

Lead, Follow, or Get Out of the Way

The Marine Corps is way ahead in its goal to achieve financial improvement and compliance with the Chief Financial Officers Act.

Lieutenant Colonel John M. Chadwick

The Chief Financial Officers (CFO) Act, the President's Management Agenda, and recent authorization and appropriation acts all contain the same basic theme: Produce financial reports that are accurate, timely, and relevant to leadership and that will stand up to independent audit review. There is no easy fix to solving our financial recording and reporting problems. The Marine Corps has recognized this fact and is taking a multifaceted approach to comply with the CFO Act. Auditable financial statements should be nothing more than the by-product of sound processes and procedures at each segment of a financial event. The entire cycle of obtaining goods and services, from Private Jones's "needing stuff" to paying company XYZ for providing that "stuff," requires process review and improvement.

Determining the Problem

Within the Marine Corps, we started the financial improvement review by asking a very basic question: Is the accounting system the problem? The Marine Corps uses the Standard Accounting, Budgeting, and Reporting System (SABRS) to record all general fund appropriations. To answer

the question, the Marine Corps requested the Logistics Management Institute (LMI) to evaluate SABRS for compliance with standards established under the Joint Financial Management Improvement Program. The LMI completed this evaluation, and SABRS passed the certification process with a few required corrections that are in the process of being resolved. With assurance that SABRS meets the required standards, the improvement focus shifted to other stakeholders outside the financial community (for example, contracting, facilities, supply, and personnel). Our stakeholders also extend beyond the Marine Corps since numerous DoD-wide systems are integral to financial improvement.

The majority of business events having a financial impact occur outside our Marine Corps financial management community. Financial managers, for the most part, are not determining requirements, placing orders, receiving goods, etc. Those events happen through other communities such as manpower and logistics. Any sustainable improvements in financial management must include buy-in from them. There has to be a compelling WIIFM (What's in it for

me?) proposition to change from the status quo. Our fundamental WIIFM for other Marine Corps stakeholders was simple: We were losing financial opportunities to support our marines because of our current business practices.

Simply put, we are not getting the maximum bang for our limited bucks.

During peacetime, the typical Marine division's annual operating budget and exercise support is about \$20 million. With our current business practices, the Corps is wasting (via reverted balances of expired funds), more than this amount each year. Improvements by our stakeholders in their systems, policies, and procedures will help to identify these assets while they are still available for reuse and, thereby, enhance our primary goal of support to our marines and our warfighting missions.

With unity of effort achieved, our next step was to determine the criteria used for compliance and improvement reviews. Every business event has a cause and effect relationship. These relationships impact or are impacted by five key areas: Information Systems; Management Controls;

Policies and Procedures; Organization and Infrastructure; and People. The interaction among these five key strategic areas determines the accuracy and propriety of every business event. For us, each process review focuses on these five areas for compliance, improvement, and mitigation efforts. Figure 1 shows the actions to be taken in each process review.

At this point, we had buy-in from our stakeholders and a template for reviewing our processes for compliance and improvement. Then the really hard work began. Where do you start? What is broken? What should our priorities for improvement be to maximize the benefit to the Corps?

Determining Solutions

Our starting point was the Fiscal Year (FY) 2002 Performance and Accountability Report issued by the Department of Defense (DoD) Inspector General. This report identified 13 material weaknesses applicable to DoD financial statements. Our next step was to bring together subject matter experts from our field commands to discuss financial management problems and weak-

nesses. From these reviews and discussions, we determined the following areas most critical to Marine Corps financial improvement. These improvements are on track to be completed and implemented prior to the beginning of FY 2007:

- Standardize document processing
- Simplify and standardize fiscal codes
- Integrate all phases of the programming, budgeting, and execution cycle
- Create environmental liability policy and procedures
- Update policy and procedure manuals
- Standardize fund holder training
- Field compliance with process and procedure changes

Making It Work

To date, we have made significant progress on many of these issues. Policy and procedures were developed and implemented in conjunction with the Deputy Commandant for Installations and Logistics on environmental liabilities. With very few changes, the Office of the Secretary of Defense (OSD) used the Marine Corps product to create the standard policy for environmental liabilities reporting for use across the Department.

Closer to home, in our finance and accounting organization, we formed a working group with representatives from each major installation and command to review step by step how each type of source document is processed. Our review found that over 700 different practices were being used by commands to process source documents. These have been reduced to 57 standard processes that cover every source document or financial transaction condition encountered throughout the Marine Corps and will be implemented Corps-wide in FY 2006.

