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Better Buying Power 2.0

Special Issue

The Trouble with TRLs

by the Under Secretary of Defense (AT&L)

Myths of Affordability Policy

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Navy Raises the Bar

SPECIAL **BBP 2.0** ISSUE

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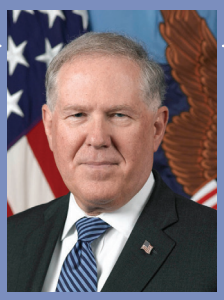

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The Trouble with TRLs

(With Thanks to Gene Roddenberry and David Gerrold)

Frank Kendall

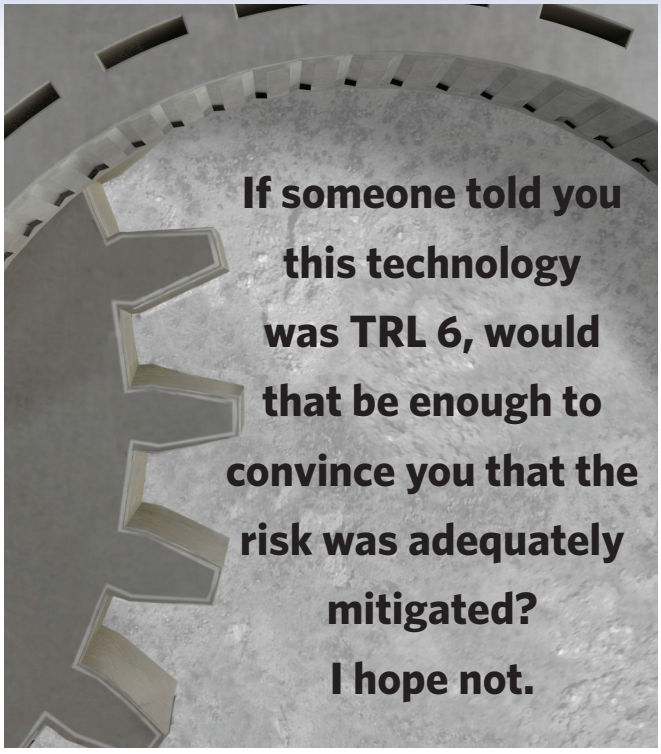
For a long time now, the Defense Department has been using Technology Readiness Levels (TRLs) as a tool to assess the risk of including a new or advanced technology in one of our products. There is nothing wrong with TRLs except that they are only one input for a risk assessment and provide at best a crude indicator of the risk of using a technology in a product. In many cases, TRLs tell us virtually nothing about whether we need to take additional action to reduce risk and what it will take to reduce a specific risk to an acceptable level. Let me give you three real-life examples I've seen over the last few years:

Example No. 1: An offeror on a missile program wants to incorporate a new infrared imaging array in a missile seeker. The technology will provide a significant performance enhancement. It employs a new material or perhaps just a larger array with a proven material. The offeror has produced several test arrays and incorporated them in laboratory test articles and in a prototype seeker that has been flown in a test article against a representative target. We would seem to have a technology that has reached the benchmark TRL 6; it has been tested in a prototype in a relevant end-to-end environment. What could be wrong? For a seeker material of this type, a critical question is its affordability as well as producibility, which usually is a function of the manufacturing processes' yield percentage. Demonstrating that we can build a few test articles simply does not tell us enough about the viability of the technology for large-scale production and therefore about the wisdom of its inclusion in the design for an Engineering and Manufacturing Development (EMD) program.

Example No. 2: To support amphibious operations, a new ramp design is needed for a staging vessel that will be used to transfer ground combat vehicles from an amphibious ship to the staging vessel before they are loaded onto landing craft and deployed to shore. The intended ramp design is novel, but it does not include any new materials or design features that would expand the state of the art in any fundamental way. It is similar to other commercial and military designs but will be

required to work in higher sea states than other similar structures. Subscale models have been built and tested in tank tests, and extensive modeling and simulation work has been done to verify the design. This "technology" (or design) doesn't meet the TRL 6 benchmark because it has not been tested in a relevant end-to-end environment. Should the program office be required to build a full-scale test article prior to entering EMD for the staging vessel? There is no way to know from the facts I have provided. Resolving this issue requires expert judgment about the degree to which the new design departs from proven capability, the risk of relying on model testing and simulation, as well as about the cost of designing, building and testing a pre-EMD prototype.

Example No. 3: New mathematical algorithms have been devised to fuse data from multiple onboard and off-board Intelligence, Surveillance and Reconnaissance (ISR) sources in a networked Command and Control (C2) system to be used on a new tactical strike platform. The success of these algorithms in substantially reducing the data processing loads on the C2 system will determine the viability of the design concept because of limitations on available power, cooling and volume on the aircraft. What must be accomplished prior to EMD to mitigate the risks of relying on these algorithms in the EMD design? If someone told you this technology was TRL 6, would that be enough to convince you that the risk was mitigated adequately? I hope not.



One of the hardest and most important aspects of our jobs in developing and delivering new capabilities to the warfighter is risk management. A problem I've seen repeatedly is defaulting to a TRL assessment as a substitute for informed professional risk assessment and well thought-out mitigation plans, including specific knowledge points and decision criteria or exit/entrance criteria for the next phase of development. TRLs do not end the conversation about risk. TRLs may start the risk conversation, and they may provide a convenient shorthand benchmark, but they do not answer the question of whether the total risk of proceeding is acceptable, or define what work needs to be done to make the risk acceptable.

Some time ago I revised the technology assessment process that we require prior to major acquisition decisions, particularly the commitment to enter EMD, to place more responsibility on our Program Managers. I expect Program Managers to have a thorough and deep understanding of the technical risks associated with their programs and of the mitigation steps and resources required to reduce that risk. Technical risk considerations drive any number of program decisions, including: (1) the feasibility of requirements, (2) the need to conduct a Technology Demonstration (TD) phase, (3) the need for and value of competitive prototypes, (4) the specific accomplishments needed before entering EMD or initial production, and (5) the appropriate contract type. All this is Program Manager's business, requiring judgment that goes well beyond any formulaic assessment of TRLs.

We also can't assume that industry will take the needed steps to identify and reduce risk. A recent study of TD prototyping programs that I commissioned revealed that industry isn't necessarily trying to reduce risk as its highest priority. When there is a competition, we can expect industry's first priority is to win the competition. We have to make sure that winning the competition is synonymous with doing what the government needs done to identify risk and drive it down. The study showed that in many, in fact the majority, of the cases, industry was achieving an asserted TRL 6 benchmark for the government but not reducing the risk in the product that the vendor intended to build in EMD. This isn't something we should blame industry for; we write the rules and we enforce them.

We will never have, and should not expect to have, risk-free programs. Our warfighters have the best equipment in the world because we take the risks inherent in doing things that have never been done before. Our technological superiority rests on this foundation. As acquisition professionals, we have to manage risk so we strike the right balance between stretching for new and better capabilities and limiting our goals to ones that are attainable and will be reached efficiently at acceptable cost. TRLs are just one of the tools we use to accomplish this task, and we should not rely on them for more than they can provide or think of them as a substitute for the professional judgments we have to make. &

Dispelling the Myths of DoD's Affordability Policy

Chad J.R. Ohlandt, Ph.D.

The term "affordability" has taken on a particular meaning in the context of DoD's recent policy and process changes. Efforts to better define and enforce affordability began recently with the first Better Buying Power (BBP) memo in 2010 and have continued with BBP 2.0, revisions to DODI 5000.02, and updates to the *Defense Acquisition Guidebook* (*DAG*). While many techniques have the potential to better estimate costs, to drive costs down, and to make products and services more affordable, they are often confused with affordability policy. Affordability policy is about establishing the dollar amount the Component is willing to spend on the desired capability in the context of all other fiscal demands over the long term. This is a Component-wide leadership responsibility requiring inputs from multiple communities.

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Affordability is *not:*

1. *Cost consciousness, cost control, or acquisition strategy.* Those are things the acquisition community can do to satisfy affordability constraints, but they do not establish the constraints.
2. *Based on cost estimates.* Affordability constraints eventually are reconciled with cost estimates but are not derived from them, even if Component leadership prefers to start with rudimentary costs estimates to help scope the allocation of resources.
3. *Established by the acquisition community.* The program manager (PM) is responsible for demonstrating at milestones that affordability analysis has been done, but the Component leadership, through planning and programming staff, has to weigh the requirements vs. the resources and make allocations.
4. *A cost-benefit analysis of a single program.* The value of the program effort must be viewed in the context of future limited resources in total obligation authority (TOA), not just a cost-benefit analysis in isolation of other limitations.
5. *Soft constraints toward hopefully saving some money.* Affordability constraints force the Component to reconsider requirements, quantities, or even the program's existence when the constraints cannot be met or raised.

Myths 1 and 2—Affordability is just a fancy name for our existing tools.

The first two myths are very common within the acquisition community, because it lives and breathes cost consciousness, cost control, acquisition strategy, and cost estimates in a daily effort to achieve affordability.

- Cost consciousness—sensitivity to potential savings or costs in present or future
- Cost control—should cost or requirements management

- Acquisition strategy—getting the best bang for buck

The three activities above all are important in meeting affordability constraints. However, they are not relevant to setting those constraints in the first place. Affordability constraints are about how much you are willing to pay, not how much you actually have to pay.

Nor is affordability about how much you expect to pay per cost estimates. Obviously, if the cost estimates are higher than the affordability constraint you are willing to pay, you have a problem. The sooner that problem is recognized and addressed, the less likely that an acquisition program will develop and design an unaffordable system. On the other hand, if cost estimates are less than what you are willing to spend, there are decisions to be made. The Component can lower what it is willing to pay and the associated affordability constraint. On the other hand, the Component might increase the quantity or the performance specifications to match all the resources they are willing to allocate. Regardless, the cost estimate is not the affordability constraint, but cost estimates are compared with the constraint to help assess affordability.

Obviously, if the cost estimates are higher than the affordability constraint you are willing to pay, you have a problem. The sooner that problem is recognized and addressed, the less likely that an acquisition program will develop and design an unaffordable system.

Myth 3—The acquisition community can decide what is affordable.

The third myth, that affordability analysis is internal to the acquisition community, gets to the heart of why the acquisition community designs and builds unaffordable platforms and programs that end up curtailed or canceled later. Resource allocations inherently are a Component leadership responsibility. The acquisition community plays an important role in providing information, but it is not the decision maker or even the bookkeeper.

True affordability analysis is the informed interplay between requirements and resourcing. Establishing affordability is greatly complicated by the split between the requirements system, Joint Capabilities Integration and Development System (JCIDS), the resource allocation process, Planning, Programming, Budgeting, and Execution (PPBE), and the Defense Acquisition System (DAS). JCIDS defines the requirements in capability documents—initial capabiliteis documents (ICDs), capability development documents (CDDs), and capability production documents (CPDs). PPBE produces a budget and medium-range plan (the future-years defense program [FYDP]) that defines the available resources; and then theoretically the DAS executes within those boundaries. However, insufficient feedback from the DAS into the PPBE and JCIDS processes on the technical maturity and cost of derived systems eventually results in requirements and schedule being too ambitious and sometimes cost estimates being dictated rather than derived. Affordability policy addresses this directly by enforcing cost considerations early and regularly to identify affordability issues as they develop.

In JCIDS, a key challenge is the requirement trades between quantity procured and platform performance characteristics. In this case, by the time the cost of certain performance specifications are understood fully, they often are long embedded in engineering designs and contracts, leaving quantity reduction as the most logical way forward. Unfortunately, excessive quantity reduction can lead to unit cost growth, capability gaps, and ultimately program cancellation. Note that the root cause of program cost growth often is not the quantity reduction itself, but the underlying performance specifications and associated costs versus available resources. In PPBE, a limiting feature is the 5-year span of the FYDP, when acquisition program schedules (from materiel development decision /milestone A [MDD/MS A] to initial operational capability [IOC]) often are greater than 5 years. In this case, acquisition and operational costs are pushed into the out-years beyond the FYDP resulting in a "bow wave" of cost, which can eventually result in quantity reduction or program cancellation. While the acquisition community always will desire better-defined requirements or more funding visibility, each alone does not solve the problem of affordability analysis.

Myth 4—A great business case for a program by itself does not make it affordable.

A traditional business case or cost-benefit analysis is very easy to confuse with an affordability analysis. This is especially true for those operating in organizational "silos," such as major commands or defense agencies. Many potential programs are "important" by themselves, but priorities are established beyond the program at the Component level, given missions and other needs. Moreover, even if one can establish a good return on investment, there may simply not be enough resources available to pursue the investment in view of other

priorities. For example, an X-percent increase in funding may allow the warfighter to deliver more capability or deliver it quicker, while a Y-percent decrease in funding would delay the program and drive up unit costs in the long run. While completely true in their context, that analysis does not address global affordability reality.

Individuals and private enterprise can choose to borrow funds to execute very promising business cases to reap the rewards in the future. However, given the federal government budgeting process, additional funds for a good business case always come from something else under the total obligation authority (TOA). Affordability analysis is about recognizing the zero-sum nature of defense budgets.

Myth 5—Affordability constraints are just another objective that can be ignored, given a good reason.

At first glance, affordability constraints appear to be another line in the sand between the program's Average Procurement Unit Cost (APUC) baseline and the statutory Nunn-McCurdy (NM) breach levels, but that is not the intent. Affordability constraints are only goals at MDD and MS A. They become hard caps at Pre-MS B and beyond.

Following MDD, the Analysis of Alternatives (AoA) routinely should try to consider options at half the affordability goals and double the affordability goals. In some cases, many multiples of affordability goals can be considered in AoAs. After MS A, the focus should be on meeting the affordability goals or run the risk of being deemed unaffordable at MS B. If the results of the technology development phase suggest alternative force structure (e.g., quantity reductions) or requirements relief, then seeking requirements relief or even cancellation and restart is preferable to continuing an unaffordable program. After the Pre-B Decision Review, affordability caps are as important as Key Performance Parameters (KPPs) and should drive a reexamination of all requirements (even KPPs) if exceeded. In contrast to simply reporting cost growth against a baseline or even a NM breach, when a PM reports that a program is going to exceed an affordability cap, it triggers the need for a new affordability analysis, a revisit of the AoA, or exploration of requirements relief with the requirements community. Enforcing an affordability cap is potentially more involved than a NM breach process in that an affordability analysis must consider the total life-cycle costs of the program, not just the availability of funds within the FYDP.

In theory, an affordability goal or cap could be above the NM breach levels. While that may seem excessively generous, recall that affordability is based on what a Component wants to allocate to satisfy a particular need. If uncertainties are large and the program is vital, a Component could allocate a larger margin for a program despite the resulting pressure on other programs under the same TOA. Regardless, the Pre-MS B or later unit costs logically would not be above an affordability cap, because that would signal to the Milestone Decision Authority (MDA) that a program is unaffordable! Those unit costs might well exceed earlier affordability goals set at MDD or MS A, but only if the Component can reallocate its affordability constraints to make it affordable.

Everyday Affordability Analogy

If we make an analogy to an individual buying a car, we would say affordability is not about:

- Buying cheaper, either by selecting a low-cost sedan regardless of reliability and fuel costs or buying a high-quality hybrid car to reduce fuel and maintenance costs—that's cost consciousness.
- Choosing to bike to work more often or to remember to get the oil changed every 3,000 miles, rather than 5,000 or more, to decrease wear and tear on the engine—that's cost control.
- Choosing between leasing a car every 3 years or buying new and keeping it for its useful life (or perhaps, buying a used car with greater risk of breakdowns or future maintenance costs in exchange for lower cost up front)—that's acquisition strategy.

Those are all about keeping the cost down (Myth 1) to make something cheaper but not necessarily affordable. Affordability is about looking at one's needs and how much one is willing to spend, while being mindful of how the different decisions involved in cost consciousness, cost control, and acquisition strategy, can help maintain affordability over the long term. For example:

- If all one needs is a car for personal transportation, the bottom line might be whatever your budget can afford, which could be $200 per month or $1,000 per month depending on your income and other obligations (mortgage, groceries, etc.). Given a dollar figure, one can buy a jalopy or lease a luxury car depending on personal preferences.
- Alternatively, if one has a family with three youngsters and a dog, which requires a larger SUV or minivan just to get around town, the family may need to sacrifice by decreasing their budget for vacation, the cable bill, or retirement savings for a few years to budget more for a bigger car.
- Lastly, an independent construction contractor might realize that the profitability of his or her business depends on delivering construction materials or towing a trailer with equipment to a job site as needed without delay. In this case, a heavy duty pickup truck is absolutely necessary regardless of upfront cost or ongoing fuel consumption, and this dictates how much must be budgeted monthly for the vehicle and possibly found in compromises elsewhere.

Each of those is a case of affordability analysis. Notably in each case, one needs to weigh the availability of resources against the perceived benefit of the acquisition.

Returning to affordability and cost estimates (Myth 2), the estimated cost of your preferred SUV does not say anything

about how much you need an SUV, nor does it say anything about how much you can spend on transportation. Once you've established those factors, the cost estimate does tell you whether your preferred SUV is affordable.

It's dangerous to car shop without doing your homework (Myth 3). Before you start kicking tires, you need to think about what features you want or need in a car and how much you can afford to spend. Otherwise, you might end up buying something that is too expensive and does not meet or far exceeds your needs.

The mere fact the salesperson is giving you a great deal on last year's model (Myth 4) that he needs to move off the lot does not necessarily mean you can afford it or need that car. Similarly, you should not buy the "coolest" car you can afford on a teaser-rate loan, if you cannot afford the monthly payments when the rates adjust (Myth 5). If you can meet your true needs at less cost, then save the money for something else. If you cannot meet your needs given your monthly cash flow, you need to do some serious thinking about reducing your expectations or reprioritizing within your limited budget.

Summary

In the end, affordability analysis and constraints are very straightforward. Affordability analysis simply determines how much the Component leadership wants to allocate to a particular need given a nominal rather than optimistic future total budget projection beyond the FYDP over the life cycle of each program. It is a Component leadership responsibility that should involve the Component's programming, resource planning, requirements, intelligence, and acquisition communities.

Affordability constraints are real. When affordability constraints cannot be met even with aggressive cost controls, the Component with support from its Configuration Steering Board and requirements validation authority must revisit requirements, schedule, and production quantities. If constraints still cannot be met and the Component cannot afford to raise the constraint level by lowering constraints elsewhere in its analysis and obtaining MDA approval, the program will be cancelled.

The Department has a long history of starting programs that proved to be unaffordable. The result of this practice has been costly program cancellations and dramatic reductions in inventory objectives. Affordability analysis and constraints have become a central part of life-cycle investment analysis, decision making, and management in the Defense Department, driving early trade-offs and decisions based on the best information we have. While uncertainties remain, we do have some knowledge at every point in the process, and affordability is all about using that knowledge to avoid starting or continuing programs that we cannot reasonably expect to pay for in the future.

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Focusing on Professionalism

René Thomas-Rizzo ■ *Jill DeMella*

A priority objective for the Department of Defense (DoD) is to shape a high-quality, high-performing, and agile Defense Acquisition Workforce to deliver technologically superior warfighting systems to our men and women in uniform in support of America's national security.

Over the past year, Under Secretary of Defense for Acquisition, Technology and Logistics Frank Kendall has focused on this challenge and has implemented several initiatives to improve and professionalize our workforce. In some cases, we already have started implementing initiatives. However, in other cases, challenges and impact studies require a more measured approach. This article will address the successes and challenges of three initiatives that are targeted to improve the qualifications and prestige of the Acquisition Workforce by establishing: (1) higher standards for Key Leadership Positions (KLPs); (2) more relevant and professional qualification requirements for all acquisition specialties; and (3) increased recognition of excellence in acquisition.

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Higher Standards for Key Leadership Positions (KLPs)

KLP standards are based on experience, education, and training. Current qualification standards place significant emphasis on certifications and less on relevant experience necessary to be truly proficient and an expert in a specific career field. In an effort to recognize experience as the most important attribute in acquisition career fields and establish higher standards for leadership, the USD(AT&L) is standing up Key Leadership Position (KLP) Qualification Boards with the main purpose of pre-qualifying senior Acquisition Professionals to fill KLPs. Pre-qualification would assist leadership greatly with talent management and succession planning, and provide a pool of qualified candidates for KLPs. Pre-qualification would be considered an "Elite" status. As currently envisioned, all who apply for pre-qualification may not be selected. The Board would be mandatory for all KLP positions with the exception of Senior Executive Service, General Officer, and Flag Officer KLPs. However, it's important to note that it would only "qualify" the KLP candidate rather than "select" an individual for a specific position and would not be a "limiter" to promotion or command selection boards.

Those identified as "qualified" would retain that designation for 5 years; those currently serving in Key Leadership Positions would be grandfathered. The KLP Pre-selection Board will be chaired and governed by AT&L Functional Leaders and comprised of acquisition functional leads from Services, appropriate DoD agencies, and subject-matter expert incumbent KLPs.

The Boards would convene annually as a minimum with the Acquisition Senior Steering Board providing oversight. There would be conditions or precepts required prior to each board—for example: announcement of the board at least 90 days in advance of the convening date, standardized submission process, and endorsement of candidates by a Flag or General Officer. A significant consideration prior to implementing KLP Boards is determining the size of the KLP qualified pool—to remain elite, the pool cannot be too large. Many details still must be studied for this to be successful—details such as resources available to the boards, how to manage and track the pool of candidates, etc. Having a structured KLP qualifying process in place is vital to establishing high standards for our most demanding acquisition positions. The KLP incumbents today will become the acquisition community leadership of tomorrow.

Strengthen Professional Qualification Requirements for All Acquisition Specialties

The intent behind this initiative is to ensure that everyone who touches acquisition in a meaningful way is qualified and proficient in the skill sets required to achieve successful acquisition results. By July 1, the Office of the USD(AT&L) Functional Leads, the Office of Human Capital Initiatives, and the Components had defined and finalized the skill sets required for each functional area; such as program management, systems engineering; logistics; contracting; etc. The Defense Acquisition University next is to convert the competencies into on-the-job tools and processes to develop qualification standards usable by all acquisition workforce members.

