

Former and Current Secretaries of the Navy.

Former and Current Secretaries of the Army.

Former and Current Secretaries of the Air Force.

Former and Current Secretaries of the Air Force.

Former and Current Secretaries of the Army.

Former and Current Secretaries of the Navy.

Service Senior Acquisition Secretaries

Former and Current Assistant Secretary of the Army for Acquisition, Logistics and Technology and Army Acquisition Executive.

Former and Current Assistant Secretary of the Navy for Research, Development and Acquisition. ASN (RDA).

Former and Current Assistant Secretary of the Air Force (Acquisition) SAF/AQ.

Former and Current Military Deputies for the Assistant Secretary of the Army for Acquisition, Logistics and Technology.

Former and Current Military Deputies for the Assistant Secretary of the Navy for Research, Development and Acquisition. ASN (RDA)

Former and Current Military Deputies for the Assistant Secretary of the Air Force (Acquisition) SAF/AQ.

Military Services

Former and Current Army Chiefs of Staff.

Former and Current Air Force Chiefs of Staff.

Former and Current Chief of Naval Operations.

Former and Current Commandant of the United States Marine Corps.

Former and Current Army Vice Chiefs of Staff.

Former and Current Vice Chiefs of Staff, Air Force.

Former and Current Vice Chiefs of Naval Operations.

Former and Current Assistant Commandant, United States Marine Corps.

Former and Current Principle Staff of the Department of the Army.

Former and Current Principle Staff of the Department of the Navy. Former and Current Principle Staff of the Department of the Air Force.

Former and Current Principle Staff of the United States Marine Corps.

Former and Current Army Training and Doctrine Command

Commander's and Staff.

Former and Current Director of Army Capability Integration Directorate and Staff.

Program Managers.

Combatant Commands

Former and Current_Commander Cyber Command and Director of The National Security Agency.

Former Commander of Joint Forces Command.

Former Commander of Strategic Command.

Former Commander of Northern Command and NORAD.

Former Commander European Command

Former and Current Commander and Staff of the Defense Information Support Activity.

Key Governmental Agencies and Leaders outside of the Department of Defense.

Comptroller General of the United States.

Former Director of Central Intelligence.

General Accounting Office

Managing Director Acquisition and Sourcing Management GAO.

Congressional Research Service

Former National Security Advisors.

Numerous Interviews From	1:
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Industry Partners.

Think Tanks.

Advisory Boards.

Academia.

<u>Former members of the Packard Commission and Packard</u> Commission Advisors.

Congress of the United States

Former Chairman of the Senate Armed Services Committee

Former Members United States Senate.

Former Members of the House of Representatives.

Former and Current Member of the Congressional Budget Office.

Former and Current Senior Staff of the Senate Armed Services Committee.

Former Staff Director and Chief Counsel for Senate Armed Services Committee.

Former Senior Staff of House Armed Services Committee.