We found that the Marine Corps used over 3,000 detailed cost accounting codes to classify execution by purpose in the accounting system. How these codes were being used varied from command to command, resulting in execution information at the detail level being extremely inaccurate and of little value to program managers in meeting reporting requirements. We reduced the number of codes to 310 and provided detailed guidance on how and in what circumstances the codes would be used. In addition, we mapped these codes to specific budget line items to reduce significantly the

Five Key Strategic Areas					
Change Management	Information Systems	Management Controls	Policies & Procedures	Organization & Infrastructure	People
	<ul style="list-style-type: none"> • Identify financial management systems • Update information systems inventory • Leverage and integrate enterprise architecture • Document "To-Be" environment • Conduct systems compliance assessments • Conduct systems migration 	<ul style="list-style-type: none"> • Monitor guidance compliance • Identify assessable units • Document preventive and detective controls • Develop management control checklists • Conduct management control assessments 	<ul style="list-style-type: none"> • Document "As-Is" business processes • Collect, analyze, and review applicable process references • Perform "gap analysis" between the "As-Is" process flow and applicable references • Develop standard operating procedures (SOPs) 	<ul style="list-style-type: none"> • Identify key stakeholders and process owners • Document and assign roles and responsibilities • Identify training requirements • Develop training materials • Conduct training classes 	<ul style="list-style-type: none"> • Perform workforce analysis • Determine staffing requirements • Conduct competency assessments • Determine retention requirements • Implement change management procedures

Figure 1. Five Key Strategic Areas and Actions to Be Taken in Each Process Review

miscoding of cost account information. As a result, we've achieved simplicity and greater accuracy of data.

To assist in our ongoing Activity Based Costing (ABC) efforts, we reviewed the coding structures used by each command to identify internal organizations, that is, engineering support, supply, contracting, comptroller, etc. These codes have been standardized for all bases and have been associated with 37 standard business processes, which are the heart of our ABC efforts. This change has dramatically improved the verification and reliability of reported execution data.

We are currently pursuing approval through the Business Management Modernization Program process with OSD to invest funding in development of an authorization database that will seamlessly link the Program Budget Information System (a Department of the Navy system), SABRS, and the Marine Corps Programming and Budget Development Database. This new database will distribute funding during the fiscal year and will eliminate the current manual processes: spreadsheet maintenance, manual entries into the accounting system, and the manual creation of authorization messages and letters. This effort will close the loop on integration of programming, budget-

ing, authorization, and execution information while providing leadership with useful information upon which to base resource decisions.

We also have updated the Marine Corps Order (MCO 7540.2E) on resource evaluation and analysis, thereby providing more teeth to the requirement for reviewing and reporting compliance with established financial policy and procedures. A new unit, the Marine Corps Financial Evaluation and Assistance Team, was established and chartered to develop and provide standardized fund holder training. Further, once all training to units is completed, that team will be providing an outside evaluation or inspection of commands' financial management compliance.

Because of these and other efforts, OSD has selected the Marine Corps to be the test case for demonstrable financial improvement within the Department. We have been tasked to develop standalone financial statements for Marine Corps appropriations (as a subset of the Department of the Navy's single official audited financial statements) and to obtain an audit opinion using the current accounting system, SABRS. Our roadmap for meeting the improvement mandates has been codi-

fied in the Executive Report: Marine Corps Financial Improvement Plan and submitted to OSD. (See www.usmc.mil/p&r/ for more information.)

By our multifaceted approach of assessing the five strategic areas of business practices, engaging the stakeholders, and beginning at the source where financial transactions are generated, the Marine Corps has come a long way in a relatively short time toward improving our financial management capability. However, there is still quite a way to go before we accomplish the final goal of providing timely, accurate, useful, and auditable financial information to our leadership and external organizations. Until that goal is reached, the Marine Corps will continue its all-encompassing approach to strive for deeds, not just words, concerning financial improvement. 

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DFAS Begins Its Journey of Transformation Via BRAC

(From a DFAS Press Release)

In December 2005 site directors at Defense Finance and Accounting Service (DFAS) sites conducted briefings to update employees on the agency's approaching transformation, including DFAS implementation of the 2005 Base Realignment and Closure (BRAC) Commission's recommendations. DFAS's strategy is to use BRAC as a tool to facilitate its transformation, the most obvious feature of which is to reduce the number of operating sites from 30 to less than 10.

Said DFAS Director Zack Gaddy, "The DFAS mission to provide accounting and finance services for the military departments and Defense agencies will remain constant. And the change is in keeping with the DFAS vision: transforming today to be the trusted financial partner for tomorrow's warfighter. BRAC 2005 provides the opportunity to implement site consolidations, streamline DFAS operations, and support our goal to provide best value to the warfighter."

The transformation, which is underway, will implement changes to DFAS's organization structure, including rollout of High Performing Organization initiatives, establishing Centers of Excellence, and executing the National Security Personnel System (NSPS). NSPS will improve the way Department of Defense hires, assigns, compensates, and rewards its employees while preserving core merit principles, veterans preference, and important employee protections and benefits of the current system. The DFAS transformation will reengineer business processes and retool skill sets necessary to perform critical functions.

These changes will satisfy the objectives required to meet DFAS's strategic goals, including the implementation of best business practices to increase productivity and reduce costs and reshaping its workforce to meet mission needs.

Transformation of Analytical Tools:

Using Portfolio Analysis Techniques in Defense Applications



Captain John Field and Brian Flynn, PhD

Quantitative measures are under development to assess the Department of the Navy (DON) portfolio of system acquisitions in order to improve business practices through better analytical tools and models. As a result, attention shifts from analyzing individual acquisition programs (now studied exhaustively) to analyzing a portfolio of systems as a whole, which is similar to the methodology employed as a best practice in the private sector. This macro view will give DON senior leaders valuable metrics for measuring risks and uncertainties of costs, capabilities, and requirements. Armed with these metrics, senior leaders can make better choices, among a set of plausible portfolios, to satisfy the Navy's national security objectives.