The final phase of this initiative will be the Components' requirement to develop and execute a plan to implement the qualification tracking and planning tools. This will then be documented to a Qualification Data Repository that will capture that individual's credentials, providing the Services and agencies a structure and framework for achieving, demonstrating, and documenting employees' proficiency by skill set. Furthermore, all captured data will be accessible to the individual, as well as the employee's organization to enable analysis by both sides, thereby assisting in career planning while allowing flexibility among AT&L accredited programs to govern qualification requirements.

Increased Recognition of Excellence in Acquisition

It has long been known that recognition of superior performance is a basic tenet and fundamental principle of good leadership. The acquisition community does not currently have in place a comprehensive awards program to recognize superior performance. Therefore, the assigned study group recommended that one be stood up. The study group found there are three components to proper recognition of the acquisition workforce: (1) incentives, (2) a communication plan, and (3) a Defense Acquisition Professional Distinction program. In these fiscally challenging times, with limited hiring and reduced bonuses, it becomes more important than ever for organizations to find opportunities to recognize their employees.

As part of the incentives component, a comprehensive review was conducted of the current acquisition awards program in the Services and Defense Agencies with the intent of putting in place a more cohesive process across the Department, as well as more substantial incentives. The team reviewing the awards program provided sound recommendations for adding awards in a tiered approach from the Component level to the USD(AT&L) level. The team determined that a comprehensive awards program must align with all the Services and Defense agencies with the "Best of the Best" competing for the highest awards at the AT&L level. The Awards Team also recommended adding a "Publisher's Clearing House" award comprised of an on-the-spot recognition by the USD(AT&L) occurring during his site visits with the person(s) being nominated by their Service/Defense agency Senior Acquisition Executive. This is an informal opportunity for a command to recognize through the most senior acquisition executive the superior performance of employees in their workplace and in front of their coworkers.

The second component of recognition establishes a communications strategy that targets the Acquisition Workforce and is intended to highlight its successes, outstanding

performers, and background stories that focus on community developments and trends. The USD(AT&L) also has established a Defense Acquisition Workforce "Wall of Excellence."

The "Wall of Excellence" illustrates significant achievements and contributions of the Defense Acquisition Workforce and communicates the history of acquisition excellence. The wall was a cost-effective means of communicating acquisition excellence both internally and externally.

Other areas of announcing good news are USD(AT&L)'s website and Service/Defense Agency acquisition newsletters. All these vehicles must be coordinated and distributed properly to achieve the desired effects. The bottom line in all this is that we must have a comprehensive and coordinated program to get the word out when an acquisition professional or an organization does something good. Simply stated; we need to communicate the qualities, capabilities and achievements of the Defense Acquisition Workforce better than we do now.

The third component of recognition is under review and focuses on creating a sense of pride and ownership within the Defense Acquisition Workforce. It has been proven time and again that individuals identify with a strong brand. Branding will create a source of belonging among the Defense Acquisition Workforce. Some ideas under consideration are: establishing a professional association, designing and establishing qualification standards for earning an acquisition professional device to be worn on the lapel, establishing coaching and mentoring opportunities within the AWF, and enhancing acquisition corps qualification standards. Brands convey quality, qualification, excellence, and experience while imbuing employees with purpose and motivation as well as pride in membership to an elite organization. Creating a strong community with esprit de corps establishes a sense of ownership and professionalism.

Each of the three initiatives targets the professionalism and qualification of the Acquisition Workforce. It no longer is enough to simply check a box to indicate an individual has met certification requirements. Critical is a true understanding of the skills necessary to execute one's position effectively based on knowledge, experience, and education.

Seventeen percent of workforce members are eligible for full retirement today; 19 percent are eligible within the next 5 years. Combine the retirement statistics with the hiring restrictions and one quickly learns that the Defense Department Acquisition Workforce must learn to do its jobs more efficiently. It is incumbent upon all members of the Acquisition Workforce to be subject-matter experts within their fields and strive for acquisition excellence. Leadership is determined to drive acquisition excellence through the three initiatives.

Improving the professionalism of the total Acquisition Workforce in Better Buying Power 2.0 is a strong commitment by leadership to raise the standard. The focus is on increasing each employee's experience, skills, education, and execution of responsibilities through a coordinated approach in Acquisition Workforce quality and professionalism. It is absolutely essential that the acquisition leaders of tomorrow receive the proper training in their early careers so they are properly prepared to lead the Acquisition Workforce of the future. The belief is that a comprehensive recognition program, higher standards for key leadership positions, and pride and prestige associated with the acquisition community are essential to shaping a cost-conscious, professional, motivated, and highly effective workforce that delivers technological superior warfighting capability that enhances our national defense.

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This page: The Movement Tracking System (MTS) Military Ruggedized Tablet provides Radio Frequency Identification capability for in-transit, real-time visibility of cargo.
U.S. Army Photo

Opposite page: The Army is delivering substantial cost reductions as it upgrades its situational awareness technology for future operations and a new generation of Soldiers.
Photo by Claire Heininger

Building a Culture of Efficiency in Blue Force Tracking Technology

COL Michael Thurston, USA ■ LTC Bryan "BJ" Stephens, USA
LTC Mark R. Daniels, USA ■ James Steinberger

On the battlefields of Afghanistan and Iraq, Force XXI Battle Command Brigade and Below/Blue Force Tracking (FBCB2/BFT) fundamentally changed American warfare by digitizing situational awareness to reduce the uncertainty known as the "fog of war."

Now the program office that fielded FBCB2 to more than 120,000 vehicles and every tactical operations center (TOC) in the Army is delivering substantial cost reductions as it upgrades the technology for future operations and a new generation of Soldiers.

The two-part system upgrade, known as Joint Capabilities Release (JCR) and Joint Battle Command-Platform (JBC-P), will serve as the principal mission command system for the Army and Marine Corps at the brigade-and-below level. It comes as the Army advances the tactical network as its top modernization priority, fielding integrated "capability sets" that connect all echelons of the Brigade Combat Team with mobile voice and data communications.

However, amid declining budgets and the drawdown of forces in theater, Project Manager (PM) JBC-P recognized that the traditional and costly path of advancing new technology was not an option for this much-needed upgrade. Instead, the PM relied on an organizational culture that stressed prudence, efficiency, and challenging the status quo. With the necessary strategic decisions and groundwork in place, Fiscal Year 2013 (FY2013) became the year of execution. By leveraging

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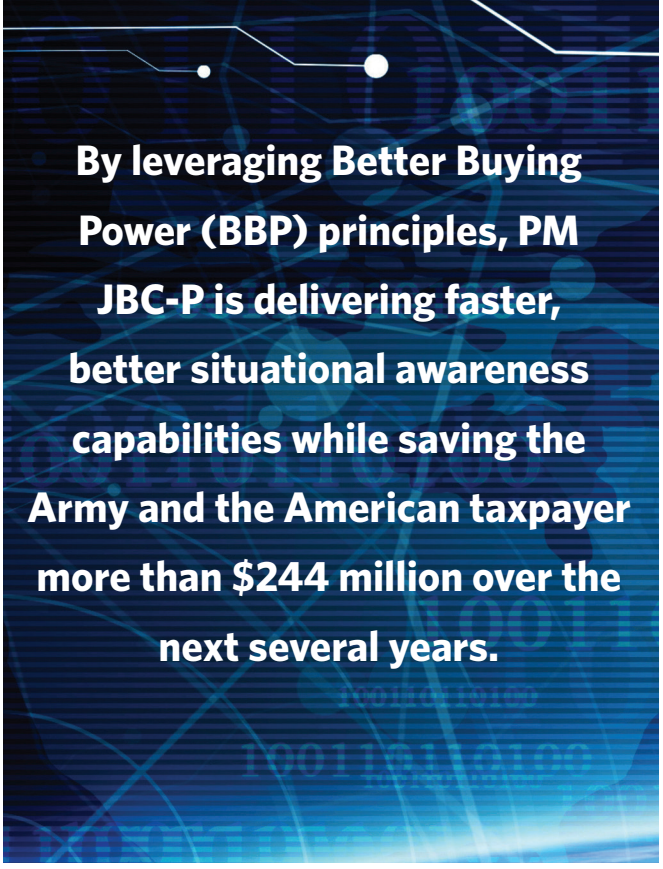

Better Buying Power (BBP) principles, PM JBC-P is delivering faster, better situational awareness capabilities while saving the Army and the American taxpayer more than $244 million over the next several years.

Promoting Real Competition

Aggressively pursuing competitively awarded, fixed-price contracts is nothing new to PM JBC-P, which is assigned to the Program Executive Office for Command, Control and Communications-Tactical (PEO C3T). In fact, the approach was instilled more than a decade ago when FBCB2/BFT was being fielded. In 2001, the PM thought the pricing of a hardware contract held by the lead systems integrator could be reduced. So, a decision was made to break out that portion and release a competitive contract for hardware.

That effort led to a new contract with a 50 percent drop in unit price. It also was the beginning of a culture change within the organization.

While all service providers had a shot in the competitive environment and all were treated equally, PM JBC-P, then known as PM FBCB2, decided to no longer accept the status quo. The PM team understood the future success of their program depended on implementing a shift in vision that challenged processes and sought out efficiencies.

If a competitive market didn't exist, the team took the time to establish one. Where prudent, it also secured government purpose rights for software and technical data packages for hardware. As part of the process, the team used third parties to validate the government purpose rights and technical data packages so when competitive contracts were released they could effectively exercise their development rights.

A strategic step came in 2010, when the PM JBC-P team chose the U.S. Army Aviation and Missile Research, Development and Engineering Center's Software Engineering Directorate to design the software upgrades for JBC-P, rather than selecting a contractor. They knew it was a risk, but a calculated one. The decision produced $64 million in cost avoidance and ensured future control of the capability. Three years later, JBC-P is already in Soldiers' hands for evaluation, just completed its Initial Operational Test and Evaluation (IOT&E), and could receive production approval as early as this year.

While development progressed on the software, PM JBC-P applied the tenets of Better Buying Power to acquire other system components, such as hardware and satellite airtime. The program office recently concluded three competitive contract efforts, resulting in significant cost reductions.

First, the PM held a full and open competition for the procurement of the BFT system platform and TOC installation kits. This resulted in more than a 40 percent reduction from the previous contract, based on projected platform installations over the FY2012–FY2017 Program Objective Memorandum (POM).

Next, to purchase satellite airtime, PM JBC-P worked in concert with the Defense Information Systems Agency to take advantage of General Services Administration Schedule 70 processes and carefully craft a performance-based requirement to enable bidders without BFT experience to compete. In addition, the PM surveyed the marketplace and crafted a performance work statement to best create competition while satisfying global operational requirements. This resulted in roughly a 27 percent reduction in the cost of satellite channels from the previous contract and $86 million in projected cost avoidance over the FY2014–FY2019 POM.

The third contract, which was awarded in June, leveraged full and open competition to satisfy multiple requirements for mounted computing components to enhance Soldiers' ability to plan, monitor and execute missions. Known as the mounted Family of Computer Systems (m-FoCS), this new capability allows multiple C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) programs and vehicle integrators to use common hardware components inside a vehicle to take advantage of economies of scale, simplified logistics, prequalified solutions and fully integrated components. The PM staffed the requirements across Services and among PEOs to ensure specific capabilities were met, while making significant reductions in size, weight and power use. Not only does m-FoCS satisfy JBC-P needs, it supports other C4ISR capabilities and will provide mounted computing solutions for the Marine Corps. As an example of m-FoCS component cost avoidance, the average cost of a complete JBC-P system dropped by more than 30

Top:
The capability Soldiers relied on for situational awareness, Force XXI Battle Command Brigade and Below/Blue Force Tracking (FBCB2/BFT), is being upgraded in two phases.
Photo by Claire Heininger

Inset:
Soldiers check communications with their Tactical Operations Center using a Movement Tracking System (MTS) mobile unit.
U.S. Army Photo

percent. If tallied over the current Basis Of Issue Plan (BOIP), it represents an avoidance of more than $65 million.

Moving forward, m-FoCS will support PM JBC-P's Mounted Computing Environment, one of six approved computing environments that are part of the Army-wide Common Operating Environment (COE). This new strategy embraces a commercially based set of standards that enable secure and interoperable applications to be rapidly developed and executed across the computing environments. Once established, the COE will allow the Army to develop, test, certify and deploy software capabilities efficiently with reduced development costs, while also encouraging competition.

PM JBC-P's Mounted Computing Environment is software-focused and will enable programs to run capabilities on whatever hardware is available. It will deliver a quality software development kit where programs can rapidly develop, test, and field mission command capabilities.

Eliminating Redundancy Within Warfighter Portfolios

The development of the Mounted Computing Environment and m-FoCS follows a series of other moves by PM JBC-P to reduce system capability duplication and create a more seamless user experience.

For example, the recent transition of the Movement Tracking System (MTS) into the PM JBC-P family of systems significantly increased capabilities while also reducing costs, streamlining processes and better aligning resources. MTS, a mostly vehicle-based system that tracks combat support and combat service support vehicles, uses a radio frequency identification capability to provide in-transit, near real-time visibility of critical cargo. It previously was assigned to the Program Executive Office for Enterprise Information Systems.

By incorporating MTS in 2012—ahead of schedule—PM JBC-P immediately eliminated the need for separate program management elements such as contracts, satellite channels, and operational costs. In FY2012, the transition showed cost avoidance of almost $20 million; that figure is expected to exceed $30 million per year through at least FY2016 for a total cost avoidance of approximately $156 million.

Even before the transition, the culture of efficiency at PM JBC-P set the stage for greatly improved capabilities at less cost. Although MTS had separate software and hardware, it shared the same networking technology with FBCB2/BFT. Leaders at PM JBC-P recognized this compatibility, and, after a 2006 Army memo directed the use of the FBCB2 product line software to replace the MTS software, they strategically worked with MTS leaders to choose a common hardware. Now, with the same network and hardware, they could complete the efficient integration leveraging the FBCB2 product line software to create JCR Logistics. With this new capability, maneuver and logistics forces can share situational awareness and messaging, forming a complete operational picture. JCR Logistics installation was completed on platforms in Afghanistan between October 2012 and March 2013.

The more than $156 million in cost avoidance from the transition of the MTS program office into PM JBC-P also created an opportunity for new forward-looking efficiencies in product support. PM JBC-P eliminated software tests and support for an evolving MTS baseline, combining test, support, and sustainment functions. This saved almost $1.7 million per year. For units, this single software baseline allows users to migrate between systems without the burden of retraining.

PM JBC-P also realigned field support representatives (FSRs) and help desks for two systems: MTS and Tactical Ground Reporting (TiGR), which is now part of the JBC-P family. By transitioning the MTS system of using regionally-based FSRs to PM JBC-P's system of dedicated FSRs who train and deploy with the brigade combat team, the numbers of FSRs were reduced. Additionally, the JBC-P fielding team expanded its mission to now install the systems identified in the MTS BOIP. The two alignments avoid costs of more than $11 million per year.

PM JCB-P also eliminated a fully manned, 24/7 MTS network operations center and its contingency backup site, which were consolidated into the two existing government JBC-P sites that run 24/7. Likewise, the PM incorporated the 24/7 help desk for TiGR, eliminating the need for two contractor-owned help desks, and a help desk for the Battle Command Support and Sustainment System (BCS3). These efforts have avoided an additional $2.4 million per year, which includes overhead costs and personnel, without affecting operations.

Upgrades Move Forward With a Focus on Efficiency

JCR introduces product line software and upgrades the BFT network, while JBC-P primarily is a software upgrade with some growth in the BOIP that mostly introduces a dismountable platform computer. However, both leveraged preexisting hardware and other system components, saving significant taxpayer dollars. Fielding now is JCR, which brings a faster BFT satellite network, secure data encryption, Marine Corps interoperability, and improved chat messaging. Once fielded, JBC-P will further revolutionize how lower echelons communicate and navigate on the battlefield, adding touch-to-zoom maps, drag-and-drop icons and a Google Earth-like interface. JBC-P will enable beyond-line-of-sight communication among dismounted Soldiers, vehicles, aircraft, and higher headquarters.

As innovations in technology reshape the strategic environment by multiplying and improving capabilities, PM JBC-P will continue to be at the forefront of successfully implementing cutting-edge acquisition strategies to deliver the situational awareness tool that Soldiers rely on for greater lethality, mobility, and responsiveness.

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Navy Raises the Bar

CAPT Mark Vandroff, USN ■ Robert Kimble

In May 2010, Secretary of the Navy Ray Mabus set out the five governing principles of Navy and Marine Corps acquisitions:

First, we have to clearly identify the requirements. Second, we have to raise the bar on performance. Third, we have to rebuild the acquisition workforce. Fourth, we have to support the industrial base. And finally, we have to make every single dollar count.

These imperatives match the goals of the more detailed Better Buying Power (BBP) 1.0 and 2.0 initiatives introduced by the Under Secretary of Defense for Acquisition, Technology and Logistics, which provide a gauge for the Department of the Navy (DoN) acquisition community against which to measure its programs. With members of the DoN Acquisition Workforce (AWF) focused on carrying out the Secretary of the Navy's Acquisition Excellence imperatives and BBP initiatives, a number of approaches have been found to seek the best possible value for every defense dollar spent.

A Study in Should Cost

Should-cost management figures prominently in both the original and updated BBP 2.0, and the Naval Air Systems Command's Multi-Mission Helicopter Programs (PMA-299) has been particularly successful in introducing should-cost principles across its two Multiyear Procurements (MYPs) for the airframes and mission systems for the MH-60 Romeo and MH-60 Sierra, both Acquisition Category (ACAT) I programs.

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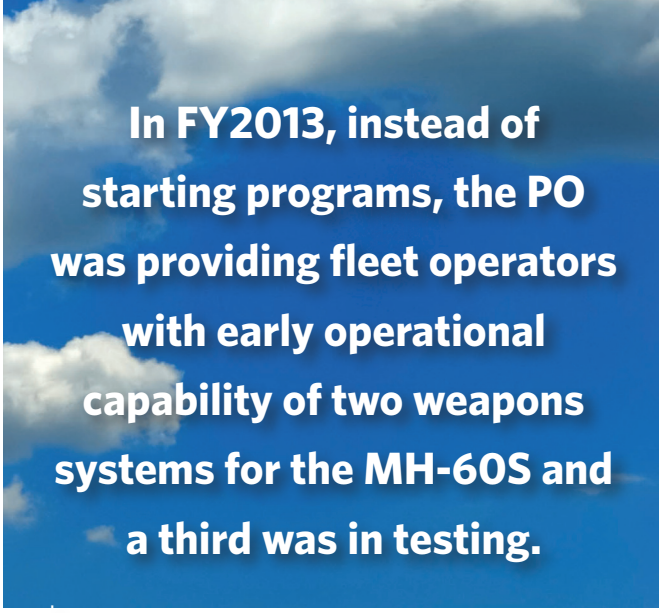

The team entered these MYPs with BBP strategies in mind to use the two MYPs to build off one another with lessons learned on certification, internal reviews, and review processes of the Office of the Secretary of Defense (OSD), as well as sharing different initiatives between the teams. With more than 50 percent of the effort for each MYP being material, the team knew going in that addressing subcontractor cost would be a key element in finding savings.

This started prior to releasing the request for proposal (RFP) to the prime. The program office (PO) worked with each prime contractor to develop and deliver the message to subcontractors, relative to the importance of the MYPs.

For example, when the PO was invited to attend a supplier conference held by the airframe prime contractor, the PO gave an overview of MYPs and why they are a benefit to all parties involved. The PO, along with the contractor, held executive-level meetings with the top ranking officials from several of the major subcontractors to emphasize their roles and answer any questions or concerns they had regarding MYPs.

This was just the beginning of the focus on subcontractors by both MYP teams, with attention on both the tier one suppliers, and the second and third tier suppliers. Detailed analysis of these suppliers' proposals resulted in significant savings for the program. In addition, the team did independent fee evaluations for many of the major subcontractors, rather than negotiating an overall profit for the contract. This prevented profit discussions at lower levels to be solely at the discretion of the prime.

This same level of scrutiny was applied at the prime contractor level. Whether it was the material cost from subcontractors, or the labor hours at the prime, the use of current actuals, as well as a thorough understanding of current production status and any issues and inefficiencies on the production floor allowed the team to challenge the proposed values and drive from a will-cost position to a should-cost position.

The team also performed a detailed risk assessment for use in profit analysis at both prime and subcontractor levels. A critical element in this part of the negotiations was understanding the business base of the prime contractor, to include any commercial sales. By understanding this clearly, the government team was able to drive cost down from a quantity of buy perspective by adjusting learning curves and ensuring rates were reflective of the projected business base.

The key to this entire approach and to the Secretary of Defense Certification for the MYPs, was relationship development, which was supported by selecting a PO lead who had responsibility for both MYPs in order to ensure proper coordination and sharing of lessons learned.

The next step was to keep the team small but talented. Having expertise in manufacturing, quality, and assembly, along with program management and engineering, allowed the team to highlight areas for improvement that benefited both parties. The Defense Contract Management Agency (DCMA) and Defense Contract Audit Agency (DCAA) were incredibly valuable assets to the team, both from a perspective of developing negotiating positions for material and labor, as well as providing the Navy/Army team with forward pricing rate recommendation (FPRR) "ranges" to allow for successful negotiations. The team engaged with these offices from the outset and continued to have regularly scheduled meetings throughout the process. This allowed for real time coordination of labor positions, understanding of status relative to assist audits, status of commercial item claims, as well as current FPRR status.

Speed to the Fleet

While the end result of the MYP team's efforts was $650 million in budget returned to the Naval enterprise, the enduring benefit is in the product that will be delivered to the warfighter years earlier than it would have been if funded as part of the "normal" budget cycle. Specific to PMA-299, the retained funds have enabled the acceleration of programs to provide suppression capability against the Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC) threat. In Fiscal Year 2013 (FY2013), instead of starting programs, the PO was providing fleet operators with early operational capability of two weapons systems for the MH-60S and a third was in testing.