Early phases of the initiative identified and evaluated existing models and industry practices. Next, a subset of the current DON portfolio was selected by financial management and acquisition staff with which to test a methodology of portfolio analysis: Mine Countermeasures, a diverse, representative system of programs. This pilot model is a multi-phase process that includes the following:

- Gathering life cycle cost data for the various systems that will be analyzed
- Establishing a scoring system using subject matter experts to determine how effectively current and future systems match capabilities to requirements
- Developing a means to display results by

which decision makers can examine risk-reward analysis and conduct trade-offs

The ultimate goal is to assess DON investments using portfolio analysis methodology.

Introduction

According to the Honorable Donald Rumsfeld, "What you measure, improves." In this regard, the Department of Defense (DoD) is quite adept at measuring the cost and the value of a specific program to fulfill a specified mission. Trade-offs are conducted and analyses of alternatives are studied. Sometimes, gap analyses are performed. But are such comparisons made program versus program? Are funding decisions

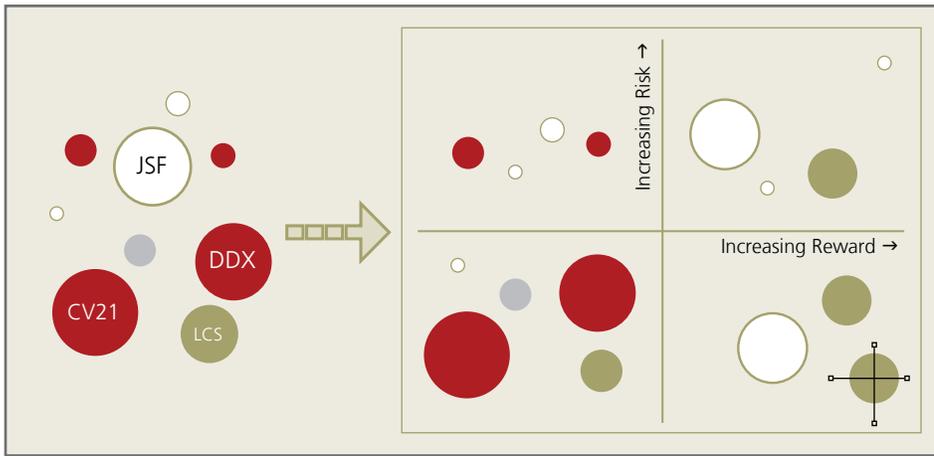


Figure 1. Transforming Program Analysis to Portfolio Analysis

made with an emphasis on leadership strategy and national objectives? Portfolio analysis is a promising method to improve DoD business practices by analyzing a portfolio of systems as a whole, rather than analyzing individual acquisition programs (Figure 1).

When the Honorable Richard Greco, Jr. Assistant Secretary of the Navy (Financial Management and Comptroller), entered his position in late 2004, he was asked by the Vice Chief of Naval Operations to consider devising methods that could be used to analyze programs and better inform resource decision making early in the Planning, Programming, Budgeting and Execution process. This request was the beginning of an effort to analyze common and best practices in government and in the private sector and then to use and augment those techniques in a DON construct. The Naval Cost Analysis Division, directed by Ms. Wendy Kunc, was given the job. "We were excited at the prospect of developing these new analysis tools and were challenged at the magnitude of this daunting task."

Methodology

Portfolio analysis is the art and science of allocating scarce resources to satisfy strategic objectives. In literature, this form of analysis is described as a dynamic decision process, a resource allocation process, or a manifestation of a business strategy. In government, as well as in the private sector, portfolio analysis helps senior management determine where and how to invest for the fu-

ture. In short, it is a technique to determine how to best spend limited dollars.

Portfolio management is characterized by the following:

- Uncertain and changing information
- Dynamic environment
- Multiple goals and strategic considerations
- Interdependence among projects
- Multiple decision makers and locations

As projects are analyzed, they usually are found to be in different stages of completion (for example, technology development, system development and demonstration, or production). While projects often are designed to fulfill multiple strategic goals and often are highly interdependent, they still compete against one another for scarce resources.

Both in government and in the private sector, portfolio analysis necessarily is prospective in nature, dealing with future events, opportunities, and costs. Information often is uncertain or, at worst, highly unreliable. The decision environment is also dynamic due to changing threats or requirements, as well as to changing status of projects. In addition, portfolios are constantly evolving as new information becomes available and as new projects are added or removed from the set.

Three basic goals of portfolio analysis are described in literature: value maximization, balance, and strategic direction.

For value maximization the focus is return

on investment (ROI) and the likelihood of success. For the private sector, ROI for an individual project might be expressed as net present value divided by investment dollars. For the military, the return may be a future stream of military capability divided by the investment.

In achieving a balance within a portfolio, a number of parameters often are considered:

- Short term versus long term
- High risk versus low risk versus sure bets
- Product categories versus technologies
- Development versus production versus basic research
- Production versus maintenance

Leaders of best-practicing organizations use these considerations to ensure that the projects are selected to meet long-term organizational goals, are tied directly to the organization's fundamental goals, and are "on strategy."

To maximize value, that value first must be measured, calculated, or deduced. It is instructive to examine one of the more highly regarded financial models in the private sector for estimating a project's value (Figure 2, page 30).

The Expected Commercial Value (ECV) is based on decision-tree analysis. In this model, ECV considers future streams of earnings, probabilities of technical and commercial success, and costs. The variables in the equation are stochastic, not necessarily random but highly uncertain, and some more so than others. Costs are fairly well understood, but earnings are much less so. In practice, subject matter experts determine a "best guess" at strategic importance, probability of technical success, and probability of commercial success by completing scorecards.

Applying this commercial construct to a national security setting presents several significant challenges. Instead of producing future streams of earnings, DoD produces flows of military capability. Figure 3 shows one method for modeling flows of military capability.

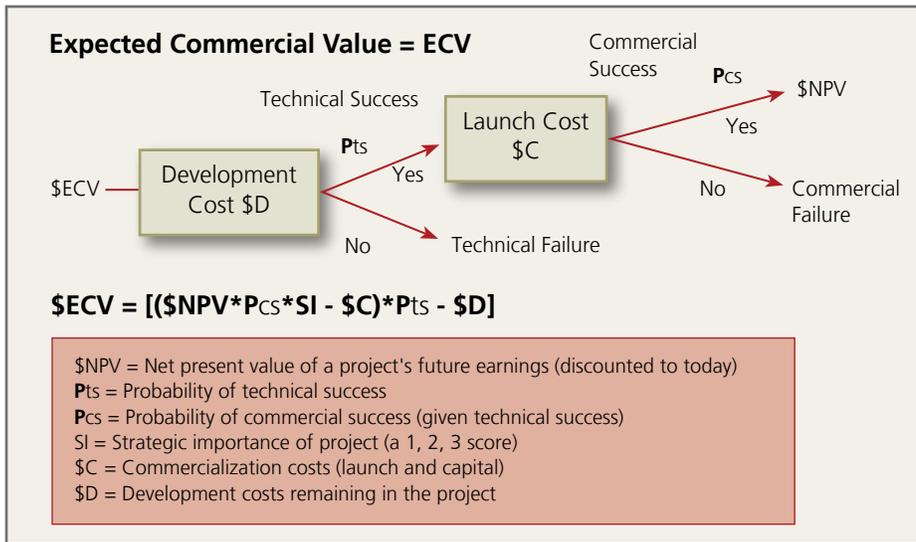


Figure 2. A Financial Model for Estimating a Project's Value

4 (page 31). The two axes are risk and reward that divide the chart into four quadrants. These quadrants, named in nautical terminology since the study was developed for the DON, represent the four categories in which each program is assessed: Watch Standing, Bravo Zulus, Oysters, and Bilge Water.

The Watch Standing category (lower-left quadrant) represents those programs with a high likelihood of success but with low or moderate reward. These projects are in abundance in any organization, and they usually contain many modifications, extensions, fixes and/or slightly different versions of the same endeavor.

Bravo Zulus are programs that are the potential stars, low risk and high reward. Most firms desire more of these projects. Oysters are the long-shot projects. There is a high expected value of the reward but with high risk. Usually they are programs that require some technical breakthrough in order to be successful, and many companies focus their attention on programs in this quadrant.

Lastly, every organization has at least one project of little value and high risk, those in the Bilge Water category. These usually have a strong advocate and are hard to kill. The size of each bubble is significant, representing resources. These resources could be an average annual cost or a total cost over some fixed amount of time, such as DoD's Future Years Defense Plan. In addition, some form of high-low-average measure may be represented to express cost uncertainty, as shown in the bubble in the lower right.

How are programs evaluated? The most common practice for evaluating value and risk is by using scorecards whereby a group of subject matter experts evaluate each program based upon common criteria, and the results are statistically analyzed. In the Mine Countermeasures (MCM) pilot, a scoring conference was held in December 2005 with 15 subject matter experts gathered to score 40 different systems and 6

The National Security Strategy of March 2005 identifies four strategic objectives and eight required operational capabilities of U.S. military forces. The expected military value, in one of many constructs, is a function of the strategic importance of a project, the degree to which the capability is desired, as well as probabilities of technical and operational success. It is important to note that the variable for Strategic Importance is influenced directly by strategic objectives; similarly, the degree of capability desired is influenced by key operational capabilities.

While the private sector uses a common metric (that is, dollars) to determine value, there is no commonly defined metric for value across DoD programs. As a result, military value is extremely difficult to determine and must be subjective. With any subjective measure, the impact of special interests must be minimized and the results displayed in a readable, easy-to-understand format.

A best-practice means to display results of portfolio analysis employs a risk-reward bubble diagram, as shown in Figure