Persistent surveillance for savings opportunities continues to produce results. Since May 2011, PMA-299 has realized additional should cost benefits. While efforts were under way to contract for a new Aluminum Main Rotor Gearbox, at an estimated cost of $27 million and a break-even in 2024, the program team was looking for a more affordable means to achieve the same result. What the team came up with was a $0.127 million investment that would achieve $130 million in savings by 2030. Utilization of a Fleet Response Center instead of the prime contractor for installation of an engineering change proposal resulted in another $3.6 million in savings.

Simplification in a mission kit as a result of a requirements change saved another $3.6 million and reduced aircraft mission weight that will be used for additional fuel to give the operators more time on station.

Promote Effective Competition

Real competition is the single most powerful tool available to the Department to drive productivity, which accounts for the BBP focus area on continuing to promote competition. A leading example in the Navy is the DDG 51 Acquisition Team, which developed, won approval for, and executed a highly innovative acquisition approach for the three DDG 51 Class Guided Missile Destroyers authorized and appropriated in FY2011 and 2012. The DDG 51 team also applied this approach for an additional nine (with an option for a 10th) ships as part of an MYP for FY2013 through 2017.

This acquisition approach, known as profit related to offer (PRO), injects competition into the acquisition of DDG 51 Class ships while maintaining sufficient workload at two different shipbuilders to allow for future competition in DDG 51 acquisition.

The PRO approach allocates a minimum number of ships to each shipbuilder and requires the shipbuilders to bid a target cost and compete for the resulting fee based on the cost differential between the competing bids. The low-cost offeror receives the winner's fee margin. The higher-cost offeror receives a lower fee, which is calculated by reducing the winner's fee by a percentage of the difference in the cost between the two bids. This predetermined percentage is included in the request for proposal (RFP) as the "PRO slope." PRO encourages both shipbuilders to provide aggressive yet realistic cost bids in an environment where it would be contrary to the Navy's interest to simply compete for quantity.

To give a simple example, assume a competition for two identical end items between Company A and Company B using Fixed Price Incentive Firm (FPIF) contracts. The acquiring Department of Defense (DoD) agency releases a limited competition RFP using PRO, with a winner's fee set at 14 percent and a PRO slope of 65 percent. Company A bids a cost of 100 units and Company B bids a cost of 105 units. Company A is the winner, and is awarded a contract for one end item at a target price of 114 units with share-line and ceiling as per the RFP. Company B is the loser. Because of the allocation under PRO, Company B still receives a contract for one end item. The Target Price of B's end item is set by the PRO formula of B's bid cost (105 Units) plus A's profit (14 Units) minus the difference in A and B's cost multiplied by PRO slope (65 percent of 5), for a target price of 115.75 units. While both A and B receive contracts, the low-cost offeror gets the higher profit percentage and the price to government for an offeror whose costs are 5 percent higher is only 1.5 percent more than the low-cost offeror.

Because the initial acquisition strategy for FY2011 was for a negotiated allocation between the two shipyards, the PRO approach had to be vetted formally and reviewed through both the Navy and the Office of the Secretary of Defense (OSD) staff prior to award. Despite this, the Navy was able to proceed to award of the FY2011 ships less than 6 months after Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN[RDA]) approved the PRO acquisition strategy.

The DDG 51 team was able to inject competitive forces into a unique industrial environment, where the Navy has an interest in maintaining two viable shipbuilders for major surface combatants. Despite allocating ships to both shipbuilders, the DDG 51 Acquisition Team allowed the Navy to reap the advantages of competitive forces in the acquisition of these ships.

The immediate significance of the DDG 51 Acquisition Team's accomplishment is the savings they achieved. The DDG 51 Acquisition Team accomplished the award of more than $8.3 billion in shipbuilding contracts across FY2011 through FY2017.

The FY2011 and FY2012 DDG 51s were awarded at a total target price to government that was $298 million lower than the appropriated amount. Based on the Navy's estimate of the cost of an annualized, noncompetitive procurement, the Navy saved more than $1.4 billion across the FY2013–FY2017 MYP. While OSD's Cost Assessment and Program Evaluation (CAPE) estimate of MYP savings was lower than the Navy's due to a more optimistic assessment of the outcome of annualized procurement, the FY2013–FY2017 shipbuilding MYP contracts using PRO were still $968 million below the CAPE's estimate for those contracts.

Major secondary benefits of the DDG 51 Acquisition Team are the Terms and Conditions (T&C) achieved in the award. Previous DDG 51 contracts that were not competitive awards required T&C which were negotiated bilaterally between the Navy and the shipbuilder. The competitive T&C are far more favorable to the Navy in several instances. For example, the Navy achieved its desired delivery dates for all PRO ships. In addition, PRO ships will require no future target adjustment based future shipyard workload, while previous noncompetitive awarded ships from other ship classes allow for a negotiated adjustment to target price if the shipbuilder's workload declines.

A major long-term benefit of the DDG 51 Acquisition Team's accomplishment is the maintenance of two viable surface combatant shipbuilders. This will benefit the Navy's ability to procure large surface combatants in a cost-effective manner for many years to come. Had the Navy conducted a simple competition for quantity, it is likely that the losing shipyard would have exited surface combatant construction.

The DDG 51 Shipbuilding Program Office was honored for this innovative competition approach as a winner of the 2012 Packard Award for Acquisition Excellence.

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Air Force Implementation is Off the Ground

Richard W. Lombardi

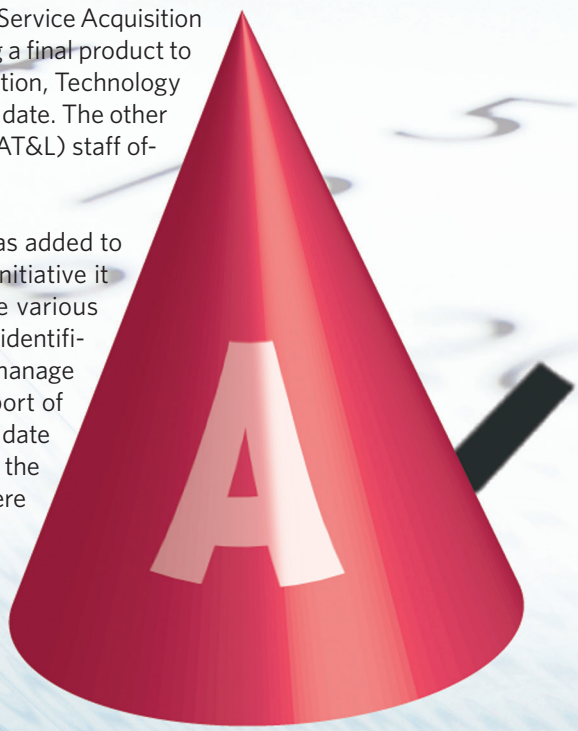
The Air Force was ready to run with a plan when Better Buying Power (BBP) 2.0 was released on April 24.

During the "draft phase" for BBP 2.0, beginning last November and finishing in January, the Air Force planned how we would implement the initiatives and track our progress on each of the 34 initiatives outlined in the April 24 BBP 2.0 memorandum. We are wholly engaged, and I fully support the Better Buying Power 2.0 initiatives. William LaPlante, Principal Deputy Assistant Secretary of the Air Force for Acquisition, commented, "Better Buying Power 2.0 represents the foundation of how we will perform acquisition in the Air Force, and Lt. Gen. Davis and I are committed to its implementation across our programs and organizations."

The 34 initiatives are in seven focus areas. Each focus area represents a broad, top-level, best-practice approach to an efficient and more effective way of strategically managing acquisition processes.

It is a challenge to manage, track and ensure the Air Force is implementing these concepts. We first identified the tasks assigned directed to the Services in the Memorandum. In 29 of these tasks, the Service Acquisition Executive (SAE) is responsible for providing a final product to the Under Secretary of Defense for Acquisition, Technology and Logistics (USD[ATL]) by a specific due date. The other tasks are led by various Office of the USD(AT&L) staff offices.

Once we identified each Service task, it was added to a scheduling tool and categorized by the initiative it supported. The scheduling tool tracks the various milestone dates for each task and includes identification of a team lead and action officer to manage a particular task, a "30 day out" status report of task progress, and, of course, the final due date and product to be delivered which closes out the particular task. Finally, points of contact were



Lombardi *is Air Force Deputy Assistant Secretary for Acquisition Integration.*

identified for each of the Service tasks. These points of contact (team leads/action officers) will deliver guidance, policy, recommendations or a final product to the field in support of promoting and implementing the initiative to which they are assigned. The scheduling tool compresses the entire BBP 2.0 memorandum tasks assigned to the service acquisition executive (SAE) into a "Big Picture" view for simplicity and easier tracking.

The Air Force is now in full swing of tracking and managing each of the tasks listed in Figure 1. Once a task is complete, the team lead/action officer will submit the final product through the chain of command for final approval by the Assistant Secretary of the Air Force (Acquisition) (SAF/AQ) and submission to USD(AT&L).

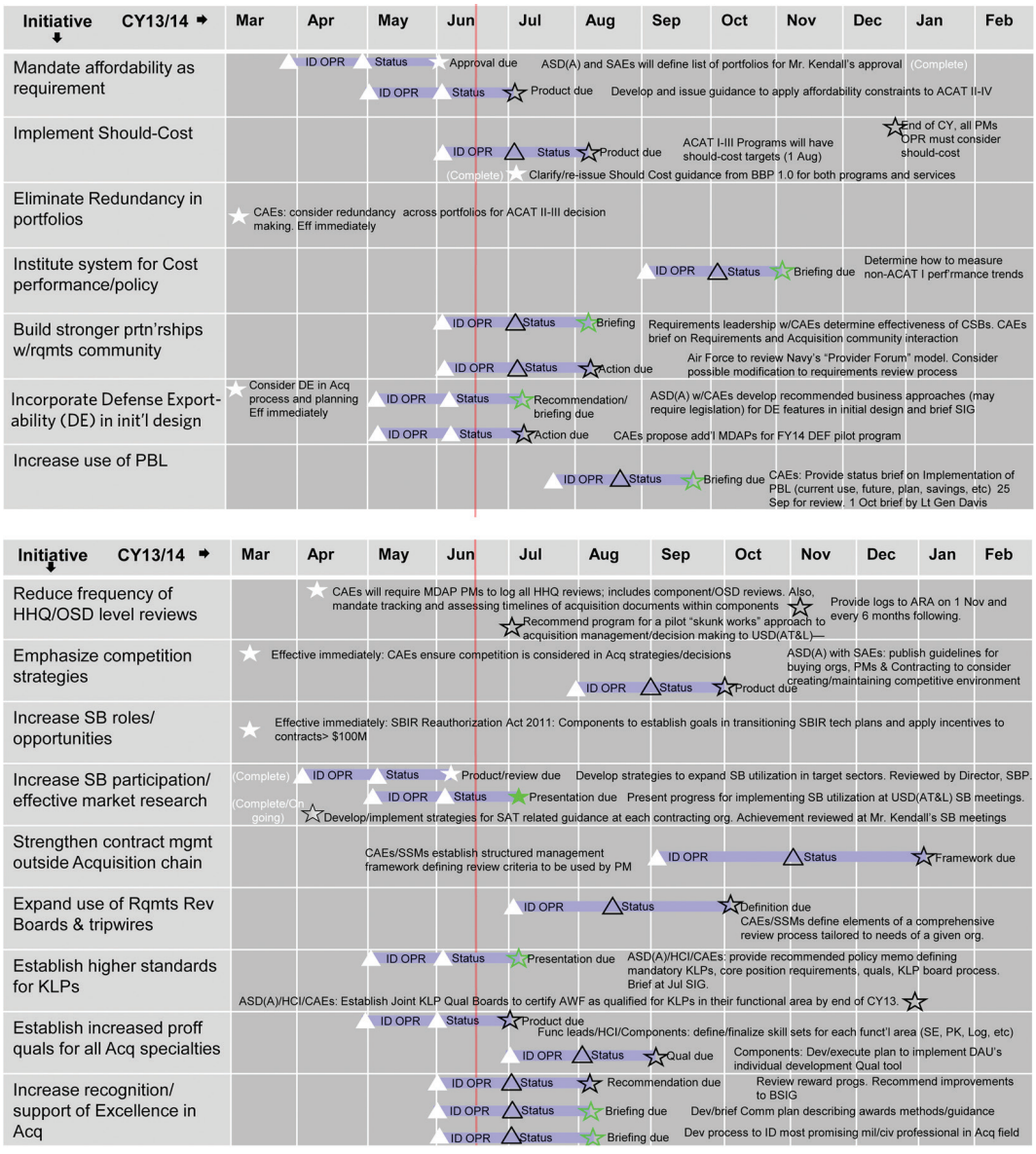
BBP 2.0 Air Force Communications and Actions Implemented

Communication is the key to any successful initiative. The Air Force has been providing our program executive officers (PEOs) and program managers (PMs) with multiple communication tools to help spread the BBP 2.0 ideas and techniques. These tools include an overview of BBP 2.0's initiatives, their intent, and helpful resources. Several policy memos have been distributed, including a "Should-cost Expectations" memorandum that redefines the Air Force's should cost management and waiver procedures and the "Reducing Frequency of Higher Headquarters Review" memorandum which tracks all the Headquarters Air Force and Office of the Secretary of Defense-level reviews over a 6-month period to understand the burden being placed on programs for reviews.

The Acquisition Excellence and Change Office, SAF/AQXC, distributes Air Force-wide a monthly newsletter titled, *The PM Gazette,* which includes a dedicated column for BBP 2.0 updates and news. Biweekly teleconferences are held between Air Staff's Acquisition Center of Excellence (ACE) and all of the ACEs at the Space and Missile Center and Life Cycle Management Center Operating Locations and Air Logistics Complexes to discuss any updated information regarding BBP 2.0.

Additionally, the SAF/AQXC portal page has a "Better Buying Power 2.0" link that includes the most up-to-date information and news. My plan is to visit various Operating Locations and Air Logistics Complexes to promote BBP 2.0. These events will focus on discussions of lessons learned, benchmark practices, and general feedback of BBP 2.0 implementation from the field.

Figure 1: Air Force BBP 2.0 Implementation Schedule Example



SAF/AQ has been positioning its workforce to focus much of its energy and priorities through several major endeavors: requirements performance tradeoffs, the should cost initiative, and program integration. The Air Force acquisition community has been working aggressively with the requirements community to ensure that during the definition of requirements, affordability is always a key consideration. Under the should cost initiative, the Air Force has put great emphasis in this area, and the projected savings in Fiscal Year 2013 (FY2013) will significantly exceed those realized in FY2012.

Meanwhile, to support a more forward-leaning workforce, SAF/AQ leadership has redefined program integration as a process that can adapt a current program's resources into a more robust decision-support capability by corralling and synchronizing its knowledge and information. Between these initiatives, results already are visible and the expectation for a more critical thinking, functionally diverse workforce is within reach.

Today, the Air Force requires that affordability discussions take place at all General Officer-level requirements and acquisition forums. Programs need to show what life-cycle cost vs. capability tradeoff analysis they have conducted when they come forward for Air Force Requirements Oversight Councils, Air Force Requirements Review Group meetings, Air Force Review Boards and Configuration Steering Boards. These requirements were established to ensure that affordability is used to inform decisions throughout a program's acquisition life cycle.

Since the publication of the Air Force Will-Cost/Should Cost policy, Air Force Acquisition leadership has begun reviewing program Should-Cost status during Investment Budget and SAE Reviews. The result has yielded a more intense focus on

While this initiative is in its infancy, there is growing momentum within programs to leverage the program integration approach and process.

resources and contract maximization. For example, the MQ-9 program combined aircraft buys with initial spares procurement to gain favorable contract negotiations and reap cost savings.

The Air Force is expanding the training initiatives to focus and enhance the capabilities of the acquisition community by working with the University of Tennessee to develop and provide should-cost training. Beginning with a series of 2- to 3-day workshops this summer at the respective acquisition centers and complexes, tailored instruction will be provided utilizing a combination of training sources that may include the Defense Acquisition University and computer-based training. The objective of this training will showcase areas where programs can potentially find efficiencies to reduce overall costs.

Over the past year, SAF/AQX established a Program Integration Working Group team to engage programs and center support staff on ways to better provide information and analysis to a PM without adding more personnel. The result, documented in the *Program Integration Handbook*, has been a process that links 13 activities within a program to highlight areas of change, forecast implications and find ways to handle or mitigate the situation for improved life-cycle performance. While this initiative is in its infancy, there is growing momentum within programs to leverage the program integration approach and process. Today, there are 35 programs adapting program integration to their own program's resources, complexities and maturities, and that number is growing with each passing month.

Better Buying Power Success Stories

Although the Air Force still early in the implementation phase, there are several recent success stories and actions taken by the Air Force that have a permanent, positive effect resulting from a particular action area of BBP 2.0. The KC-46 Tanker, F-22 Raptor, Evolved Expendable Launch Vehicle (EELV), C-130J Program, T-38 Wing Torque Box Source Selection Team, Electronic Attack POD Upgrade Program (EA PUP) and the U.S. Air Forces in Europe (USAFE) are just a few of the programs/teams the Air Force can highlight among many others that have fully embraced the concepts in BBP 2.0 and have seen the advantages of applying BBP principles.

The KC-46 Program consists of 179 tankers that will replace the fleet of aging KC-135 tankers. It is a multi-role aircraft able to perform air refueling, and cargo, passenger and patient transport. The program is in the engineering manufacturing and development phase with a fixed price incentive contract with the government liability capped at $4.9 billion. This is much more advantageous vs. a cost plus type contract. All 179 production aircraft already are priced in the contract, which contains variable quantity matrices for options. Overall, this program contains limited government furnished equipment, extensive data rights, and license purchased up front, and a fuel burn clause. The alignment with BBP 2.0 consists of the competitive nature of the program that has led to significant savings for the DoD and taxpayer. Building competitive options into the strategy has led to extensive up-front procurement of data rights and addition of a commercial parts pool.

The F-22 Program has reaped the benefits of implementing BBP 2.0 concepts. Its Increment 3.2A program was given a proposed cost of $212 million. By utilizing should-cost management practices and principles, a savings of approximately 15 percent was realized in final contract award cost of $180 million. The $32 million saved during negotiations was based off analyzing program management oversight, parametric analysis models, and engineering levels required, and simplifying software testing procedures. By questioning and challenging these cost drivers, the program was able to realize significant savings. The F-22 Increment 3.2B proposed program cost of $363 million applied the same should-cost management practices and principles. This resulted in an 11 percent reduction in final contract award cost of $329 million. This $34 million savings during negotiations was caused by challenging the estimate on unit testing and program management procedures, analyzing productivity factors and proposed fees. A lesson learned is to conduct the should-cost review after proposal receipt and then use a "bottom up," "top down," and parametric data during negotiations to reduce overall cost.

The EELV conducted an extensive should-cost review which consisted of approximately 50 or more individuals working for 6 months preparing for negotiations on a follow-on launch capability contract. As a result, 63 percent of the costs were removed from Range Support, commodities, and licenses.

The C-130J Program promoted acquisition excellence to enhance, produce, and sustain the $14 billion C-130J fleet of 168 United States Government (USG) and 22 Foreign Military Sales (FMS) aircraft. As a direct result of implementing BBP's Focus Areas and Initiatives, the C-130J program delivered notable results in affordability, controlling cost growth, and reducing nonproductive processes. The program office practiced affordability as a requirement through the stand-up of an

This $34 million savings during negotiations was caused by challenging the estimate on unit testing and program management procedures, analyzing productivity factors and proposed fees.

enterprise-wide Joint Council on Affordability. This collaborative arrangement promoted a more efficient and informed use of scarce internal research and development funds. This led to production line improvement initiatives saving nearly 700 hours of touch labor per aircraft.

Fuel efficiency initiatives are at work with the projected goal of saving $30 million per year in fuel costs across the Air Mobility Command (AMC) fleet due to the stand-up of this Joint Council. The program office reevaluated its test strategy to consider the most cost-effective means and identified a change in test venue that would save $5 million to $7 million. The team formulated and executed a strategy that takes advantage of the efficiency of a single collective purchase rather than individual customer orders. Grouping aircraft buys reaps considerable benefit to the U.S. taxpayer through the realization of economic order quantity efficiencies. This approach, which eliminates redundancies and unneeded costs, saved more than $90 million during the last lot buy, securing two additional aircraft through realized savings.

To create shorter production schedules and foster a "win-win" government contractor environment, the C-130J team paired with Defense Contract Management Agency (DCMA) and industry personnel and conducted significant upfront planning. This led to a stable and more economical production rate of 36 aircraft per year (a rate not seen for nearly 15 years), a 38 percent decrease in DCMA-performed product audit assembly, and 15 percent decrease in product audit end inspection findings over the previous year.

To reduce nonproductive processes and bureaucracy, the team formed an early partnership with the prime contractor, DCMA, and Navy C-130J procurement office stakeholders and streamlined the request for proposal-to-contract-award process timeline by targeting a contract award in 365 days. This is a 480-day reduction from their most recent experience.

The T-38 Wing Torque Box Source Selection Team made a competitive award of the T-38 Enhanced Wing Torque Box and achieved $101 million savings as a direct result of implementing BBP 2.0's affordability, controlling costs, incentivizing productivity and innovation in industry, and promoting effective competition initiatives.

Regarding affordability and cost growth, the team procured data from the original equipment manufacturer and directed the timely design and replacement of the T-38 Dash 29 wing with the enhanced Dash 33 wing. This made possible a savings of $101 million by allowing competition for the remaining requirement of 103 Wing Torque Boxes and extended the aircraft's effective service life, for a 76 percent increase in the "Introduction to Fighter Fundamentals" training.

To incentivize productivity and innovation, the T-38 Wing Torque Box team executed its strategy and delivered a competitive future year firm fixed price option with variable price bands that maximized buying power leverage with quantity discounts, realized a cost savings to the government through phasing stable minimum orders, and allowed the contractor economical production rates without breaks in manufacturing. Overall efforts led to cost savings, better quality, and a more efficient long lead supply chain.