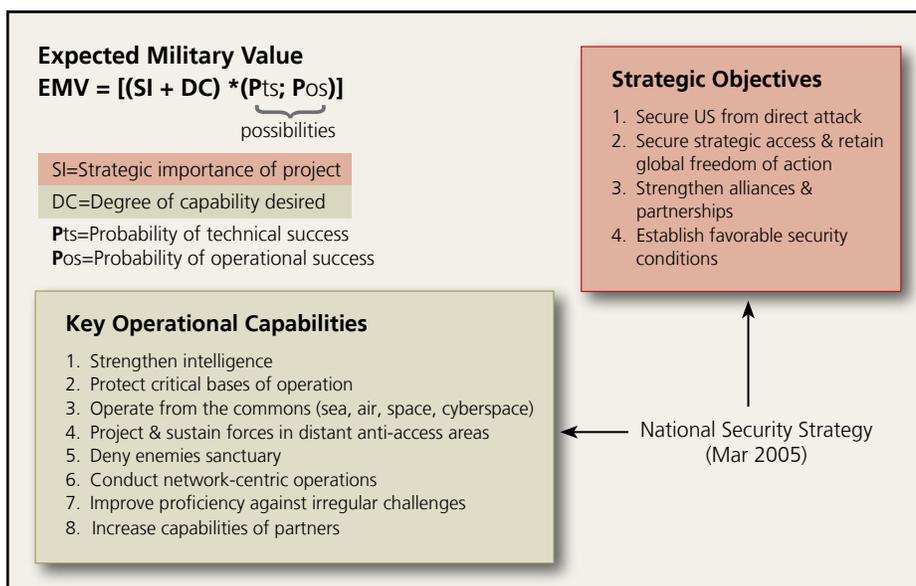


Figure 3. Sample Theoretical Construct of a National Security Project's Expected Military Value

platforms using a model similar to that used at U.S. Special Operations Command, the Strategy-to-Task Model.

Common criteria must be established, based on the strategic goals of the organization, and projects must fulfill one or more objectives. In scoring capabilities and risks of MCM systems, a logical, rigorous, strategy-to-tasks approach is used, designed to link individual assets such as ships, sonars, and influence-sweep sleds to broad-based, macro national security objectives. By employing this approach, current and proposed systems are evaluated in terms of their contribution to the goals and priorities set, not by sponsors in a particular warfighting community, but by the most senior leadership in the Office of the Secretary of Defense and the DON. This builds into the process a guarantee that those systems that score highest, ceteris paribus [all other factors being equal], will be those that respond best to changes in strategy and priorities as defined by the Secretary of Defense, the Joint Chiefs of Staff, and the Chief of Naval Operations. Figure 5 illustrates the architecture of this scoring system.

To employ this model, one first defines and weights a list of strategic tasks or requirements. In defining the strategic, macro-level tasks for Mine Warfare, we referenced two documents: National Security Strategy (May 2005) and a recent Presidential security directive on the maritime domain. Then we asked subject matter experts to agree upon five MCM strategic tasks:

- Protect Operating Forces Against the Threat of Sea Mines in the Littoral
- Defend U.S. Ports and Coastal Approaches Against Sea Mines
- Maintain Mobility of Operational Forces in the Presence of Sea Mines
- Collect, Analyze, and Share Intelligence Related to the Worldwide Threat of Sea Mines
- Preserve Freedom of the Seas for Commercial Navigation in the Presence of Sea Mines

A problem immediately surfaces when

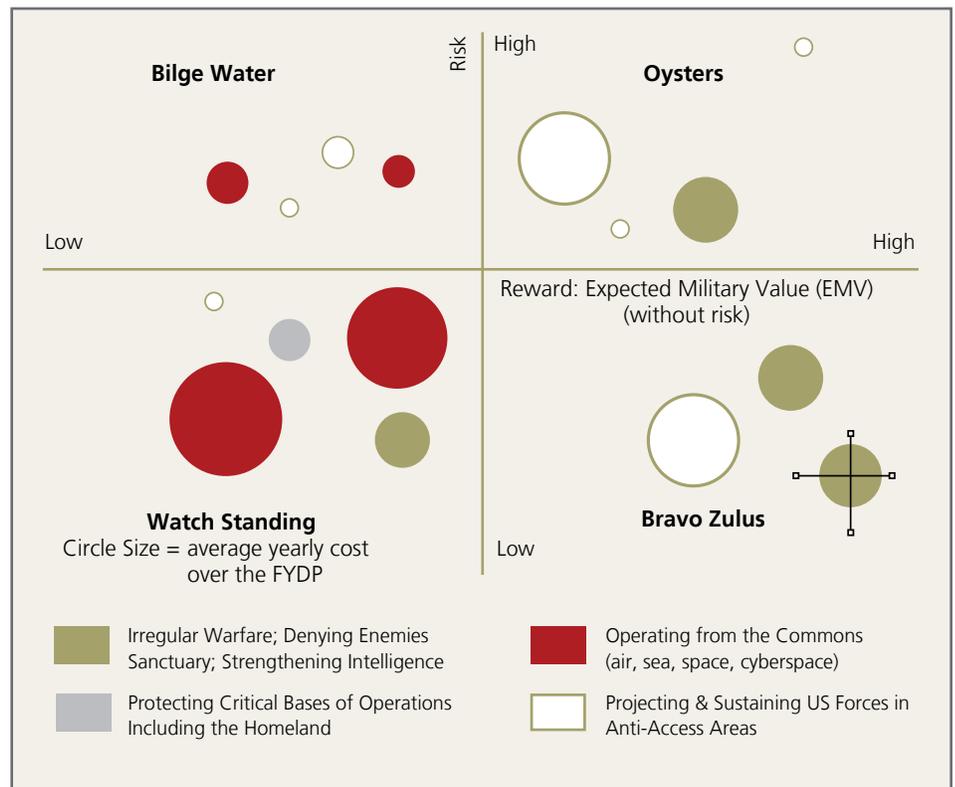


Figure 4. Sample Risk-Reward Bubble Diagram

ranking the importance of these tasks using subject matter experts. Namely, there is no flawless tool or technique to employ. As the great American mathematical economist Kenneth Arrow pointed out in his Ph.D. dissertation in 1951, any technique that anyone can ever develop to rank-order preferences, other than using a dictator, will violate at least one commonly accepted measure of fairness.