To promote effective competition, the T-38 Wing Torque Box team evaluated market conditions, government requirements, independent government estimates, and historical price increases of the wing from contract to contract, to develop an innovative and competitive acquisition strategy to support through 2020. It was decided to make a $2 million data procurement investment to remove a competitive barrier and convert the T-38 enhanced Dash 33 wing from an original equipment manufacturer sole-source situation for the initial 53 units to a competitive follow-on for 103 additional units. This increased the government vendor base from the existing single source to three qualified manufacturers.

U.S. Air Forces in Europe was able to save $57 million on a back-to-basics approach on its six largest acquisitions by encouraging early industry involvement to enhance competition, performing a joint scrub of service requirements with user and industry, streamlining evaluation processes for source selections, and dedication from the entire acquisition team.

Better Buying Power 2.0 already has reaped great benefits for the U.S Air Force. Our PEOs and our PMs are on board and are working hard to make these common-sense initiatives and better ways of conducting our business a permanent way of life in the acquisition business. I hope that all Airmen, uniformed, civilian and contractor will continue to embrace these best practices and help us fly, fight and win!

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Building a Culture of Cost Consciousness

CAPT Cate Mueller, USN

With a constant drumbeat about the constrained budget environment's effects on defense procurement, the acquisition workforce (AWF) is focusing on how to achieve greater efficiency and productivity in defense spending.

In the recent implementation guidance for Better Buying Power 2.0, Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]) Frank Kendall described 34 initiatives and seven focus topic areas as a "Guide to Help You Think." Better Buying Power (BBP) is part of a continuous learning and improvement management approach practiced in a culture that requires a commitment to reduce costs and increase productivity with dedicated support to the warfighter, and a strong stewardship of the taxpayers' dollars. BBP 2.0 " . . . continues to increase the cost consciousness of the acquisition workforce—change the culture." Those last three words—"change the culture"—have been the mantra for a team of AT&L and Service professionals who have been looking at what counterproductive behaviors exist across the workforce, what actions might be required to change those behaviors, and how to instill the new behaviors into a more cost-conscious culture.

Instilling cost consciousness began as a formal project after Kendall hosted an offsite meeting for AT&L leadership and Service acquisition executives in February 2012. Discussions centered on recognized behaviors that act against

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getting the best value in a contract. The prime example was the obligation and expenditure of funds. Although a program manager is assessed based on meeting the established obligation and expenditure rates, doing so does not always drive the best deal and the lowest cost. The leadership at the off-site agreed that the right metric was not whether all the dollars were obligated, but whether the department was getting the right value for what was obligated.

Kendall established the Cost Consciousness team to investigate counterproductive behaviors and assess whether there were policies or processes that led to the behaviors and what needed to change to allow for reasonable cost-conscious behaviors to benefit the warfighter and taxpayer. Sue Dryden, then-Deputy Assistant Secretary of Defense for Materiel Readiness, led the team as it set out to understand the elements of cost consciousness.

"The team started with brainstorming as well as interviews with experienced acquisition workforce members about what things occur in a program that go against getting the best deal for the taxpayer. We looked at a wide range of bad behaviors, with the first major behavior being end-of-year obligations and expectations—the right metric is not whether all the dollars were obligated, but whether the department got the right value. The team focused on three other behaviors: contract negotiations and pricing; understanding the cost elements and the drivers of cost; and requirements—making sure we get the right level, understanding how certain requirements drive costs and also stability of requirements because changing requirements also drive costs in the acquisition process," said Dryden.

The team developed a clear statement of intent to keep its actions in alignment with the other acquisition improvement projects resulting from the February 2012 offsite as well as the update to BBP, which was worked concurrently on the AT&L staff. Ultimately, the cost consciousness project was pulled under the BBP 2.0 effort with an emphasis on the cultural change aspect for the AWF:

> It is critical that we target affordability, control cost growth, and incentivize productivity and innovation while ensuring the best support to the warfighter. Our efforts must span across all acquisition and sustainment activities. In order to be successful, we need to instill a culture of cost consciousness through sound business acumen, establishing clear expectations and recognizing, rewarding the right behavior.

Based on the intent and consideration of the four identified bad behaviors, the team identified possible levers to change behavior and eventually change the beliefs that underpin that behavior.

"With culture being the shared behaviors and belief of a particular group—in this case, the acquisition workforce—the aim is to use the levers to instill cost consciousness as a cultural strength. The first lever is statute, policy and process; the next lever is accountability or holding people accountable to ensure their actions were consistent in a cost-conscious manner. Then the third is strategic communication . . . that is the lever to get the word out to let people know that it is OK if you do not meet end-of-year obligations. You need to understand where your program is in the middle of the year and be willing to give money back. Communication is a way to share success stories and lessons learned," said Dryden.

The identified levers provided a natural organization for the sub-teams created to develop additional information and necessary follow-on actions. The Statute, Policy and Process sub-team, led by Scott Reynolds, Deputy Assistant Secretary of the Air Force for Logistics, initially undertook a substantial review of what barriers might exist that would force the undesired behaviors. Although expecting to find actions covered expressly in statute or policy, the team discovered that was not the case. Instead, processes that had developed over time as well as workforce and operator beliefs about how their future budget would be affected seemed a more direct cause of counterproductive behaviors.

This sub-team turned its attention to identifying areas where policies and processes could encourage a more cost-conscious culture across the department. Recognizing an opportunity to improve cost visibility and drive out cost within contract vehicles such as Contractor Logistics Support (CLS) and Performance Based Logistics (PBL), the team concluded the heavy emphasis CLS and PBL vehicles place on performance measures needs to be balanced with measures that drive cost-conscious behavior in the private sector. Through the spring of 2013, the team reviewed how to institute annual cost reduction curve clauses and require contractor billing to use the DoD Cost Assessment and Program Evaluation (CAPE) Cost Element Structure to capture how dollars are executed. Also, the *CLS Best Business Practices Guide* now is with DAU as a planning and educational tool for use by service acquisition community members and for incorporation into appropriate course material there. Additional cost visibility measures reviewed include ensuring cost data is used in analysis to manage Firm Fixed Price (FFP) contracts.

Another focus area is increasing the services' expertise in should-cost management, Request for Proposal (RFP) development, and contract negotiation. One way to expand the expertise base would be to develop additional organizations similar to the Price Fighter Services currently provided for through the Navy Supply Systems Command (http://www.navsup.navy.mil/navsup/capabilities/price_fighters_services). Formed in 1983, Price Fighters performs "Should-Cost" analyses on spare parts and weapons systems, providing Navy, DoD, and civilian federal agency buyers, contracting officers, and PMs data that are both quick and accurate. These data enable acquisition officials to make crucial procurement decisions, resulting in better, more effective program management. Price Fighter Services have evolved over the years, and now

Processes that had developed over time as well as workforce and operator beliefs about how their future budget would be affected seemed a more direct cause of counterproductive behaviors.

include developing and analyzing Cost Estimating Relationships (CERs), Parametric Cost Estimation, Business Case Analysis (BCA), Source Selection Support, Proposal Evaluation, and Negotiation Support, among other things.

However, according to Dryden, the same budget constraints making cost consciousness such an imperative for defense procurement also may make it hard to form new organizations to provide this support. In addition to capitalizing on the available assistance from Price Fighters, programs can benefit from an effort by the Defense Contract Management Agency (DCMA) to rebuild its pricing capabilities. Integrated Cost Analysis Teams (ICAT) provide intensive business and technical pricing support at major contractor locations, and elsewhere they can provide surge support for major proposals as well as augment support for overhead should-cost reviews. DCMA is working on expanded training for a more capable pricing workforce across the board. More information about accessing these capabilities is available at http://www.dcma.mil/DCMAHQ/_files/Pricing_Brochure.pdf.

The Statute, Policy and Process sub-team acted to infuse cost-consciousness training into existing curriculum. Modules have been incorporated into specific DAU courses as well as the BBP Web Portal (http://bbp.dau.mil/). The next step is coordinating with service schools to include cost-consciousness content that will introduce those who will work with the AWF in the requirements definition stage to the elements that make up a cost-conscious culture.

The second lever, represented by the Accountability subteam and led by Ross Guckert, Assistant Deputy for Acquisition and Systems Management, reviewed awards, senior leader performance objectives, and cost conscious metrics, including obligation rates, should cost/will cost and Configuration Steering Board (CSB) data. They first reviewed the Service and Office of the Secretary of Defense (OSD) award structure to see whether new awards could encourage cost-conscious behavior. The team found at least 21 existing awards already included significant acknowledgement of behaviors that support a cost-conscious culture, and concluded that new awards would be duplicative. Nevertheless, the team acknowledged the importance of rewarding cost-conscious behavior.

The bulk of the efforts on the accountability side were in defining the metrics that assess whether the actions taken in the name of cost consciousness are working toward the overall aim of achieving greater efficiency and productivity in defense spending. The data examined were based on the observed counterproductive behaviors. In relation to end-of-year obligations, the team looked at obligation rates—both 5-year averages and snapshots from the last few years in which the department operated under a continuing resolution for a significant period. This effort was transferred to the OSD Comptroller and AT&L Acquisition Resources and Analysis (ARA) for further study. For the requirements picture, the data gathered from the CSBs were analyzed and passed to OSD for summary in an OSD *Memo on CSB Best Practices*. Relating to contract negotiations and cost visibility, the team supported an ARA initiative to review the should-cost data from the Services annual reports to OSD.

After more than a year of working to improve cost consciousness in DoD, the accountability team concluded its efforts and turned their projects over to various OSD offices for further analysis and action.

The last lever, communication, is an integrator of the larger effort based on the idea that the first step in changing the culture is to build wider understanding of reasons to change. Communication also can alert the audience—the acquisition workforce—to counterproductive behaviors and reasonable ways to address these behaviors. Since cultural change involves changing beliefs, another goal of the communication effort is to point out current beliefs that have outlived their usefulness in the acquisition process. Spreading the word about efforts under way and asking for input, lessons learned, and creative solutions are critical to proving that if one follows the cost-conscious mantra, a successful program will result with benefits for the warfighter and the taxpayer.

Gaining recognition for program successes in cost consciousness also is a significant aspect of the communication lever. The team is pursuing examples from programs to publicize because education on what is working well will help in the desired culture change.

Retiring in May after more than 35 years in federal service, Dryden turned over lead of the Cost Consciousness team to Paul Peters, Principal Deputy Assistant Secretary of Defense for Logistics and Materiel Readiness.

"As with any long-term project, you can expect a number of people to have a hand in its development and execution. We're certainly used to that in the department, and instilling a culture of cost consciousness will necessarily be long term because of the nature of culture change," said Peters of the team's goal. "Our imperative stems from a passion to preserve warfighter readiness. The days of bounty are long over for Defense. It is urgent that we act now on a culture of cost consciousness to build more capability per dollar to maintain our strategic advantage. The implementing guidance we've been given is very simple—although hardly easy. Our collective commitment to controlling costs, increasing productivity, and providing greater value to the warfighter and the taxpayer animates everything about BBP 1.0 and 2.0. Our team is working on the specific changes, sometimes just to a point of view, that can move us onward toward improving acquisition performance. Mr. Kendall says it well: 'If we allow ourselves to think of spending the budget as our goal, or fixate on meeting obligation rates over value received, or worry more about protecting "our funding" as opposed to whether we can spend it efficiently or not, then we will not succeed.' "

Peters emphasized the importance to the team of receiving feedback from across the AWF to find creative solutions for instilling a cost-conscious culture: "This team doesn't have the monopoly on smart ideas, and although they've spoken with a lot of people with a wide range of experience, we can still benefit from those in the trenches of acquisition who know what will and won't work and are uniquely positioned to understand the barriers that are keeping them from getting the best value possible for the dollars entrusted to us."

To provide input, workforce members with suggestions, concerns or questions should contact the Cost Consciousness team through BetterBuyingPower@osd.mil.

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MDAP/MAIS Program Manager Changes

With the assistance of the Office of the Secretary of Defense, *Defense AT&L* magazine publishes the names of incoming and outgoing program managers for major defense acquisition programs (MDAPs) and major automated information system (MAIS) programs. This announcement lists all such changes of leadership, for both civilian and military program managers for the months of May and June 2013.

Army

Col. Robert L. Barrie Jr. relieved **Col. Robert L. Marion** as project manager for Cargo Helicopter in May.

Navy

CAPT Michael C. Ladner relieved **CAPT Timothy A. Batzler** as program manager of Standard Missile Six and the Phalanx Improvement Program (IWS 3.0) on May 3.

David K. Hansen relieved **Andrew P. Dwyer** as program manager of Global Combat Support Systems (GCSS) on May 5.

CAPT Albert G. Mousseau relieved **CAPT Brian K. Corey** as program manager of Advanced Anti-Radiation Guided Missile Program (PMA 242) on June 20.

Air Force

Col. Robert A. Strasser relieved **Col. Mark C. Williams** as program manager for the B-2 Extremely High Frequency Satellite Capability Program (B-2 EHF) and for the B-2 Defensive Management System Modernization Program (B-2 DMS Mod) on May 3.

Dana W. Whalley relieved **George K. Francois** as program manager for the Space Fence Program on May 22.

Col. Jeffrey C. Sobel relieved **Colonel Jason J. Denney** as program manager for the Advanced Medium Range Air-to-Air Missile Program (AMRAAM) on May 30.

Col. William T. Cooley relieved **Col. Bernard J. Gruber** as program manager for the Navigational Signal Timing and Ranging Global Positioning System (Navstar GPS), Military GPS User Equipment Program (MGUE), Next Generation Operational Control System (GPS OCX) and the Global Positioning System III Program (GPS III) on June 11.

Fourth Estate

Defense Logistics Agency:
Sabrina Holloway relieved **Cynthia Beck** as program manager for the Defense Agencies Initiative on May 17.

Special Operations Command:
Col. Samuel L. Peterson relieved **Col. Timothy Chyma** as program executive officer, Special Operations Forces Support Activity (SOFSA) on June 28.

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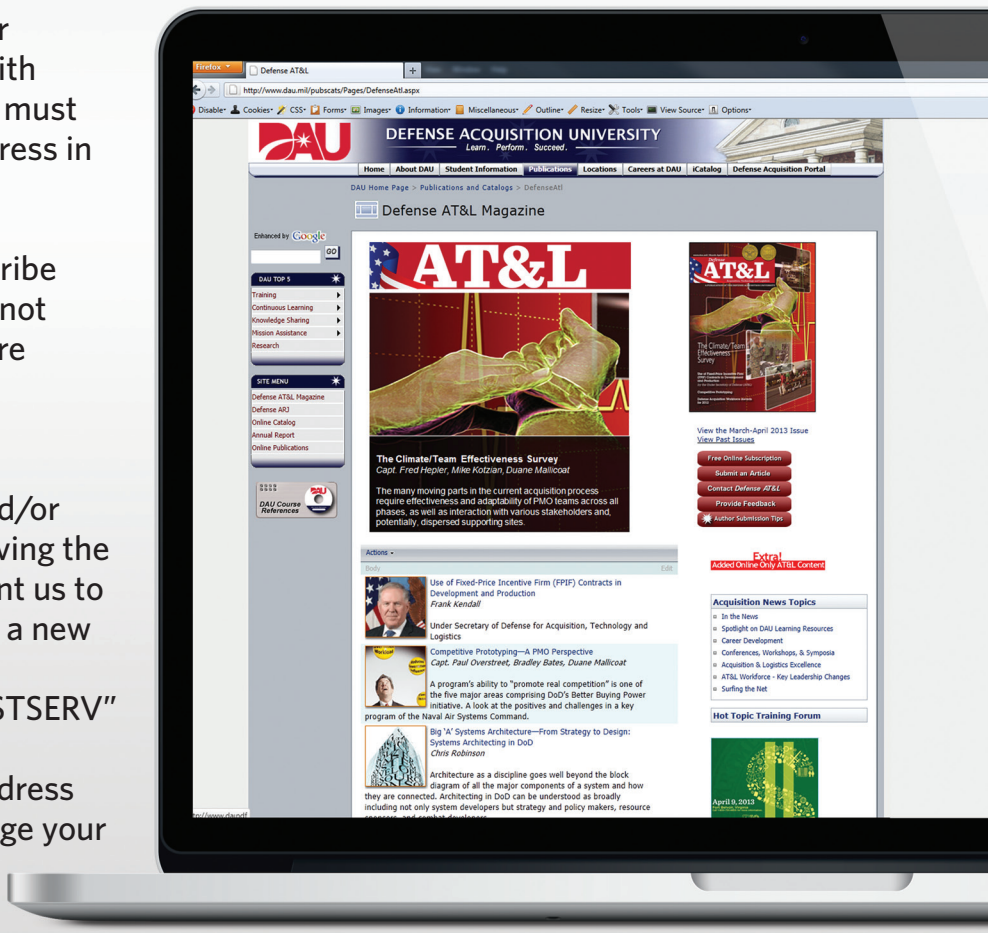
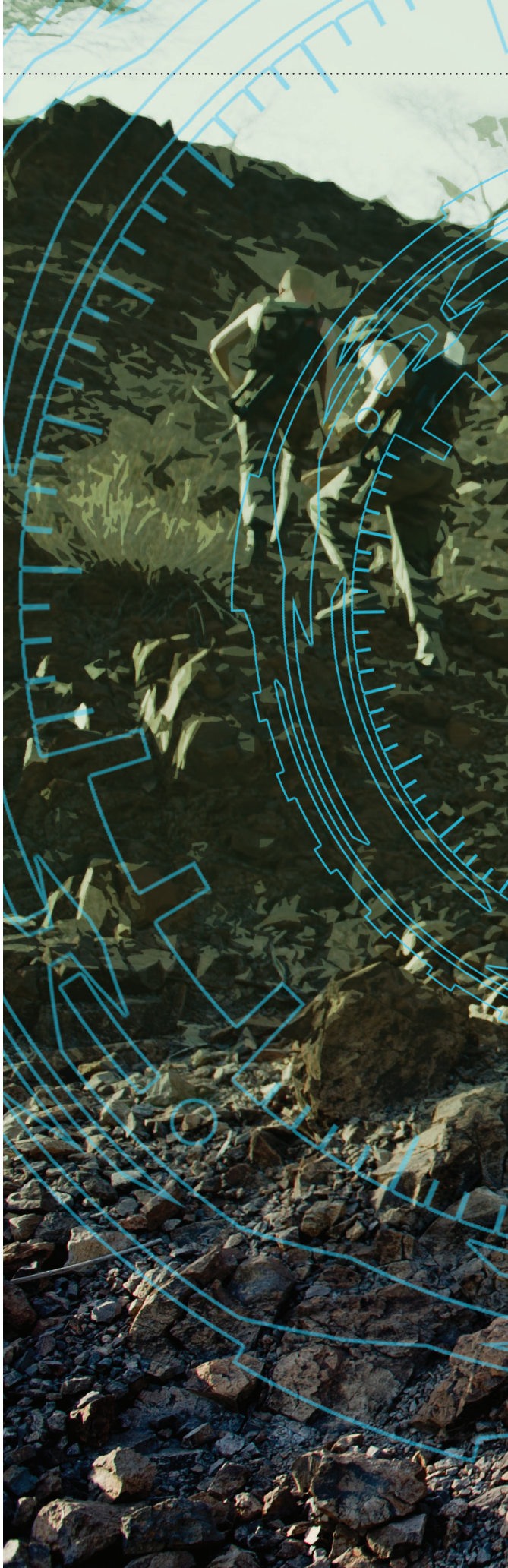


DoD Open Systems Architecture Contract Guidebook for Program Managers

A Tool for Effective Competition

Nickolas Guertin ■ *Thomas Hurt*



The Department of Defense (DoD) has reached a critical juncture, when, despite shrinking defense budgets, the demand for superior warfighting capability has never been greater. New methods must be used to get more affordable acquisition results while developing systems that can change quickly to meet new warfighter capability demands. This is the driving message behind Better Buying Power (BBP) 2.0 and the reason Open Systems Architecture (OSA) is featured so prominently in the pillar for Promoting Effective Competition.

Using best practices from across the Services is a powerful and effective way for the DoD to restore affordability and productivity by better utilizing its "buying power." An inextricable part of making the government a better monopsonistic buyer—in a market in which it is the only buyer of certain products and services—is

Guertin, *a professional engineer, is the director of transformation for the Deputy Assistant Secretary of the Navy for Research, Development, Test and Evaluation (DASN [RDT&E].* **Hurt** *is deputy director for software engineering, software assurance, open systems architecture, data rights, and software areas of counterfeit prevention in the office of the Deputy Assistant Secretary of Defense for Systems Engineering (DASD[SE]. The authors are the Open Systems Architecture OSA)-Data Rights (DR) team's action officers. The Department of Defense OSA-DR team is charged with developing guidance, tools, and training—including the* DoD *OSA Contract Guidebook for Program Managers—to improve the use of OSA and the strategic use of intellectual property in acquisitions across the DoD enterprise. The group is co-led by the DASN [RDT&E] and the DASD[SE].*


Open Systems Architecture
Contract Guidebook
for Program Managers

creating and maintaining a competitive environment that motivates the defense industry to deliver cost-effective solutions. To create such an environment, the government needs to make a concerted effort to "promote effective competition" in the marketplace for defense goods and services, as prescribed in BBP 2.0.

According to BBP 2.0, two of the tenets for promoting effective competition are:

- Emphasize competition strategies and create and maintain competitive environments.
- Enforce open system architectures and effectively manage data rights.

The DoD *Open Systems Architecture Contract Guidebook for Program Managers (*hereafter referred to as the *Guidebook)* addresses both of the points above by providing Program Managers (PMs) with the basic elements to capture the benefits of an open business model in order to create a competitive environment. An open business model incorporates OSA principles, alongside the smart utilization of data rights (DR), for effective competition across the entire DoD enterprise. The *Guidebook* provides specific request for proposal (RFP) language and programmatic examples to help the acquisition workforce better articulate its specific needs through contracts to get the best deal.

Version 1.1 of the *Guidebook* was released in June, with both an interactive website (https://acc.dau.mil/osaguidebook) and print versions. Members from across the Services collaborated to create this document, with the DoD Open Systems Architecture–Data Rights Team leading the coordination efforts. This *Guidebook* is authorized for release by the USD(AT&L)-chartered team led by the Deputy Assistant Secretary of the Navy, Research Development, Test and Evaluation (DASN [RDT&E]) and the Deputy Assistant Secretary of Defense for Systems Engineering (DASD [SE]), in collaboration with Defense Procurement and Acquisition Policy (DPAP). The *Guidebook* is designed to be used by all PMs to incorporate OSA principles into the acquisition of any system(s) or service.

What is an Open Business Model? What Does it Have to do With BBP?

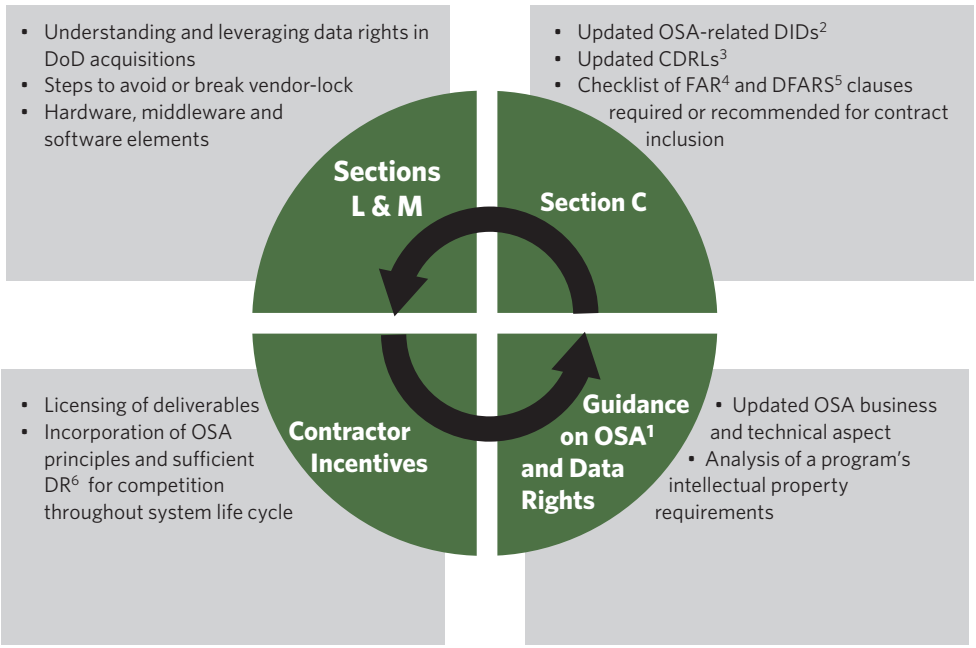
A key enabler for open architecture is the adoption of an open business model, which requires doing business transparently to leverage the collaborative innovation of numerous participants across the enterprise—permitting shared risk, maximizing asset reuse and reducing total ownership costs. The combination of open architecture and an open business model permits the acquisition of OSAs that yield modular, interoperable systems allowing components to be added, modified, replaced, removed and/or supported by different vendors throughout the life cycle in order to drive opportunities for enhanced competition and innovation.

The DoD's BBP website defines an open architecture as a technical architecture that adopts open standards supporting a modular, loosely coupled and highly cohesive system structure that includes publishing of key interfaces within the system and full design disclosure regardless of the DR early in a program development that should reduce program risks. Full design disclosure refers to the government's desire for early and frequent disclosure throughout the design and integration build processes, as a means of managing the government's risk. In this way, the government can monitor the progress of development in advance of milestone reviews. This, of course, is not a replacement for requiring deliverables as part of the contract. Open architecture coupled with improved acquisition of data rights strengthens the government's buying power, facilitating the procurement of the appropriate level of rights necessary for transparency, obtaining limited rights or restricted rights when Government Purpose Rights are not necessary for life-cycle sustainment or other purposes like reprocurement, organic support, product improvement, etc.

Perhaps the most expedient way to determine if a system employs open architecture is to see if the program can answer affirmatively the following question:

Can one or more qualified third parties add, modify, replace, remove, or provide support for a component of a system, based on open standards and published interfaces for the component of that system?

Figure 1. Contents of the Department of Defense (DoD) Open System Architecture Contract Guidebook for Program Managers



Note: The language contained in this *Guidebook* should be tailored to reflect the program's phase and the goals of the intended procurement action, and should gain local approval to use *Guidebook* elements. This *Guidebook* is intended to implement and supplement, rather than replace, authoritative source materials such as the FAR, the DFARS, and other applicable DoD policy and guidance.

1. Open Systems Architecture
2. Data Item Descriptions
3. Contract Data Requirements Lists
4. Federal Acquisition Regulation
5. Defense Federal Acquisition Regulation Supplement
6. Data Rights (Government's license rights)

The guidance set forth in this *Guidebook* is applicable to both large and small business contracts and can be used in support of BBP 2.0's mandate to increase small business roles and opportunities.

Contents of the *Guidebook*

The *Guidebook* provides candidate language for the sections of an RFP that need to be created by the associated program office. It also contains information on how to establish OSA practices in both new and existing programs and how to ensure those practices are adhered to throughout the program life cycle. This *Guidebook* is divided into five chapters containing suggested language for RFP Sections C, H, L, M, and Contractor Incentives. It also has 11 appendices covering a range of related topics to help the acquisition community understand how to invoke OSA and establish open business models for their systems.

Execution of an effective OSA and Intellectual Property Strategy including strategic asset reuse must be considered from both a Pre-Award and Post-Award perspective. But first, each PM must have complete knowledge of the data delivered and then data delivered in other programs. In accordance with BBP 2.0, decisions about data and the accompanying data rights and open systems elements must be made earlier in the planning phase to ensure the government spends the least to effectively get the best with taxpayers' dollars. In addition, solicitations should be written to incentivize potential contractors to offer an open system approach up front before award when the government's leverage and bargaining power are the greatest.

What Makes this *Guidebook* Different?

This *Guidebook* provides information not covered in other guidance documents in areas such as contract incentives. The incentive structures described in this *Guidebook* have the added benefit of reinforcing the importance of the government's emphasis on collaborative business relationships, technical leadership, planning, and execution. This *Guidebook* provides the structure for incentivizing OSA technical tenets, business practices, and cooperative behavior with other vendors as well as the more usual quality, timeliness, technical progress, technical ingenuity, and cost-effective management requirements. This document provides guidance on the use of Cost Plus Incentive Fee, Cost Plus Award Fee, and Cost Plus Award Term, in accordance with instruction provided by Under Secretary Kendall in his article titled "Use of Fixed-Price Incentive Firm (FPIF) Contracts in Development and Production," in *Defense AT&L* magazine, March–April 2013.

The *Guidebook* also offers language for Section H of the RFP that can be incorporated into contracts as appropriate. The *Guidebook* recommends that programs consider developing a "Section H Special Provision" that, at a minimum, incorporates the contractor's proposal relating to an Open System Management Plan into the resultant contracts and requires government concurrence prior to any change in that plan. As with all sections of the *Guidebook*, all recommendations are offered with the understanding that individual Program Executive Offices (PEOs) and programs must have the flexibility to adapt its principles and guidance to meet their needs, in addition to gaining local approval to use *Guidebook* elements. This *Guidebook* is intended to implement and supplement, rather than replace, authoritative source

materials such as the FAR, the DFARS, and other applicable DoD policy and guidance. Users must continue to consult and comply with the most recent versions of the FAR and DFARS, and other governing DoD policy and guidance, in addition to this *Guidebook*, when developing acquisition materials.

Figure 2. Summary of Updates in Version 1.1 of the Guidebook

Participation by all Services, including OSD[1], Office of the General Counsel, an DAU[2]; and SMEs[3] from different disciplines of the Defense Agencies		
Better guidance on data rights, IP[4] strategy, and business modeling		Evaluation of Special Clauses for inclusion in DFARS[5]
Open Source Software Guidance	Revised Contract Incentives section	Subsumation of OSJTF[6] and MOSA[7] concepts

1. Office of the Secretary of Defense
2. Defense Acquisition University
3. Subject Matter Experts
4. Intellectual Property
5. Defense Federal Acquisition Regulation Supplement
6. Opens Systems Joint Task Force
7. Modular Open Systems Architecture
8.

This *Guidebook* is a living document, which is expected to be updated biennially to incorporate community inputs and address topics that emerge from the DoD enterprise's experience from implementing OSA. Therefore, the authors are very interested in comments, suggestions, and feedback, including any "real world" experiences one may have in using OSA principles in programs.

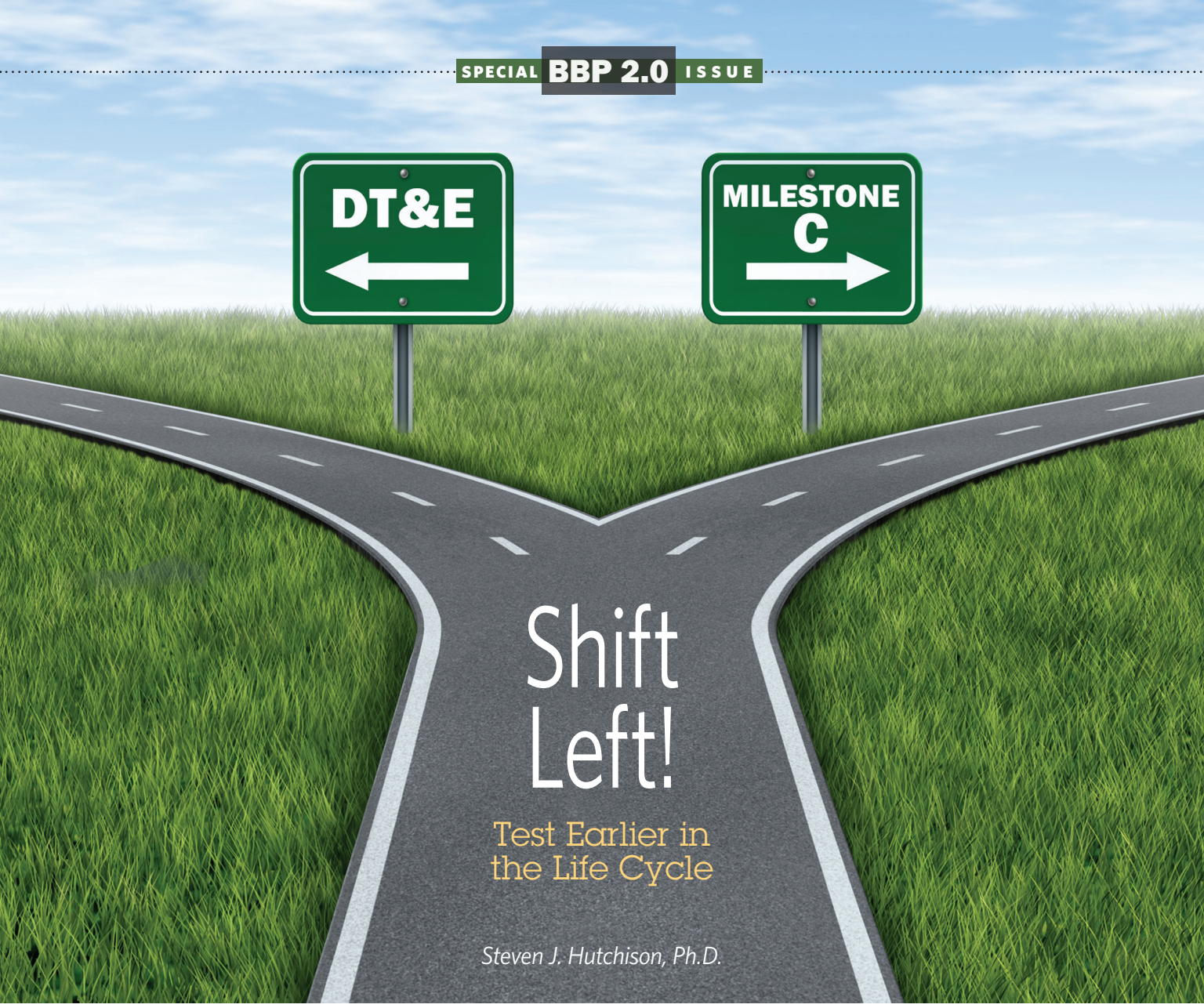
What's Next

The *Contract Guidebook* is one of numerous tools available or in development to help the government more effectively promote competition to drive down costs and spur innovation. Continuous learning modules, such as the Defense Acquisition University's CLE 012 on open architecture and CLE 068 on data rights, are available to the acquisition workforce to learn more. To further educate the acquisition workforce on the topics of OSA and DR, the DoD OSA–DR team is developing an *IP Strategy Guide* as well as an update to the *Procedures for Acquisition and Management of Technical Data* (DoD 5010.12-M).

The *Guidebook* is one of many initiatives associated with the implementation of BBP 2.0 to deliver the latest innovations to the warfighter at a more affordable cost to the taxpayer. These initiatives change the way the DoD does business, with the end goal of increasing value for both the warfighter and the taxpayer through more effective and sustainable acquisition strategies.

The authors may be may be contacted at **nickolas.h.guertin@navy.mil**, *and at* **thomas.hurt@osd.mil**.

For more information on the contents of the Guidebook, *please visit https://acc.dau.mil/osaguidebook*



Shift Left!

Test Earlier in the Life Cycle

Steven J. Hutchison, Ph.D.

To achieve the outcomes of Better Buying Power (BBP) and deploy improved capability to our warfighters in an effective and timely manner, we have to get the development right and verify it through rigorous developmental test and evaluation (DT&E) before we commit to production. In other words, we have to Shift Left!

We have to change the paradigm that encourages testing late in the acquisition life cycle. Our acquisition process has some important test and evaluation (T&E) activities occurring after the decision to begin production. Why does this matter? In short, testing late means finding problems late, when it is most costly to fix. Late discovery then leads either to delayed deployment—or to accepting and fielding the system, where our warfighters will bear the burden of the development shortcoming.

The Shift Left initiative fundamentally is about improving DT&E to set the conditions for successful production and deployment. Shift Left achieves this goal through earlier identification and correction of failure modes, thereby

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avoiding the high costs of late cycle repair and reducing the impact to our warfighters of fielding capabilities that do not satisfy requirements.

There are three key elements of Shift Left: earlier testing for interoperability, earlier testing of cybersecurity, and conducting DT&E in a mission context. While shifting tests of interoperability and cybersecurity earlier in the life cycle forms a more comprehensive set of pre-production developmental test activities and gains test efficiencies, mission context is essential to adequately evaluate (and expose potential failure modes in) the four critical developmental issue areas: performance, reliability, interoperability, and cybersecurity. Bringing mission context into DT&E does not mean program managers (PMs) have to rehearse the initial operational test and evaluation (IOT&E), but getting the system out of the lab to see how it actually will be used always should be an important part of developmental testing (DT). Interoperability has proven to be a persistent challenge, especially throughout the past decade of combat operations, which suggests we are not finding interoperability issues early enough in DT to fix them before operational urgency demands the system go to the field. There also are considerable data from assessing information assurance during operational exercises that show that fielded systems are vulnerable in the cyber domain. Clearly many of the interoperability issues and cybersecurity vulnerabilities could have, and should have, been found and corrected before the systems were fielded.

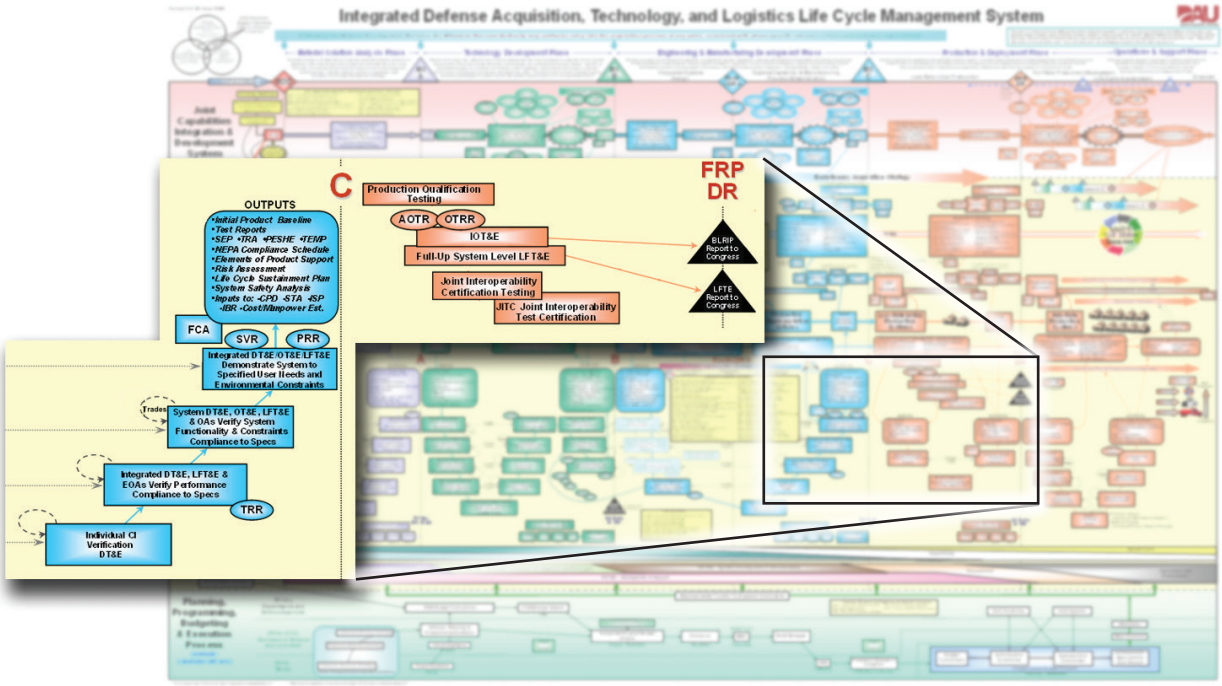
The Office of the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD[DT&E]) and Director, Test Resource Management Center (TRMC) has embarked on a course to work aggressively with chief developmental testers and lead DT&E organizations to help them achieve the objectives of BBP, and more important, to help ensure that a development problem does not become a warfighter problem.

Developmental Testing in the DoD Acquisition Process

Take a look at the array of T&E activities relative to the Milestone C decision as depicted on the acquisition "wall chart" (https://ilc.dau.mil). The wall chart is a detailed systems-engineering-based depiction of activities and critical decisions described in the DoD 5000 series directive and instruction. Figure 1 highlights the main T&E activities. This image illustrates what appears to be a good DT&E strategy as the program moves up the right-hand side of the engineering and manufacturing development (EMD) phase "systems engineering V" in preparation for Milestone C. But it is incomplete. Joint interoperability certification testing follows Milestone C during the production and deployment phase, and cybersecurity testing, which is not shown on the wall chart but is critically important for today's Net-enabled capabilities, typically occurs after Milestone C and under the auspices of the Defense Information Assurance Certification and Accreditation Process (DIACAP) (DoD Instruction 8510.01). In terms of informing the Milestone C decision, interoperability and cybersecurity testing are late to need. Interoperability and cybersecurity certification involve critical test activities that should be part of a robust DT&E strategy.

Since this discussion is based on a chart image, the question is: What outcomes are programs achieving in the real world? Where interoperability and cybersecurity are concerned, we have considerable data showing that unresolved

Figure 1: Test and Evaluation in the Defense Acquisition System



issues continue to be discovered in operations. One source of data is the program of interoperability and information assurance assessments during Combatant Command and Service exercises. After almost a decade of these assessments, the program continues to observe

> ... cyber effects caused by unresolved interoperability deficiencies, coupled with low-to-moderate level threats that were sufficient to adversely affect the quality and security of mission critical information in a way that could (and where permitted did) degrade mission accomplishment significantly. (http://www.dote.osd.mil/pub/reports/FY2012/)

Since this program assesses the interoperability and information assurance posture of operational systems, it provides value in process hindsight; in other words, it lets us see what got through the certification processes into the field. While this program is a significant source of vulnerability information, it is subject to real-world limitations when conducting cybersecurity testing on live networks with live data (note use of the phrase "where permitted" in the quote above). We have the means to overcome this limitation in DT&E. We can be certain, though, that the interoperability and information assurance certification processes permit numerous defects to get to the field and it is time to reverse that trend.

Shift Left!

The intent of Shift Left is to set the conditions for improved production readiness and reduce the likelihood that major deficiencies get to the field. Shift Left also is an effort to influence an acquisition culture that today focuses on IOT&E and the full-rate production decision. Since these events are late in the life cycle, PMs frequently trade off testing during DT ("we'll do that in operational testing [OT]") for other priorities. Late life-cycle focus also effectively lowers the bar for entry into low-rate initial production (LRIP), and consequently rarely pays off. This is not a new trend; in July 2000, the General Accounting Office (GAO now the Government Accountability Office]) wrote: "Despite good intentions and some progress by the Department of Defense (DoD), weapon system programs still suffer from persistent problems associated with late or incomplete testing" (GAO, "Best Practices: A More Constructive Test Approach Is Key to Better Weapon System Outcomes," July 2000; http://www.gao.gov/assets/160/156809.pdf).

The Weapons System Acquisition Reform Act (WSARA) of 2009 is the most recent attempt by Congress to help DoD acquisition. One of the means to improve acquisition outcomes through this legislation was renewed emphasis on DT&E, implementing several recommendations from the May 2008 Report of the Defense Science Board (DSB) Task Force on Developmental Test and Evaluation (www.acq.osd.mil/dsb/reports/ADA482504.pdf). This included establishment of a DT&E director under the supervision of the Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]). The WSARA also required component acquisition executives to provide appropriate resources for developmental test organizations to "participate in and oversee the conduct of developmental testing, the analysis of data, and the preparation of evaluations and reports based on such testing." More legislative support for DT&E appeared in section 835 of the FY2012 National Defense Authorization Act (NDAA), requiring each major defense acquisition program to be supported by a chief developmental tester, and a government test agency to serve as lead DT&E organization. Section 904 of the FY2013 NDAA continued the trend and granted additional authorities for the DASD(DT&E).