Nevertheless, the situation is not hopeless. Two imperfect but highly regarded techniques that are employed are Condorcet's Method of Pairwise Comparisons and Borda's Count technique. The Special Operations Command uses the former in its strategy-to-task assessment model; major league baseball uses the latter annually in choosing the most valuable players.

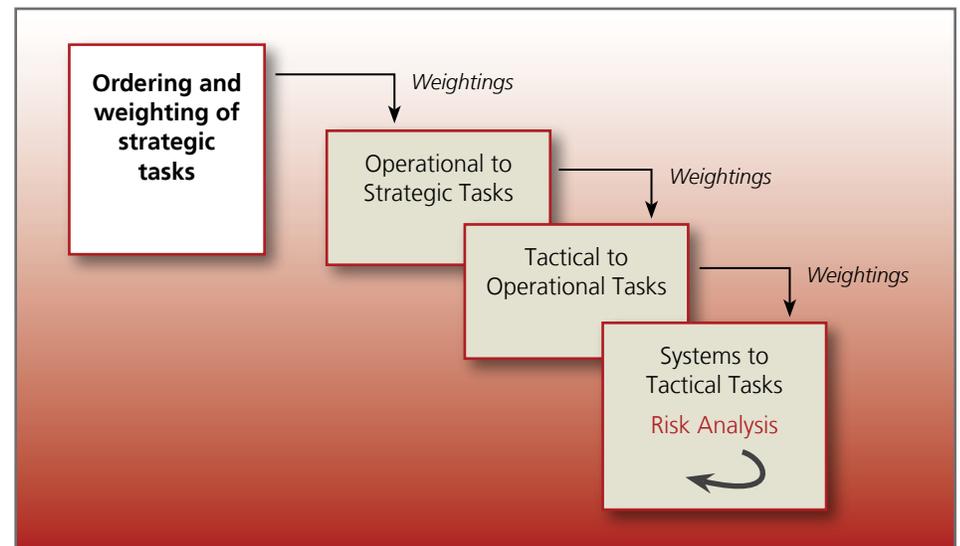


Figure 5. Scoring System Architecture

Condorcet's technique matches one strategic task against each of the others, one at a time, in head-to-head competitions. A "one" is given for a win and a "zero" for a tie in each of the match-ups. The task with the greatest number of wins becomes the top preference. In the Borda Count technique, numerical values or weightings are assigned to each of the tasks in a subject matter expert's vector of votes. We then sum the weightings across scorers. The task with the highest number of votes is the winner. As a side note, both the Condorcet and the Borda techniques use all of the information in a sample of scores, a very strong theoretical argument in favor of each. Other techniques do not possess this attractive property.

In a mock voting to test the methodology, the top-rated preference using both the Condorcet and the Borda techniques was Defend U.S. Ports and Coastal Approaches Against Sea Mines.

Indeed, the two different techniques yielded the same exact order of preferences

for all five strategic requirements, giving some assurance that the sample voting was sound.

Next, a working group defined a list of operational and tactical tasks for Mine Warfare. We link tasks at one level to tasks at a higher level using a display and scoring technique shown in Figure 6, a sample matrix matching operational to strategic tasks.

For each cell in the matrix, we ask subject matter experts to determine the value of an operational task in meeting the requirements of a strategic task. Four responses are allowed:

- A critical operational task is a potential war stopper if not done.
- An essential operational task significantly mitigates risk, but is not a war stopper.
- A useful task enhances capability.
- A particular task may not be needed at all.

The values in the red cells in the Strategic Tasks column are weights obtained from the Borda Count technique and indicate the

relative importance of the various strategic requirements. We multiply these values by entries in the cells of the matrix to generate a set of weights for each of the six operational tasks. This same approach is used in a second matrix (not shown here) for linking tactical tasks to operational tasks.

The penultimate step in the scorecard process is an evaluation of the capability of individual MCM systems. We evaluate each system in terms of its effectiveness and suitability on a low-to-high scale. Effectiveness, loosely stated, is the degree to which a system performs its mission, with speed included in the measure, an all-important metric in Mine Warfare. Suitability is the degree of availability, interoperability, maintainability, and so on. Effectiveness and suitability metrics are scored against each of the tactical tasks.

The desired outcome of scoring is to determine how well each system meets strategic, operational, and tactical tasks. Obviously, the more objectives the system satisfies, the higher the score. Higher-scoring projects will receive greater emphasis and quite

Strategic weights from Borda Count		Operational Mine Countermeasure Tasks					
		Perform Intelligence Preparation of the Battlespace	Conduct Q-Route Clearance	Conduct Port Clearance	Conduct Operational Area Clearance	Conduct Amphibious Breaching	Conduct Follow-on Clearance
Defend U.S. Ports and Coastal Approaches Against Sea Mines	1.3	2	0	0			
Collect, Analyze, and Share Intel Related to the Worldwide Threat of Sea Mines	1.2	3	1	1			
Maintain Mobility of Operational Forces Against the Threat of Sea Mines	1.0	1					
Protect Operating Forces Against the Threat of Sea Mines in the Littoral	0.9						
Preserve Freedom of the Seas for Commercial Shipping in the Face of Sea Mines	0.6						

Anchored Scale for Importance of Operational Task:

3 Points - Task is *critical* in achieving a strategic requirement. A potential war stopper if not done.

2 Points - Task is *essential* in achieving a strategic task. Significantly mitigates risk.

1 Point - Task is *useful and enhancing*.

0 Points - Task not performed.

Figure 6. Sample Matrix Linking Strategic MCM Tasks to Operational MCM Tasks

possibly more resources for development and fielding.