Unfortunately, these legislative efforts fall short of addressing the late life-cycle emphasis on full-rate production. In fact, legislation drives much of the focus late in acquisition: 10 U.S.C. section 2399 establishes considerations for operational test and evaluation; it does not offer similar considerations for DT&E. Moreover, sections 2366 and 2399 both establish conditions for proceeding beyond LRIP; there are not similar conditions for proceeding into LRIP. The GAO reported this finding almost 20 years ago:

> Congress may wish to require that all defense acquisition programs (major and nonmajor) conduct enough realistic testing on the entire system or key subsystems to ensure that key performance parameters are met before LRIP is permitted to start. The objective of GAO's recommendations is to avoid the premature commitment to production and thereby avoid fielding systems that do not meet requirements and need costly and time-consuming retrofits. (GAO, Weapons Acquisition: Low-Rate Initial Production Used to Buy Weapon Systems Prematurely, November 1994; http://www.gao.gov/assets/160/154796.pdf)

In other words, the GAO was recommending a Shift Left. And it hasn't just been the GAO; there have been countless Blue Ribbon commissions, Defense Science Board panels, National Research Council studies, Inspector General reports, industry

reports, etc., that all make the same recommendation: When it comes to testing, earlier is better.

The challenge for us is to overcome process inertia and positively effect change for acquisition programs. Developmental testing has a significant role in accomplishing this objective, but the key is simply to "do better DT&E" to find and fix the problems before entering production. Doing better DT&E requires us to get beyond the notion that DT is just "technical testing." On the back of the wall chart, for example, is this definition of Developmental Test and Evaluation: "A technical test conducted to provide data on the achievability of critical system performance parameters." A 2006 National Research Council report, "Testing of Defense Systems in an Evolutionary Acquisition Environment," recommended revising DoD testing procedures to "explicitly require that developmental tests have an operational perspective (i.e., are representative of real-world usage conditions) in order to increase the likelihood of early identification of operational failure modes and system deficiencies... ." (http://www.nap.edu/catalog.php?record_id=11575). The way I see it, if programs conduct DT&E only to verify compliance with specifications, we will completely miss the sense of whether the capability satisfies the warfighter's need. However, if programs test in a mission context during DT&E, not only will we be able to answer the technical questions, but we will obtain that critical user feedback early in the life cycle—that's a 2-for-1 better buying power bargain!

Robust DT&E should include all of the elements of interoperability and cybersecurity testing and bring the right resources to bear to provide confidence in the decision to enter production. As DoD acquisition programs become increasingly complex, DT&E must leverage all resources and test venues as potential data sources, to include use of modeling and simulation, and where practical, leverage training exercises, experimentation, and operations. DT&E should exploit the power of the network—such as the joint mission environment test capability (JMETC)—as a way to bring test resources together to reduce cost, gain efficiency, and improve realism. End-to-end testing using joint mission threads, and testing with a realistic cyber threat (in a cyber range suited for that purpose) will provide this confidence.

We are making progress in shifting interoperability testing to the left. The latest version of the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6212.01F, Net Ready (NR) Key Performance Parameter (KPP), states:

> (A.2.c) DoD Components will ensure the Component Developmental Test and Evaluation (DT&E), Operational Test and Evaluation (OT&E) processes include mission-oriented NR KPP assessments ... .

Note the emphasis on "mission oriented" assessments. Additionally, the CJCSI 6212 establishes a relationship between the Joint Interoperability Test Command (JITC) and DASD(DT&E) to ensure more attention to interoperability during DT&E:

> (A.7.b) DISA will ensure JITC leverages previous, planned and executed DT&E and OT&E tests and results to support joint interoperability test certification and eliminate test duplication. DASD(DT&E) shall approve Developmental Test and Evaluation plans in support of Joint Interoperability Test Certification as documented in the TEMP [Test and Evaluation Master Plan]. JITC shall advise DASD(DT&E) regarding the adequacy of test planning in support of Joint Interoperability Test Certification.

In meeting with JITC, we determined that the best path forward was not to introduce a burdensome new test plan approval process; rather, we decided to work with chief developmental testers to add, where appropriate, relevant interoperability tests and data collection activities during DT&E, and reflect the interoperability test objectives in the DT&E event descriptions and required resources in the TEMP.

We have a similar effort in the update to the DoD 8500 series directive and instructions for cybersecurity. The 8500 series is under revision to implement the "risk management framework" for cybersecurity. As was highlighted in the discussion of Figure 1, our current process does not adequately incorporate cybersecurity testing as a critical developmental test activity. Security test and evaluation (ST&E) has been all but lost in the current DIACAP process. Security test and evaluation was defined under the former DITSCAP process (DoD Information Technology Security Certification and Accreditation Process, DoDI 5200.40), which preceded DIACAP, as "examination and analysis of the safeguards required to protect an IT system, as they have been applied in an operational environment, to determine the security posture of that system."

The phrase "safeguards required" is interesting. We test to requirements, and all acquisition programs have a set of "mandatory" KPPs that drive major elements of the test strategy. The "mandatory" KPPs (the *Manual for the Operation of the Joint Capabilities Integration and Development System,* Jan. 19,

2012, uses the word "mandatory" in quotes) include force protection, survivability, sustainment, Net-ready, training, and energy. There is not a cybersecurity KPP. One can argue that the survivability KPP can be applied to systems in the cyber domain, but that just diminishes what should be considered today a mandatory requirement, with well-defined attributes specifically written for network-enabled military capabilities. The department should mandate a cybersecurity KPP, require cybersecurity testing in DT&E, include it in the TEMP, and resource it accordingly. The department also should require all programs to test cybersecurity with a realistic cyber threat, and make use of a cyber range to limit the risk of collateral damage to live networks and data sources.

Shift Left is a priority initiative for the DASD(DT&E) and Director, TRMC. In our engagement with programs, we are assisting PMs, chief developmental testers, and the lead DT&E organizations in developing and executing a comprehensive DT&E strategy that evaluates the system in a mission context, and includes early testing of interoperability and cybersecurity. We will help programs craft the wording in TEMPs and other documents to reflect a sound DT&E strategy that will set the conditions for initial production. We will assist programs in provisioning the necessary infrastructure resources, such as a cyber range and the JMETC. We sponsor the Scientific Test and Analysis Techniques Center of Excellence at the Air Force Institute of Technology (http://www.afit.edu/en/stat_te_coe) to assist programs with statistical approaches to test design. Finally, consistent with the 2008 DSB recommendation for the DT&E office to brief an "assessment of DT results" at milestone decision reviews, we will make an internal shift left process change, and transition the "assessment of operational test readiness" (AOTR) (note its placement in Figure 1), to a "DT&E Assessment" of performance, reliability, interoperability, and cybersecurity to better support acquisition decision making at each milestone decision.

Summary

Developmental test and evaluation is a tool PMs use throughout the life cycle to identify areas in need of improvement, manage risks, build confidence, and gain early and continuous feedback; it is the key to informing the decision to begin production, and sets the conditions for improved acquisition outcomes. Developmental testing is the key to acquisition agility and delivering capabilities to the warfighter more effectively and efficiently. To achieve the outcomes of Better Buying Power and deploy improved capability to our warfighters in an effective and timely manner, we have to get the development right and verify it through rigorous DT&E before we commit to production. We have to Shift Left!

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Additional materials can be found in the Acquisition Community Connection, DT&E Community at https://acc.dau.mil/CommunityBrowser.aspx?id=22039. *Also, check out my blog on the Defense Acquisition Portal at* https://dap.dau.mil/cop/trmcblogs.

Fiscal Challenges Within Defense Acquisitions

A Marine Corps Project Officer's View

Maj. Romeo Paolo Cubas, USMC

Decades of inefficiencies have plagued the Department of Defense (DoD) acquisition system because its organizations continue to suffer from fiscal irresponsibility. Regardless of the intensity of congressional oversight or the number of DoD policies and regulations, the cycle of programmatic mismanagement continues while the taxpayer and warfighter feel the pain.

The fiscal challenges inherent to the acquisitions system are difficult to solve and layered with complexities. Congressional budgetary issues, a culture fraught with risk aversion, an obsession with obligations and expenditure benchmarks, manpower shortages, a lack of communication, and fundamental differences of what is in the best interest of the taxpayer collectively have a significant impact on the efficiency of the process. The success of the defense acquisition system is predicated on a solid foundation of fiscal responsibility, and any cure for inefficiency and mismanagement will only take effect when the DoD workforce is allowed to operate in an environment that fosters judiciousness and budgetary discipline.

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One only has to look at the characteristics of any number of weapon systems ... to realize there is a prevalent trend in unnecessary features, questionable service uniqueness, and capability overkill.

For the sake of the user, practical decision making must trump a misplaced loyalty to frugality. In its present form, the contracting process is hamstrung by factors that affect a Program Management Office's (PMO's) ability to deliver a material solution while staying within cost, performance, and schedule constraints. All the issues with the defense acquisitions system are not necessarily under the control of any particular organization. However, it is incumbent on acquisitions professionals to judiciously address most of these challenges with strong leadership and accountability.

Requirements Generation: A Dysfunctional Process

Five years ago, during a testimony to the Senate Armed Services Committee (SASC) on the acquisitions of major weapon systems, former Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]) John Young recognized a growing trend in unrealistic requirements that exceeded technological capabilities, as well as established cost and schedule parameters. According to the testimony, unpredictable and inadequate budgets coupled with additional technical certifications compromised a program's affordability and led to schedule slip. In the same 2008 hearing, former Government Accountability Office (GAO) Managing Director of Acquisitions and Sourcing Management Katherine Schinasi declared that the acquisition process was inherently dysfunctional because DoD lacked a coherent and prioritized procurement strategy that valued joint needs instead of individual service interests. She also noted that requirements generation tended to revolve around assessments that focused on defeating potential enemy threats vs. achieving overmatch over current enemy capabilities, which needlessly increased programmatic costs and unnecessarily extended schedules. One only has to look at the characteristics of any number of weapon systems, aircraft, ground vehicles, Navy vessels, or command and control systems to realize there is a prevalent trend in unnecessary features, questionable service uniqueness, and capability overkill.

The Army's development of the 120 mm Advanced Multipurpose (AMP) tank round is a perfect example of this service redundancy and programmatic gold plating. Among its few characteristics, the (AMP) round will have the ability to arm as it leaves the Abrams's gun-tube, have more than three modes of detonation, and be able to detonate in airburst mode with incredible precision. It is hard to imagine a target inches or perhaps a few feet away from the front of a tank that cannot be suppressed or destroyed with machine-gun fire, a gunner having the time to select a mode of detonation based on the characteristics of a bunker or wall, or an airburst detonation that requires accuracy. This program is especially difficult to comprehend given that the Marine Corps tank community began a similar program in 2006—the Multipurpose High Explosive (MP-HE) round—and fielded it to a tank company in Afghanistan in 2011. Proven in combat, the round has a point-detonate, delay, and airburst capability, meets approximately 90 percent of the Army's requirements, and costs less than what it is estimated the AMP will cost when fielded in 2016, at the earliest.

However, program success is not defined by efficiency, performance, or timeliness, as was the case with the Marine Corps' MP-HE round; instead, as briefed by Ms. Schinasi, program success has been improperly defined as the receipt of funding and eventual initiation. Her Senate testimony and a number of follow-on congressional testimonies echo a sense of frustration among acquisition professionals that various stakeholders such as the DoD workforce, congressional sponsors, and the defense industry are complicit in a failed system that does not provide tangible incentives for efficient and timely product delivery. In the end, the warfighter and taxpayer are left dealing with the consequences of mismanaged programs and wasted funds.

Unrealistic Benchmarks and an Uncooperative Budgetary Process

Fiscal benchmarks and institutional processes further complicate the defense acquisition system and add to a PM's frustration. Any formalized acquisitions training program suggests that PMs are graded on whether their programs meet cost, schedule, and performance parameters. However, the unwritten rule in an acquisition command states that PMs are evaluated on how effectively they can obligate

and expend funds while meeting prescribed Office of the Secretary of Defense (OSD) benchmarks. If a DoD organization saves operating costs, the Comptroller will take the agency's funds the following year, in the hope it doesn't have negative consequences. In a 2011 testimony to the SASC on DoD Efficiencies Initiatives, the Comptroller, USD Robert Hale, confessed that while this approach might seem problematic, he has not found a better approach and recommends that the DoD continue looking for incentives.

In addition to the wasteful game of obligation and expenditures, congressional funding profiles and Continuing Resolutions (CRs) significantly impact the defense acquisition system. Contracts, test schedules, and delivery schedules are among a few of the programmatic events that cannot get executed properly unless there is a reasonable amount of predictability. Service headquarters prepare their Program Objective Memorandum (POM) initiatives outlining their fiscal needs for the next 6 years, but it seems rather irrelevant when the entire budget process is subject to change from year to year due to fiscal instability, political discord, and a lack of a signed budget. PMs plan for these eventualities and know the most realistic contract award date is during a fiscal year's third quarter due to the high likelihood of a CR. A PMO may be ready to execute a procurement contract award in the first quarter, but there is far less chance of a schedule slip if significant programmatic events are planned between April and June.

Although a CR may cause an activity to receive funds in January, PMs still have to meet OSD-mandated obligation and expenditure benchmarks. For example, a program's Research, Development, Test, and Evaluation (RDT&E) funds have an 80 percent expenditure benchmark by the end of the first fiscal year in which they were assigned. This unrealistic constraint forces a PM to find ways around the system to expeditiously obligate the funds, and it makes it almost impossible for test agencies to expend their funds in an appropriate amount of time. Acquisition commands often place additional funding constraints upon themselves in order to monitor obligation and expenditure rates. Some of these self-imposed limitations have adverse effects, such as when a PMO mandates that procurement funds be obligated in 1 year vs. its normal 3-year window for the sole purpose of achieving a quick obligation rate. These budget controls make it more difficult to use prior year funds, even though it is perfectly acceptable under federal fiscal code.

In a 2012 memorandum concerning the management of unobligated funds and obligation rates, USD(AT&L) Frank Kendall rightly concluded that acquisition leaders should rethink their programmatic success metrics. He said that, instead of focusing on benchmark execution and worrying about the threat of funds being taken away, acquisition leaders should concentrate on changing the culture to incentivize savings and the judicious obligation of funds. An individual's performance might also need to be evaluated by the amount of funding returned to the U.S. Treasury. Regardless of the incentives used to prevent fiscal gamesmanship, USD Hale acknowledges that the real impetus for changes has to come from top leaders.

The Contracting Process: The Ugly Truth

A former and well-respected PM of M1A1 Tanks Systems at Marine Corps Systems Command and Secretary of Defense (SecDef) Corporate Fellow, LtCol Wendell Leimbach believes that the slow contracting process is really a symptom of a congressionally controlled budgetary problem. The process is delayed further by an inherent risk aversion and an incessant fear of making mistakes. Some Contracting Officers (KOs) excessively agonize over Federal Acquisitions Regulations (FARs) interpretations, legal reviews, peer reviews, policies, and prolonged contractual language editing periods to ensure that a request for proposal (RFP) or a contract is completely defensible against industry protests or against allegations of fiscal irresponsibility. It is not uncommon for an Acquisition Category (ACAT) IV or Abbreviated Acquisitions Program (AAP) contract to take anywhere from 9 to 14 months from contract initiation to contract award. Fiscal responsibility is an obvious necessity, but over-analysis and excessive caution inevitably lead to inefficiency or inaction.

Aside from budgetary challenges and a culture of risk aversion, the contracting process also suffers from manpower problems and procedural inefficiencies. Many good KOs are not incentivized to stay in government and are recruited by industry with promises of more pay and greater career progression. Any remaining good KO is in high demand and overworked by several PMOs, and the increased workload on the KO demands that a PM rely more on the office's contract specialist. It is a unfortunate reality that regardless of the branch of Service or level of acquisitions management, project officers and PMs struggle with the contracting competency.

LCDR Elizabeth Hernandez, a renowned avionics systems project officer with Naval Air Systems Command, points out that to alleviate the problem, both competencies must ensure that the contract specialist be treated as an equal member of an Integrated Product Team (IPT) and involved in key conversations and significant events. While not quite as effective as having a readily available KO, the integration of a contract specialist results in the contracting competency having an increased understanding of the project's cost, schedule, and technical risks and overall improved communications. The back-and-forth of administrative changes in documentation and mundane programmatic questions also can be avoided with an available contracting representative. Furthermore, if KOs were to empower contracting specialists to make decisions and recommend strategies, they could work more independently, and better support the PM, thus mitigating the negative consequences of reduced manpower.

Influenced by various factors such as a heavy workload, a necessity for frugality, the looming expiration of funds, drawn-out legal reviews, and fears of industry protests, KOs generally prefer to expedite the contracting process and award lowest-

In today's fiscal environment there is an increasing tendency to select a vendor whose price is more palatable even in best-value solicitations regardless of the recommendation of the Source Selection Chairman.

price-technically acceptable (LCTA) contracts. The irony is that most PMs responsible for weapon systems desire best value contracts in order to maximize the opportunities of achieving the best solution at the best price. Contracts that focus on lowest cost may work for well-established technologies, but former PMs like LtCol Leimbach warn that they can prove disastrous for projects that require development or integration. This philosophical difference can be a source of tension within an acquisitions command, and it can be especially problematic during a source selection process when the KO serves as a Source Selection Authority (SSA). In today's fiscal environment there is an increasing tendency to select a vendor whose price is more palatable even in best-value solicitations regardless of the recommendation of the Source Selection Chairman. For this reason alone, KOs should not be assigned as SSAs, since they may lean toward the path of least resistance. Unfortunately, this habit continues within acquisition commands, even though KOs do not share the same level of accountability for cost, schedule, and performance as do members of the program management competency.

Conclusion

A dysfunctional requirements generation process, uncertainties in the budget cycle, adherence to fiscal benchmarks, and the challenges of government contracting are some of the contributing factors that lead to financial irresponsibility and mismanagement within defense acquisition. Although there are fiscal challenges that are out of the DoD's control, the department has to focus on what it can influence, and this begins by radically changing its cultural mindset. The acquisition workforce is programmed to believe that their organization's inability to obligate or expend its funding will mean certain cuts in next year's funding levels. This government culture fosters wasteful tendencies and forces employees to participate in a process of monetary gamesmanship.

Within the acquisitions disciplines, particularly the program management and contracting functions, there is a fundamental difference of what truly is of best value or a judicious use of taxpayers' dollars. A PM is guided by a requirements document that lists a system's key performance parameters and has to ensure delivery of a capability within prescribed cost, performance, and schedule constraints. Meanwhile, a KO wrestles with manpower limitations, FAR interpretations, legal opinions, threats of industry protests, and a product's cost. A PM and KO will more than likely be at odds because of various external pressures and differing levels of accountability. Consequently, the warfighter risks not receiving a capable system in a timely manner.

Congressional funding delays further complicate the contracting process. A PMO might receive funds as late as January and will start feeling significant pressure to obligate or expend money in July or risk losing it to a higher priority within the organization. Funding delays, pressures to meet benchmarks, and threats of funding reallocation effectively shortens a fiscal year to 7 months. A compressed timeline puts a PM and a KO in a predicament, since contracts will likely be awarded without the necessary attention to detail, eventually affecting product quantities, performance, and overall cost. Additionally, the availability of funds, established benchmarks, and schedule commitments may play a role in determining whether a program should be pursued as an LCTA or best-value contract.

Regardless of the challenges inherent to the defense acquisition system or the differences between the contracting and program management competencies, acquisitions leaders should focus on judiciously executing taxpayers' funds, instead of worrying about protecting their annual budgets or furthering their own organizational agendas. A change in culture that incentivizes government employees for saving money is urgently needed, and Kendall's memorandum on the management of unobligated funds and obligation rates, is certainly a step in the right direction. Key officials should abide by his guidance and actively look for opportunities to instill a culture of accountability and fiscal responsibility. If acquisition professionals are fiscally responsible, embrace a spirit of cooperation, and are ever mindful of their warfighting end users, they will make great strides toward solving the challenges of the defense acquisition system. &

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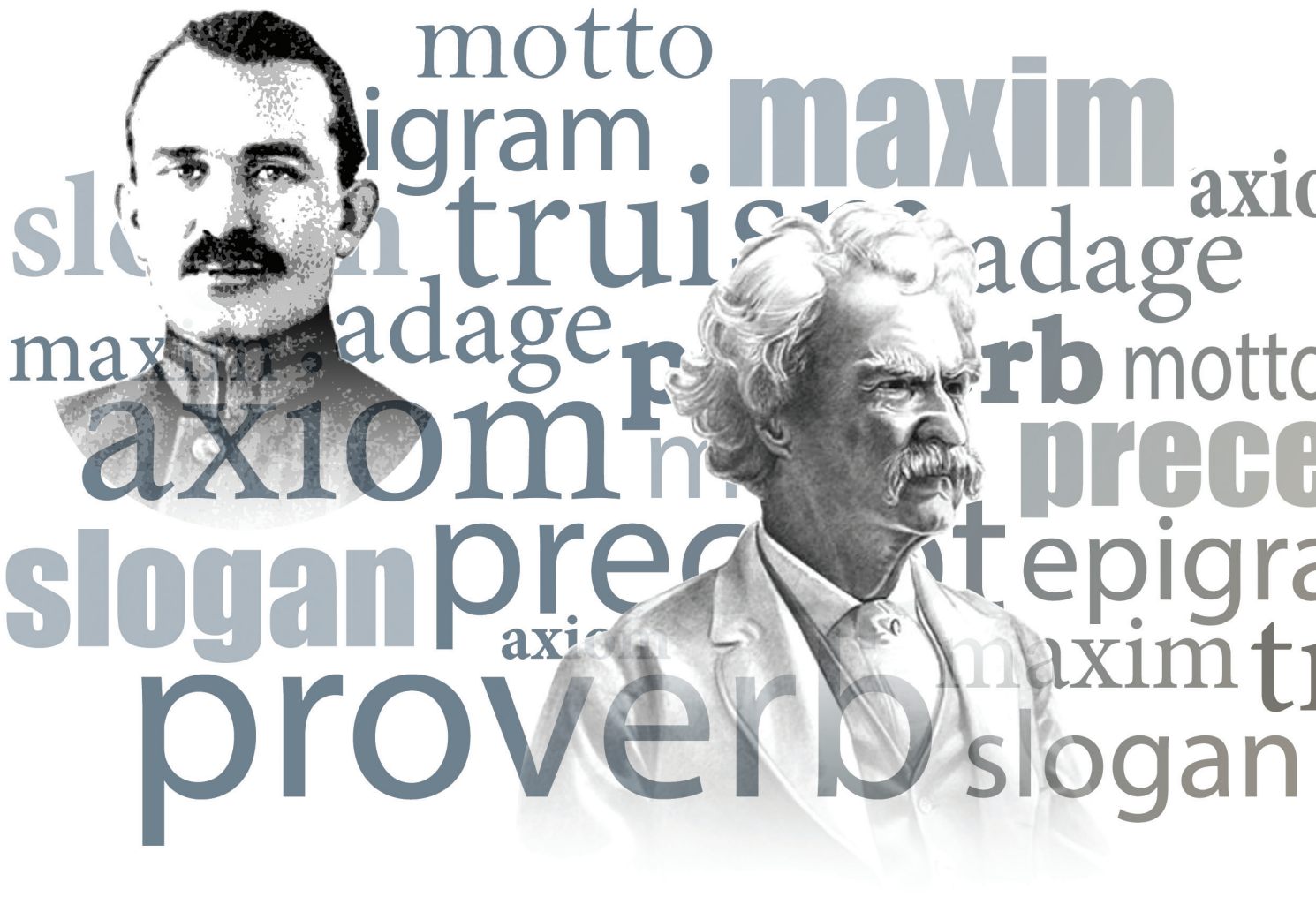


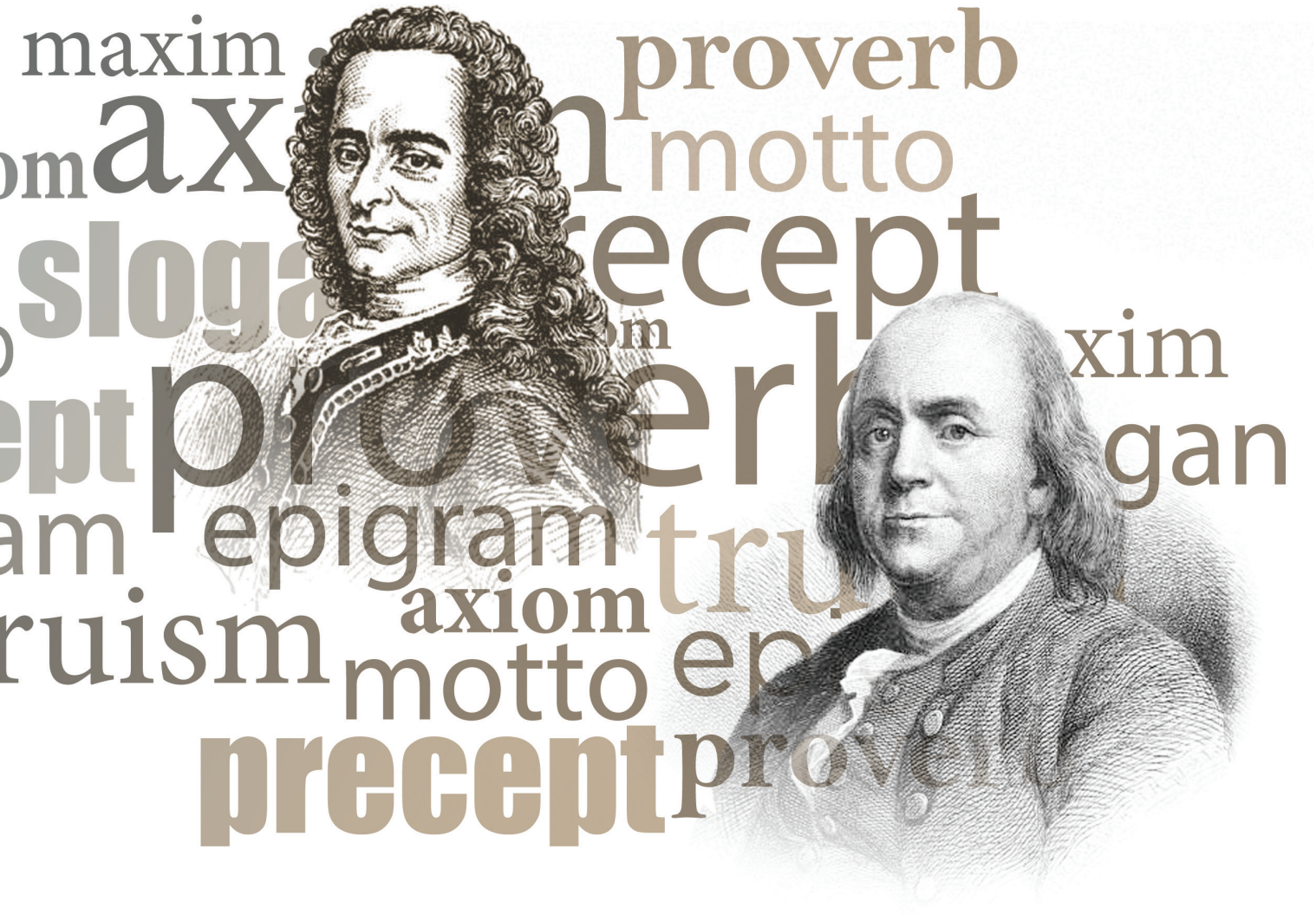
Apt Slogans for Acquisition in Austere Times

Roy L. Wood, Ph.D.

Oft-quoted slogans can sometimes capture nuggets of wisdom that actually are helpful in informing our decisions in extraordinary times like these. Some slogans serve as heuristics and some to describe behaviors—good and bad. Most are comfortingly familiar.

Some slogans emerge when times are tough and we face difficult choices. Here are a few familiar ones that may prove helpful as we move forward into a much more austere defense budget environment.

Wood *is the dean of the Defense Systems Management College at the Defense Acquisition University and also teaches for the University of Phoenix, School of Advanced Studies. He is a retired naval officer and acquisition professional.*



"Better is the Enemy of Good Enough"

Creating Affordable Requirements

Numbers matter, and quantity has a quality all its own. If we build equipment that is too expensive and too precious to risk sending it into combat, hasn't the adversary already won a victory? This isn't to say we should not strive to build very good equipment that will protect our warfighters and take the fight to the enemy, but do we really need exquisite systems that force us to limit quantities we can afford to buy? The Navy, for instance, has extraordinarily capable aircraft carriers, destroyers, and submarines. Yet, for two decades each Chief of Naval Operations has complained that we need more ships than we have been able to afford to produce. This is a vicious cycle. The high design and development costs for state-of-the-art weapons systems spread over a few production units drives those per-unit costs to unaffordable levels. Dragging out those few production units over a long period to preserve the shrinking industrial capability to produce them drives costs up even further. Higher costs are pushed to the "out-years" along with production schedules exacerbating this unaffordability cycle.

All-out mobilization-style production clearly is not possible (or desirable), but isn't a more balanced capability strategy called for now? Building a few highly capable weapons systems alongside a greater number of good-enough systems will help balance the overall portfolio cost and keep the industrial capability warm. For instance, let's build a robust air-independent propulsion (AIP) conventional submarine alongside a Virginia-class nuclear follow-on. Existing AIP boats (all foreign designs, unfortunately) are capable and less expensive than nuclear submarines, run with a smaller crew, and can perform many of the missions very well. Building these ships would help maintain industry's submarine design talent, provide shipbuilders a more robust and predictable workload, and be good training platforms from which to select nuclear crews. And we could buy them in greater

quantities. AIP submarines would be good enough for many missions.

Similarly, a few years into the Iraq war, a National Guard aviator friend was assigned to counter-Improvised Explosive Devices (IEDs) missions, flying slow ahead of convoys and using his Mark-1 eyeball to look for disturbed earth or other tell-tale signs of IEDs. He was performing this mission in a high-performance F-16! This sort of scouting mission would clearly be better suited to a Piper Cub than a current generation jet aircraft. Where were the good-enough aircraft?

Finally, not to leave out any Service, one may provocatively ask whether commercial Toyota 4x4s could not be used instead of much more expensive Humvees or Mine Resistant Ambush Protected (MRAP) vehicles for a variety of transport and scouting missions in low-threat areas. This ubiquitous commercial truck seems to be the vehicle of choice for insurgents in all sorts of terrain and even in combat environments. Buying a dozen or more of these good-enough commercial vehicles for the price of an MRAP might just be a smart investment for use in many low-intensity environments.

"Time is Money"

Managing Cost and Schedule

In acquisition, time and money are inextricably entwined. Most major studies, like those of the Packard Commission and the Defense Acquisition Performance Assessment (DAPA) called for shorter procurement cycles as a way to save money. Longer programs simply cost more, for a variety of reasons.

Obviously, there is a relationship between the complexity of a program and the time it takes to design, develop, and produce the system. Complexity drives cost up. Longer programs with large budgets also present enticing targets of opportunity for comptrollers looking for ready cash to fix more immediate problems, resulting in budget churn, the need for replanning, and unproductive—but costly—activity. Further, longer programs—some decades long—are subject to well-meaning but expensive changes in requirements as new technologies become available or threats change.

Finally, and more subtly, when government and industry embark on a program, they assemble skilled teams to do the work. These teams largely stay in place through good times and delays. If a program is delayed, or stretched out to accommodate budget perturbations (a common acquisition tactic), the program team's labor costs continue to accrue. This "marching army" effect drives up costs regardless of their productivity. Shorter programs are better, because time is money.

"There is no Substitute for Experience"

Creating a Capable Workforce

In the mid-1990s, after the Cold War ended, the Department of Defense took a "peace dividend" and budgets shrank. In an effort to streamline acquisition, many of the processes and experienced people in the government "bureaucracy" were laid aside in favor of letting the defense industry assume many previously governmental responsibilities. This, it was hoped, would leverage industry's profit motive and get the government out of the way of progress, reducing acquisition costs.

It didn't work. Indeed, the ill effects of the strategy still haunt the department's acquisition efforts. The previous symbiotic relationship between capable government program managers, engineers, and contracting officers and their counterparts in industry evaporated. Industry was left to its own devices, and many of the more experienced government professionals retired or left government service. In the last 10 years, the failure of the previous strategy has become clear, but without an experienced workforce, more and more statute, policy, and oversight have been imposed in vain hope of regaining control. Predictably, process is a poor substitute for experience and oversight cannot replace solid government program leadership.

The failure of the previous strategy has become clear, but without an experienced workforce, more and more statute, policy, and oversight have been imposed in vain hope of regaining control.

Recently, the department has attempted to rebuild the acquisition workforce, but this is a long and difficult process that will take years, perhaps decades (perhaps never in the current budget environment). In the meantime, interns and new hires are forced to assume much more responsibility than they are ready for. Their supervisors, brought up in the era of hands-off government, are largely ill prepared to provide the mentoring and leadership the new workers need.

As government reassumes its responsibility in acquisition, a continued long-term focus is needed on recruitment and retention, robust training, and proactive professional development and mentoring to broaden and deepen the experience of high-potential emerging leaders. This will be challenging as we approach yet another defense drawdown, but is necessary for our future success. Moving forward, we also need to shift our focus back to product and away from complex processes, and lighten the oversight burden that has not provided value in improving acquisition outcomes. These are hefty and counter-cultural ideas, but there is no substitute for experience in regrowing a capable workforce.

"Doing More with Less"

Thriving in Spite of Shrinking Budgets

The cyclical nature of the defense budget is about to experience another downturn. Already, talk has started of "hollow forces" and a return to post-Vietnam troubles. Leaders encourage doing more with less, and throughout the department there is an almost manic search for efficiencies. These efforts are necessary, but not sufficient. As noted earlier, we need to pay close attention to requirements—buying good-enough, rather than exquisite, systems. We need to pay attention to program timelines—shorter is better, because time really is money. We need to continue to invest in professionalizing and rebuilding a capable government acquisition workforce.

Finally, we need to appreciate the opportunity that a budget drawdown brings. Shrinking budgets mean that brute-force, throw-money-at-the-problem, approaches won't be possible. We need to be innovative, and look for elegant, simple, and affordable alternatives to provide needed (as opposed to wanted) capabilities for our warfighters. We need to understand that "doing more with less" will produce only marginal results, and that we need to focus on doing better with less. This may mean building larger quantities of good-enough systems to keep our warfighters equipped and industrial base warm. It may mean providing simpler systems like Piper Cubs and Toyota pickups to do the utility jobs and building fewer units of the more capable stuff for the real fight. It may mean producing modest capabilities as quickly as possible, rather than waiting decades for exquisite capabilities. Shrinking budgets will mean doing things smarter with a workforce that recognizes and appreciates this approach and is itself sufficiently capable and experienced to make it happen. Doing better with less can actually mean doing more with less.

Let's shake off the doldrums and get started. Here's one more slogan:

"If not now, when? If not us, who?" &

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DAU Alumni Association

JOIN THE SUCCESS NETWORK

The DAU Alumni Association opens the door to a worldwide network of Defense Acquisition University graduates, faculty, staff members, and defense industry representatives—all ready to share their expertise with you and benefit from yours.

Be part of a two-way exchange of information with other acquisition professionals.

- Stay connected to DAU and link to other professional organizations.
- Keep up to date on evolving defense acquisition policies and developments through DAUAA newsletters and symposium papers.
- Attend the DAUAA Annual Acquisition Community Conference/ Symposium and earn Continuous Learning Points (CLPs) toward DoD continuing education requirements.

Membership is open to all DAU graduates, faculty, staff, and defense industry members. It's easy to join, right from the DAUAA Web site at *www.dauaa.org*.

For more information, call **703-960-6802** or **800-755-8805**, or e-mail *dauaa2(at)aol.com*.

DAU Wins Prism Award for Coaching Excellence

From the International Coach Federation

On June 6, 2013, the International Coach Federation (Metro D.C. Chartered Chapter) presented the highly respected ICF Prism Award to the Defense Acquisition University (DAU) for its executive coaching program. The award, a crystal prism, was accepted at a ceremony at George Mason University by DAU officials responsible for leadership of DAU's program and the training of DAU coaches. The presentation was made during the 10th annual International Coach Federation Metro D.C. Chapter Capital Coaches Conference.

The Prism Award recognizes a private or public sector organization that has leveraged the power of coaching to enhance the performance and results of its clients during the prior year. DAU's coaching clients are key leaders, military and civilian, in the Defense Acquisition Workforce. DAU competed with numerous public and private internal coaching programs to be selected as the top coaching organization in the D.C. Metro area—the largest ICF chapter in the United States. Selection was based on a review of nomination packages and interviews by a "jury" of professional coaches, including previous Prism Award winners.

Discussing the selection of DAU, an ICF "jurist" commented that DAU has an exceptional strategy to align organizational results and leader and workforce development, an effective approach to assess coaching results and return on investment, and a comprehensive and innovative program to train its coaches. Other assessed strengths are DAU's emphasis on coaching leaders in transition to positions of significantly increased responsibility and continuously expanding the coaching body of knowledge and practice.

As a regional Prism Award winner, DAU will compete for the ICF Global Prism Award later this year.

Accepting the award were Dr. Alphronzo Moseley, Ms. Lois Harper (Two of 40 DAU Coaches), Richard Hansen (Director, DAU Executive Coaching), David Fitch (Director, AT&L Leadership Learning Center of Excellence).
DAU staff photo by Erica Kobren.

Realizing Your Extraordinary Future Through Executive Coaching

Lois M. Harper

By definition, the future can be a rather abstract term. While viewed as an indefinite time after the present, its arrival is inevitable. In fact, acquisition leaders in the Department of Defense (DoD) know firsthand how much their success depends on the future and plan ahead, accordingly. However, do they really think far enough forward and can they imagine thinking beyond their own possibilities? In the face of what seem to be overwhelming constraints, it is very easy to default to short-term thinking when "the predictable" includes reductions in funding, technology obstacles, and changes in user requirements.

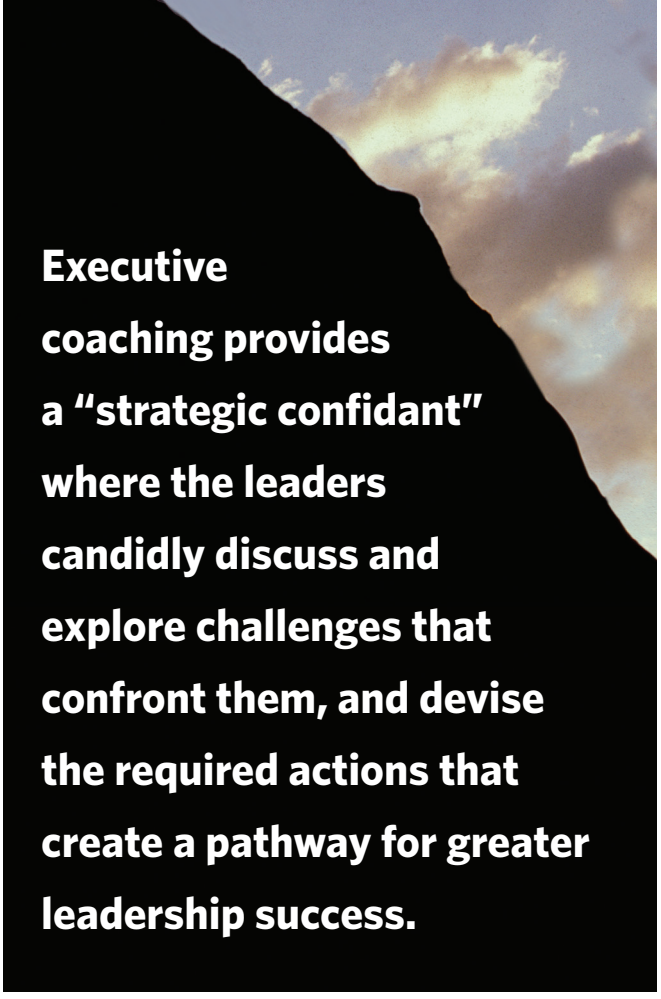
To help extend DoD's acquisition leader's thinking well beyond next week's incoming dilemma, the Defense Acquisition University (DAU) invested in two coaching initiatives designed to move performance beyond the predictable—executive coaching and leader as coach. Through its powerful questioning methodology, coaching artfully guides leaders on a journey of self-discovery, centered on a model that breaks thinking barriers and can lead to an extraordinary future. Both coaching initiatives have proven to be effective ways in achieving promising results while developing strong leadership attributes in the recipients.

Executive coaching, the first initiative, allows senior-level acquisition professionals in key leadership positions to enlist a DAU executive coach for 9 to 12 months. Since 2009, DAU has been actively working one-on-one with these high

Harper *is the director, Major Defense Acquisition Program Engagement, and Executive Coaching Champion at Defense Acquisition University, West Region, and has more than 20 years of acquisition experience.*

performers to help them realize an extraordinary future for themselves and the organizations they lead. Executive coaching provides a "strategic confidant" where the leaders candidly discuss and explore challenges that confront them, and devise the required actions that create a pathway for greater leadership success. The candidates primarily are program managers (PMs), program directors, and program executive officers (PEOs) at the GS-15/O-6 and higher level.

The second initiative enables mid-level supervisors and team leaders to obtain additional skills for their leadership toolbox through ACQ 453, a customized classroom course centered on "Leader as Coach." ACQ 453 focuses on shifting supervisor and team lead thinking, behaviors, skills and strategies. The leaders learn the virtues of encouraging and rewarding self-discovery and accountability. The course uses many of the same principles and behaviors of executive coaching. It serves as a catalyst that creates energy within the individual to innovate and grow professionally—lighting a fire within individuals instead of lighting a fire under them. Class participants learn coaching skills by developing their own extraordinary future and practicing coaching skills on each other. Unlike the one-on-one relationship seen in executive coaching, ACQ 453 participants look for opportunities to "wear the coaching hat" in their various roles as director, mentor, teacher, and counselor. Participants are encouraged to challenge their bosses by saying to them, "Don't give me the answer; ask me a question."



Extraordinary futures can take on various forms. To some acquisition professionals, it means turning a historically "red" or "yellow" program rating to "green." To others, it translates into developing and implementing more efficient business practices, such as those recently reinforced in the Under Secretary for Defense of Acquisition, Technology and Logistics' Better Buying Power (BBP) initiatives. It could also be a pivotal leadership action that finally unifies an organization's internal and external stakeholders where previous attempts failed. In all cases, the extraordinary future is in both the eyes and hands of the beholder.

So, what evidence confirms that coaching is effective, in particular executive coaching? I invited Air Force Col. Clarence Johnson, and Navy CAPT Joe Beel, two previous coaching clients, to join me in a virtual roundtable dialogue about their coaching experiences. I was curious to learn their initial perception of coaching, their opinion on the coaching model, what coaching did for them and their organization, and if they would recommend coaching as an effective tool for others.