Armed with the results of scoring and ranking, coupled with cost data, we are able to display the data in a format that is easily understood by senior leaders and decision makers. Ideally, the results could be manipulated near real-time so decision makers can conduct what-if questioning with answers provided in short order.

Results and Conclusions

Currently, NCAD [Naval Cost Analysis Division] is concluding an analysis of a subset of Navy programs, Mine Countermeasures, as a proof of concept. "We are still at our early stages of development, but already we are showing ourselves to be proactive business partners to the programs and requirements communities, who have expressed not only enthusiasm but also critical input for the project," said Mr. Greco.

Several obstacles still remain. Mr. Robert Hiram, a key member of the Portfolio Analysis Team, stated, "One of the biggest hurdles has been the difficulty of scoring both dedicated systems and multipurpose platforms given the complex interdependence between them."

In addition, fair weighting of individual programs is problematic because when each program is evaluated in a scoring session, there are very few subject matter experts who have expertise in all programs, including leading-edge science and technology projects. Fewer still are those subject matter experts who can accurately assess the uncertainty of achieving technical success of a particular science and technology project that requires technical breakthrough. One final hurdle is the ability to report the analysis in an easily understood format that is acceptable to senior leaders, thereby providing useful information without becoming a full campaign analysis.

The results of portfolio analysis have the promise of giving senior leadership valuable metrics, including risks and uncertainties of costs, capabilities, and requirements, and of determining

which portfolio to choose among a set of plausible portfolios for satisfying national security objectives. Mr. Greco believes that "the product NCAD is developing is groundbreaking. It will shape the way we look at investment decisions for many years to come."

Endnotes

¹Arrow co-shared the Nobel Prize in Economics in 1972 for this work. His conclusion is today called "Arrow's Impossibility Theorem."

²As defined by the Joint Chiefs of Staff, Operational Effectiveness measures "the overall ability of a system to accomplish a mission when used by representative personnel in the environment planned or expected for operational employment of the system considering organization, doctrine, tactics, supportability, survivability, vulnerability, and threat."

As defined by the Joint Chiefs of Staff, Operational Suitability is "the degree to which a system can be placed and sustained satisfactorily in field use with consideration being given to availability, compatibility, transportability, interoperability, reliability, wartime usage rates, maintainability, safety, human factors, habitability, manpower, logistics supportability, natural environmental effects and impacts, documentation, and training requirements."

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Leaning the Antideficiency Act Process

Borrowing a process from the private sector to improve the Antideficiency Act process, with expectations of a dramatic cycle time reduction

Kathleen Cohen and Lauren Firer

Introduction

Lean Six Sigma (LSS) is a business process reengineering method being used widely by the private sector to streamline processes, improve quality, and gain efficiencies in practices. LSS is project-driven and results-oriented. There are several types of LSS projects: black belt projects (approximately three months), Kaizen Events (less than one week), and Just Do Its (one to two days). The principles of LSS are being implemented throughout the government. The Office of the Under Secretary of Defense (Comptroller) (OUSDC) recently spearheaded LSS process reviews for several major Department of Defense (DoD) financial management processes. This article describes how the principles of LSS were applied to the process of investigating and reporting formal Antideficiency Act (ADA) violations.

The Old ADA Process

The ADA is a series of statutes in Title 31 of the United States Code designed to bind the executive branch to limits on the expenditures of funds. Each agency is required to have a process for identifying, investigating, and reporting potential violations of the ADA. For the DoD, these procedures are specified in the DoD

The Lean6 Process



Financial Management Regulation, or DoD-FMR (DoD 7000.14-R), Volume 14.

The formal ADA investigation process is rather involved and requires numerous signatures and movement of information between offices within and outside a DoD component (that is, military departments and Defense agencies). Although each component may have some unique aspects of the formal investigation process, the foundation of the process is the same.

Once it is determined that an ADA requires a formal investigation, the component assigns an investigator to the case as an additional duty. The investigator conducts interviews, gathers information, solicits legal opinions, and submits his or her report back to the component headquarters. There, the report is reviewed, legal opinion is sought, and a determination is made about the nature of the violation and the responsible parties.

A formal request for concurrence on the determination is then submitted to the OUSD(C). If concurrence from OUSD(C) is received, the component requests the command of the responsible party to administer discipline for the ADA violation. When discipline has been completed, the component sends a final report to the OUSD(C). As required by law, the OUSD(C) then prepares a final report for submission to the Office of Management and Budget, the Congress, and the President.