During his coaching engagement, Johnson led the Nuclear Capabilities Directorate, charged with providing nuclear deterrence enabling and warfighting capabilities to Force Providers and Combatant Commanders. The Directorate was responsible for an exceptionally diverse mission including education, surety, sustainment, and life extension of the Air Force custody nuclear weapons, weapon systems and support equipment. Within weeks of becoming the director, he said he "experienced a stroke of good fortune." His Commander and PEO for Strategic Systems co-sponsored a DAU leadership event that brought him into contact with members of the DAU executive coaching program. His PEO encouraged him to connect with DAU and seek out a coach. Johnson said, "I must admit, when I first received this encouragement, I was a bit taken aback. Never before in my previous command postings had I been encouraged to seek out leadership partnering or coaching. So, as you might imagine, I went into this less than enthusiastically." He also questioned whether it was wise for him to volunteer for the opportunity since it might infer a lack of confidence in his own leadership abilities. Johnson recalled his first conversation with me. "You talked me through what coaching was, but more importantly, what it wasn't. You also anticipated my apprehension and moved quickly to give me a sense for the caliber of military leaders that have participated in the program. What stood out during our conversation was the fact coaching isn't designed to fix leaders that are broken, but rather take successful leaders and teams to the next level. Boy, was I relieved. I could see then that my PEO's encouragement was not a sign of his lack of confidence in our leadership team, but rather an endorsement of our potential, and a desire to see us achieve even more than we thought was possible."

Today, we have potential coaching clients coming to us and asking to be coached. At the beginning of the program, there

DAU's Lois Harper in coaching mode with Navy CAPT Joe Beel. Commanding Officer, Space and Naval Warfare Systems Center, Pacific.

was a great uneasiness whenever people were asked if they want to be coached. I queried Beel and discovered he felt the same way. As one of DAU's first coaching clients, Beel was the Deputy Program Manager at the time for the Tactical Networks Program Office, PEO Command, Control, Communications, Computers and Intelligence (C4I). His responsibilities centered on an innovative approach to providing the Navy with breakthrough tactical network capabilities for the future. According to Beel, "I didn't really know what to expect when I signed on for coaching. I had recently completed PMT 401 and was asked about being part of the DAU pilot for executive coaching. My initial thought was that coaching would focus primarily on individual development, but I kept an open mind. I soon learned that coaching really focused on an extraordinary future that involved the individual, their team and extraordinary results in a major business focus area."

Over the past 4 years, DAU has applied various coaching models for both executive coaching and Leader as Coach. Each model is centered on developing and achieving an extraordinary future—starting with this declaration and working backward to develop a strong foundation to carry the load. An extraordinary future "blueprint" serves as an effective tool for documenting the plan's breakthroughs, strategies, and catalytic actions. The coach and client also work through a process of relationship building, stakeholder evaluation, and assessing who the leader currently is and needs to be. Questioning techniques ensure the clients take time to reflect and develop their own solutions. The coach functions as a thinking partner as opposed to the expert/consultant. All this is done in the context of driving toward an extraordinary future.

Although we used two different coaching models for Johnson and Beel, I asked if they found these models to be beneficial. Beel said he found the structure to be well defined yet flexible. "Without a defined process, it would be easy to bog down and not accomplish what is needed. The regular meetings also force you to focus thought on your extraordinary future and avoid focusing on the here and now. Regular meetings with my coach also offered a time to question routine and verbalize alternatives. The ability to brainstorm and verbalize potential actions and futures was very important." Johnson added, "The model was fairly sound and consistent with other leadership models I encountered. In my case, what made the model effective was timing of the engagement and the chemistry between me and my coach. We seemed to fall right in together and never looked back. While my coach didn't tell me what I should or shouldn't do, he did help me to assess the effectiveness of my actions. More importantly, he would ask me to explain how my planned actions helped me achieve the unit's strategy mapping goals and objectives, and ultimately, our extraordinary future."

Since the purpose of coaching Defense Acquisition Workforce members is to enable improved acquisition outcomes

by leveraging the individuals' skills and energy while developing their capability, I wanted to know how coaching made a difference to the clients' organizations and to them as leaders. What was the bottom-line result?

"Executive coaching was a tremendous aid to implementing my leadership strategy and to the establishment of a higher level of performance for our organization," stated Johnson. "What was missing from our strategy was a coalescing impetus that would supercharge our people and appeal to their superior skills, drive and determination. We needed a vision that would truly rally our organization and place us on a much higher performance curve than what we would have otherwise envisioned. The notion of an extraordinary future and how it differed from a predictable future was exactly what we needed. We started to challenge expectations of ourselves even more, and not just in our core mission areas, but in every aspect of our portfolio. For example, we weren't just content with implementing BBP initiatives. We required every single subordinate unit to identify BBP candidate initiatives and deliver on their targets."

Beel offered a similar perspective. "Executive coaching enabled my team and me to identify an overarching, unifying objective that defined a future which allowed us to drive alignment and purpose. As I went through development of our communications plan, a small group of key leaders were involved in carefully analyzing every single word and ensuring that it would carry the right meaning to stakeholders and our team. This effort ensured their buy-in and ownership of the extraordinary future and the breakthroughs and actions necessary to achieve it. This allowed me to get them to 'own it, love it, live it.' The extraordinary future has endured as the major focus for the program office, and they are on the door step of delivering that future which will greatly enhance warfighting effectiveness."

At the end of the formal coaching engagement, DAU challenges these leaders to coach others, much like we train in ACQ 453. When I asked Beel about his continuing role as leader as coach, he said: "I ask better questions to key individuals to help identify actions necessary for their development. In one particular case, I asked an employee who was not a great fit for his current role what he thought he would be best at and would like to do. He offered up an alternative that I had not considered, and he was, in fact, superb in this new role."

Johnson recently sat in his office writing his Directorate's first-ever annual report to stakeholders. In the accomplishments section, he wrote:

> "Six of six successful Air Launched Cruise Missile (ALCM) Flight Tests with service life extended weapons;" "exceeded our 8 percent Better Buying Power (BBP) and Efficiencies savings target by 4 percent;" "awarded Secure Transportable Maintenance System contract ahead of schedule and dispatched with a bid protest in record time;" "eclipsed our 8 percent energy conservation target by nearly 2 percent and 2 months ahead of schedule, achieved first-ever zero deficiency "Outstanding" rating during a Higher Headquarters Compliance Inspection … ."

When I asked what this meant to him, he said: "As I continued to add more and more accomplishments to the document, I couldn't help but feel great pride in my people and what we accomplished together for our customers in under a year. I am absolutely pleased with my decision to pursue coaching and would recommend it to others. Not only would I recommend it, I have done so, and often. A few months ago, I was at a Team Kirtland Air Force Base breakfast with the other wing commanders and equivalent directors. We gather monthly to discuss challenges and opportunities and to share lessons learned with each other. At our last session, I described to my colleagues my experience with executive coaching and encouraged them to consider it, especially as they were working to set their strategic visions for their organizations. As I see it, it's not about more effectively managing acquisition programs; it's about being a more effective, disciplined, and visionary leader for our organizations. It is our responsibility. … I would go as far as saying our people are depending upon us to have a vision, to be able to articulate it, and to work with them to implement it. Coaching made all of the difference in the world as I worked with my leaders to take us to another level in performance."

Beel echoed Johnson's sentiment and added, "I would recommend coaching to anyone who has a pressing and challenging business objective that is not a matter of routine or a foregone conclusion." In fact, Beel and I did not conclude our coaching relationship at the end of the formal engagement. As the current Commanding Officer of Space and Naval Warfare Systems Center Pacific, another opportunity to develop and execute an extraordinary future emerged. Beel has continued to push our current coaching program to new heights by asking DAU to coach both him and several Senior Executives as a team with an engagement scheduled to complete by the end of Fiscal Year 2013.

Conclusion

As of the end of calendar year 2012, DAU had coached 120 acquisition leaders and conducted 22 ACQ-453 classes. Between the very favorable feedback from both initiatives, DAU seems to be right on track with these two initiatives. For the executive coaching recipients, it is safe to say that their next week's dilemma no longer is problematic. They stretched their mental models, reshaped their thinking, and resolved some of the more formidable personnel or processes obstacles that if left alone would have become next week's dilemma. By embracing the art of the possible and suspending some of their own natural instincts, DAU's clients were able to think differently about their impending future and realize extraordinary results for themselves and the organizations they led.

The author would like to thank CAPT Joseph Beel, Col. Clarence Johnson, Rob Tremaine, and Don Goddard for their contributions to this article.
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DAU Consulting Might Be the Right Enabler

To Improve Your Acquisition Outcomes

Karon Curry ■ Rob Tremaine
Tom VandenBerg ■ Duane Mallicoat

What is DAU Consulting? Consulting comes in hundreds of forms and there are just as many insightful books on the subject, but consulting has one common purpose: to help organizations achieve their intended objectives by identifying any barriers that could be creating any interference. Understanding the Defense Acquisition University's consulting process requires a basic understanding of DAU's consulting origins, which started more than 20 years ago. It took root during DAU's major transformation with the creation of the Performance Learning Model (PLM).

After benchmarking other corporate universities that offered a wide variety of learning options for its practitioner workforce, DAU explored similar learning opportunities for its workforce as well. DAU already had the expertise and capacity to offer specialized support to the Defense Acquisition Workforce (DAW) outside the classroom where its faculty and staff had primarily dwelt, and the PLM was born. With the advent of the PLM, training was still a central imperative, but additional learning methods such as Knowledge Sharing, Continuous Learning, and Performance Support were added to the core model. These additional learning methods were intended to address other vital learning needs across the DAW, and further strengthen acquisition knowledge and abilities in the workplace.

Mission Assistance (MA), previously called Performance Support, addressed more narrowly focused workplace specific needs. DAU found that many Department of Defense (DoD) customer teams were looking for customized training solutions for cohort groups. For example, they were about to embark on a source selection, or were facing several foreboding programmatic risks, or were challenged by recent

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MA

latest policy changes affecting their day-to-day actions. These "Content Consulting" needs could be met through targeted training, tailored training or rapid deployment training (Figure 1) to satisfy time-urgent "know-how's" and "how to's" right away.

In other cases, workforce teams needed:

- A deeper understanding of the obstacles inhibiting their progress or even their success.
- Help evaluating their readiness before their Major Defense Acquisition Program headed into a Milestone Decision Review.
- Facilitation from an organization steeped in strategic planning as they started to craft a strategic plan with specific goals.
- A team of experts to critique their acquisition roadmap and assess the associated documentation as they developed their acquisition strategy.

In all these cases, this form of assistance took the form of "Process Consulting," and anchored the right side of the MA continuum.

Over the last decade, the DAU enterprise has produced numerous other learning products that span the MA continuum, and trained its faculty and staff with the companion competencies to serve a wide range of customer needs. Each of the DAU business units has also produced several unique products and services to satisfy regional customers' requests. In all cases, DAU has relied on its faculty's and staff's functional pedigrees and experiences as it added new product lines to its MA arsenal.

Does DAU follow any definitive "process consulting" model? Yes, it does. When DAU formulated its consulting program, it first looked outside the marketplace environment and eventually developed a hybrid process consulting model after reviewing existing models such as Peter Block's five-phase, Judith Hale's seven-phase, and Carnegie Mellon's six-phase models (Figure 2).

Today, DAU's model looks more like Carnegie Mellon's six phases, but with a few minor tweaks. To make sure its enterprise-wide faculty was prepared for a wide variety of consulting engagements, DAU instituted a training Faculty Performance Development program for its future consultants that leveraged the virtues of all three models. Each model offered a more detailed view of consulting as well as a thorough discussion on key consulting behaviors and intervention strategies.

Figure 1. Mission Assistance

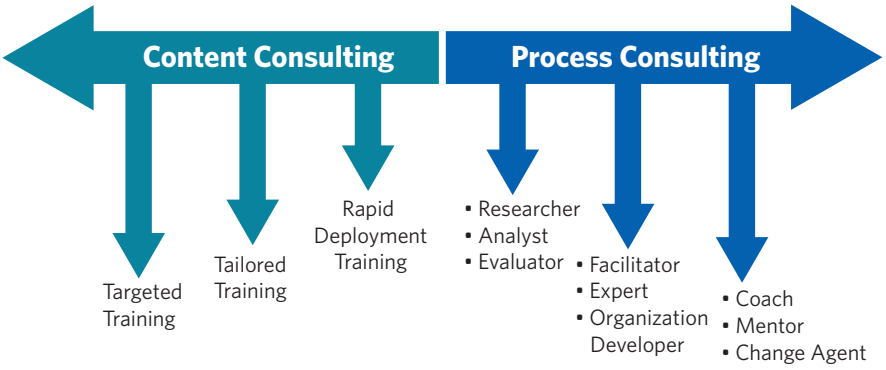

Figure 2. Process Consulting Models

Peter Block, "Flawless Consulting"	Judith Hale, "The Performance Consultant's Field Book"	Carnegie Mellon SEI Training	DAU Consulting
Phase 1: Entry and Contracting	**Phase 1:** Defining the Request	**Phase 1:** Entry, Sensing, and Relationship Building	**Phase 1:** Entry, Sensing, and Relationship Building
Phase 2: Discovery and Dialogue	**Phase 2:** Fact Finding	**Phase 2:** Contracting	**Phase 2:** Defining Opportunity/Contracting
Phase 3: Analysis and the Decision to Act	**Phase 3:** Analyzing the Findings	**Phase 3:** Data Gathering, Diagnosis, and Feedback	**Phase 3:** Data Gathering, Diagnosis, and Feedback
Phase 4: Engagement and Implementation	**Phase 4:** Designing the Solution	**Phase 4:** Planning, Execution, and Monitoring	**Phase 4:** Planning, Implementation, and Monitoring
Phase 5: Extension, Recycle, or Termination	**Phase 5:** Developing the Solution	**Phase 5:** Evaluation and Consultant Feedback	**Phase 5:** Evaluation and Consultant Feedback
	Phase 6: Implementing the Solution	**Phase 6:** Termination	**Phase 6:** Closure and Follow-up
	Phase 7: Measuring the Results		

Throughout the DAU consulting process, a consultant wears many hats and should always be on the look-out for discoveries. As an Objective Observer, a consultant should raise questions for reflection, keep an open mind and understand the customer's problem-solving process. As a Fact Finder, a consultant should gather enough data to stimulate customers' deeper thinking, especially since they may not be fully cognizant of the warning signs that could be impeding organizational performance. As an Identifier of Alternatives/Linker of Resources, a consultant should identify alternatives and resources for customers to classify consequences. As a Joint Problem Solver a consultant should offer alternatives and participate in the overall assessment and decision equation.

DAU's consulting process, using its faculty and staff in the aforementioned roles, has served DAU consultants and its customers well. Understanding a customer's needs and leveraging experience in the consulting process have proved pivotal in achieving any successful outcome.

From Where Does the Demand Emanate?

Requests for MA come into DAU through many different sources. Often, organizations will call or e-mail the Associate Dean, Outreach and Mission Assistance (ADOMA) of their respective regions to see if support is available. Support requests also come from senior Office of the Secretary of Defense (OSD)/DoD leadership to the Executive Director, DAU Mission Assistance. Students may call former professors for help. In other cases, organizations may have been encouraged by OSD or their higher headquarters (e.g. Services Acquisition Workshops/Program Transition Workshops) to seek DAU assistance.

Until recently, many requests DAU received from program offices were reactive in nature (solving real-time problems). However, recent trends indicate a noticeable change. Lately, organizations are becoming more proactive and seeking assistance to solve acquisition workplace challenges before they become problems. Reasons for this shift may include:

- Turnover within the workforce, leaving the DAW with less experienced personnel who might be more willing to seek assistance.
- DAU conducting more effective MA outreach.
- OSD/higher headquarters directing and/or encouraging DAU support.
- Increased customer confidence in DAU resulting in repeat requests.
- Word-of-mouth referrals are strengthening DAU's reputation.

DAU is seeing more requests for mission assistance and more opportunities to participate in workplace learning. Mission assistance has been shown to be mutually beneficial to both parties. It not only provides crucial support for the requesting organization but also helps keep the faculty current on products, services, and best practices for use in future consulting efforts as well as throughout the other DAU mission areas.

As an Objective Observer, a consultant should raise questions for reflection, keep an open mind and understand the customer's problem-solving process.

DAU's statutory mission is to provide training in acquisition policy (regulatory and statutory) to the members of the DAW. To that end, DAU faculty and staff alike pride themselves in their ability to keep the DAW current in policy and best business practices. However, the wide array of programs found throughout the DoD has created the need for specialized assistance. Through MA, DAU can provide support that goes well beyond policy updates and best practices. Mission assistance helps customers overcome real challenges in real time and enables the DAU facilitators to experience the project management offices' challenges in working jointly toward better solutions.

Why is Consulting an Important Aspect of DAU's Mission?

Consulting is considered one of the most important DAU missions, strongly synergized with its traditional teaching mission. DAU faculty's scope and deep experience base provide tremendous opportunities for program office teams and acquisition executives to leverage. DAU has the ability to be the "outsider looking in"—the "honest broker"—without any inherent program bias. As a result, the DAU consultant can see programmatic issues as well as potential solutions from an independent standpoint. DAU's consulting capability can serve as a major enabler to help create "breakthroughs" for customers, by drawing on the DAU enterprise's diverse and extensive experience base, along with the ability to tap into OSD resources.

AH-1 Cobras at Forward Operating Base (FOB) Dwyer well protected by Aircraft Survivability Equipment, including Missile Warning Sensors and Countermeasure Dispensers visible here. *Naval Air Systems staff photo*

DAU also is involved with joint government and industry team consulting efforts, such as Program Transition Workshops. DAU provides the neutral environment that acquisition programs sometimes require to cultivate strong and enduring relationships throughout execution. This joint team consulting effort enables open communications and enables development of well-defined expectations and outcomes that result in smoother acquisition execution.

Where Does DAU Consulting Expect to Be in the Years Ahead?

In the face of an ever-changing acquisition environment, DAU's faculty are constantly looking for ways to improve and transform themselves to advance workplace learning. The DAU enterprise continually looks for ways to help the DAW do more with less in this environment (made even more challenging by the current austere budgets). Strengthening its processes through rigorous proficiency training and follow-up surveys that validate consulting effectiveness months after the consulting has ended will help DAU become even more efficient.

Aside from DAU's strategic goals, there are two other operating imperatives for the DAU consulting mission: (1) to stay engaged and make a difference for the DAW by providing effective and timely consulting support and (2) to know what it means to walk in the shoes of those we consult. These two "must do's" keep DAU consultants current, credible and reliable to meet its customer's challenges head on.

Senior leadership at DAU and OSD acquisition have recognized Mission Assistance's importance as well:

Dr. James McMichael, acting President, Defense Acquisition University: "Our mission at DAU is to develop qualified acquisition professionals who deliver and sustain effective and affordable warfighting capabilities. Our mission assistance efforts—providing on-the-job assistance to the Defense Acquisition Workforce—are a fundamental part of that mission. We've seen significant increases in mission assistance requested and provided over the last 4 years, and we pride ourselves on the fact that we consistently provide valued support to acquirers and their organization."

Katharina McFarland, Assistant Secretary of Defense for Acquisition: "I view Consulting and Mission Assistance as fundamental functions of the Defense Acquisition University. The seasoned experience and diversity of the DAU faculty provides a unique capability to leverage for our acquisition professionals and program office teams. Each event is a learning opportunity not only for the Defense Acquisition Workforce, but also, for the assisting DAU facilitators in maintaining currency and relevance. Program office teams that have used these services consistently consider these events as 'value added,' contributing to their ability to manage successful acquisition outcomes."

Summary

DAU consulting is a core element of DAU's PLM and provides the DAW with collaborative assistance in resolving problems and seizing opportunities. DAU uses a wide variety of tools to provide this assistance, ranging from personal coaching/mentoring to exclusive consulting for program office teams (in some cases including their industry counterparts). The depth of experience and broadly diverse backgrounds of DAU's faculty enable DAU to bring the right talent to bear on an acquisition organization's most difficult challenges, helping DAW members to deliver the desired warfighting capability within their allocated resources.

Can DAU consulting serve as a success enabler for your acquisition program office? Contact us to learn more about the possibilities.

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Defense AT&L

Writers' Guidelines in Brief

Purpose
Defense AT&L is a bimonthly magazine published by DAU Press, Defense Acquisition University, for senior military personnel, civilians, defense contractors, and defense industry professionals in program management and the acquisition, technology, and logistics workforce.

Submission Procedures
Submit articles by e-mail to datl@dau.mil. Submissions must include each author's name, mailing address, office phone number, e-mail address, and brief biographical statement. Each must also be accompanied by a copyright release.

Receipt of your submission will be acknowledged in 5 working days. You will be notified of our publication decision in 2 to 3 weeks. All decisions are final.

Deadlines
Note: If the magazine fills up before the author deadline, submissions are considered for the following issue.

Issue	Author Deadline
January–February	1 October
March–April	1 December
May–June	1 February
July–August	1 April
September–October	1 June
November–December	1 August

Audience
Defense AT&L readers are mainly acquisition professionals serving in career positions covered by the Defense Acquisition Workforce Improvement Act (DAWIA) or industry equivalent.

Style
Defense AT&L prints feature stories focusing on real people and events. The magazine seeks articles that reflect author experiences in and thoughts about acquisition rather than pages of researched information. Articles should discuss the individual's experience with problems and solutions in acquisition, contracting, logistics, or program management, or with emerging trends.

The magazine does not print academic papers; fact sheets; technical papers; white papers; or articles with footnotes, endnotes, or references. Manuscripts meeting any of those criteria are more suitable for DAU's journal, *Defense Acquisition Research Journal (ARJ)*.

Defense AT&L does not reprint from other publications. Please do not submit manuscripts that have appeared elsewhere. *Defense AT&L* does not publish endorsements of products for sale.

Length
Articles should be 1,500–2,500 words.

Format
Send submissions via e-mail as Microsoft Word attachments.

Graphics
Do not embed photographs or charts in the manuscript. Digital files of photos or graphics should be sent as e-mail attachments. **Each figure or chart must be saved as a separate file in the original software format in which it was created.**

TIF or JPEG files must have a resolution of 300 pixels per inch; enhanced resolutions are not acceptable; and images downloaded from the Web are not of adequate quality for reproduction. Detailed tables and charts are not accepted for publication because they will be illegible when reduced to fit at most one-third of a magazine page.

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