The Problem

Inherent in the preceding process is time—time to do a complete and accurate investigation, to reach a determination, and to receive concurrence on that decision. Additionally, the old process produced a paper trail that was often cumbersome and time-consuming, requiring a number of “chops” and signatures on memorandums. These issues result in a lag in closing out ADA violations. According to the DoDFMR, the components have nine months to submit their final report to OUSD(C), and OUSD(C) has an additional three months to submit the report to the Congress and the President.

Thus, the metric for completing the entire ADA process is 12 months. It is evident in the ADA monthly metric reports that, under the old process, the metric is not being attained. The calculation, from a review of all ADA cases from 2002 to 2005, produced a median cycle time between 15 and 37 months. This is due to several factors, including delays in obtaining signatures, investigators who had to balance their regular job with additional ADA investigation duties, redundant legal reviews, redundant reporting requirements, and other component-specific problems.

The military departments (MILDEPs) were very interested in reducing the ADA cycle time and, at the behest of the Assistant Secretary of the Navy (Financial Management and Comptroller), got together to brainstorm ideas. After all, less time spent on ADAs could yield higher productivity on other financial management issues. At the same time, the OUSD(C) became interested in alternatives that would help attain the currently established 12-month metric.

Solution

The OUSD(C) determined that the best solution to improve the ADA cycle time was to engage the MILDEPs in a week-long LSS session. The goals were to improve the ADA cycle time to achieve 12 months or fewer and to identify process commonalities among the MILDEPs. The OUSD(C) partnered with the Defense Finance and Accounting Service (DFAS) and brought in two DFAS employees who are specially trained as LSS “black belts” [experts on LSS principles and tools]. They were tasked to facilitate the LSS meetings and give follow-on briefs to the OUSD(C). In July 2005, an LSS team was formed that included representatives from OUSD(C), DFAS, the black belts, and the MILDEPs. The team members were responsible for the following deliverables: flowcharts; current process data; analysis of data including value-added and non-value-added steps; identification of triggers and events; recommendation of projects, Kaizens, and Just Do Its; prioritizing the list of recommended projects; and outbriefing.

Once the team's roles and responsibilities were cemented, the brainstorming began. Team members developed flowcharts

of the current ADA processes, along with “swim-lane” matrices to identify commonalities between OUSD(C) and the MILDEPs. The team mapped the “to-be” process, which included flow charts by MILDEP and data links to processes, and determined LSS project opportunities. As a result, the team determined that the primary drivers of the long cycle time seemed to be the same across the board. The principal drivers follow:

- The additional duty (ADDU) nature of the assignment to conduct the ADA investigation, thereby causing delays when regular duties superceded ADDU
- The need to obtain legal opinions at various levels within a component
- The requirement to ascertain who is allowed to sign official ADA correspondence and the correct format
- Involvement of DFAS in reviewing ADA packages
- Monthly reporting requirements to OUSD(C)
- OUSD(C) coordination
- Contracting out investigations
- Web-based ADA investigator training

The team focused on the items that could reduce cycle time, as well as those items where there was no value added. As a result of all the data gathering and analysis, Lean Six projects, Kaizens, and Just Do Its were proposed.

Results

Figure 2 (page 36) reports the current results of the LSS review of the DoD ADA process. Bottom line: The LSS team expects, at a minimum, a 40-day cycle time reduction. The new processes took effect in November 2005, and the LSS team will perform a six-month follow-up review.



KAIZEN PROJECT	IMPLEMENTATION DATE	IMPACT
(1) Move ADA administrative reporting function from DFAS to OSD	Complete	20-day cycle time reduction
(2) Provide advanced DoD Legal Review	Complete	10-day cycle time reduction
(3) Eliminate 45-day memo time	Complete	Reduces OUSD(C) GC cycle time
(4) Contract out preliminary ADA investigations	Complete	Reduces resource requirements
(5) Implement DoD Web-based or other ADA investigator training	AF – Complete Navy – May 2006 Army – Uncertain	Reduces rework and report errors

JUST DO IT PROJECT	IMPLEMENTATION DATE	IMPACT
(1) Eliminate monthly redundant reporting requirements	Complete	Minimally impacts ADA processing time
(2) Reduce quantity of monthly charts	Complete	Minimally impacts ADA processing time
(3) Discontinue need for MILDEPs to update DFAS e-portal	Complete	Minimally impacts ADA processing time
(4) Determine necessity for OUSD(C) program budget coordination	Complete	Reduces cycle time
(5) Move “forty-five-day” memo from OUSD(C) signature to Deputy Chief Financial Officer signature	Complete	5-day cycle time reduction
(6) Convert “signed OSD taskers” into electronic format for quick distribution	Complete	5-day cycle time reduction
(7) Letter format consistent across MILDEPs	Complete	Reduces review cycle time
(8) MILDEPs reduce formal investigation time from nine months to four months	Complete	Reduces waiting time
(9) Use the same investigator for prelim and formal ADAs (option)	Optional	Reduces rework

Figure 2. Current Results of the Lean Six Sigma Review of the Department of Defense Antideficiency Act Process

Figure 3 offers a macro-level look at the new DoD ADA process that takes into account the Kaizens and Just Do Its noted in Figure 2. As with any process change, validation of the outcome will be required over time. With more standard processes and procedures across MILDEPs, however, the likelihood of achieving success will certainly be much higher. In addition, the communication and teamwork among the MILDEPs and OUSD(C) was of great benefit and should certainly help in achieving the ultimate goal—cycle time reduction. 

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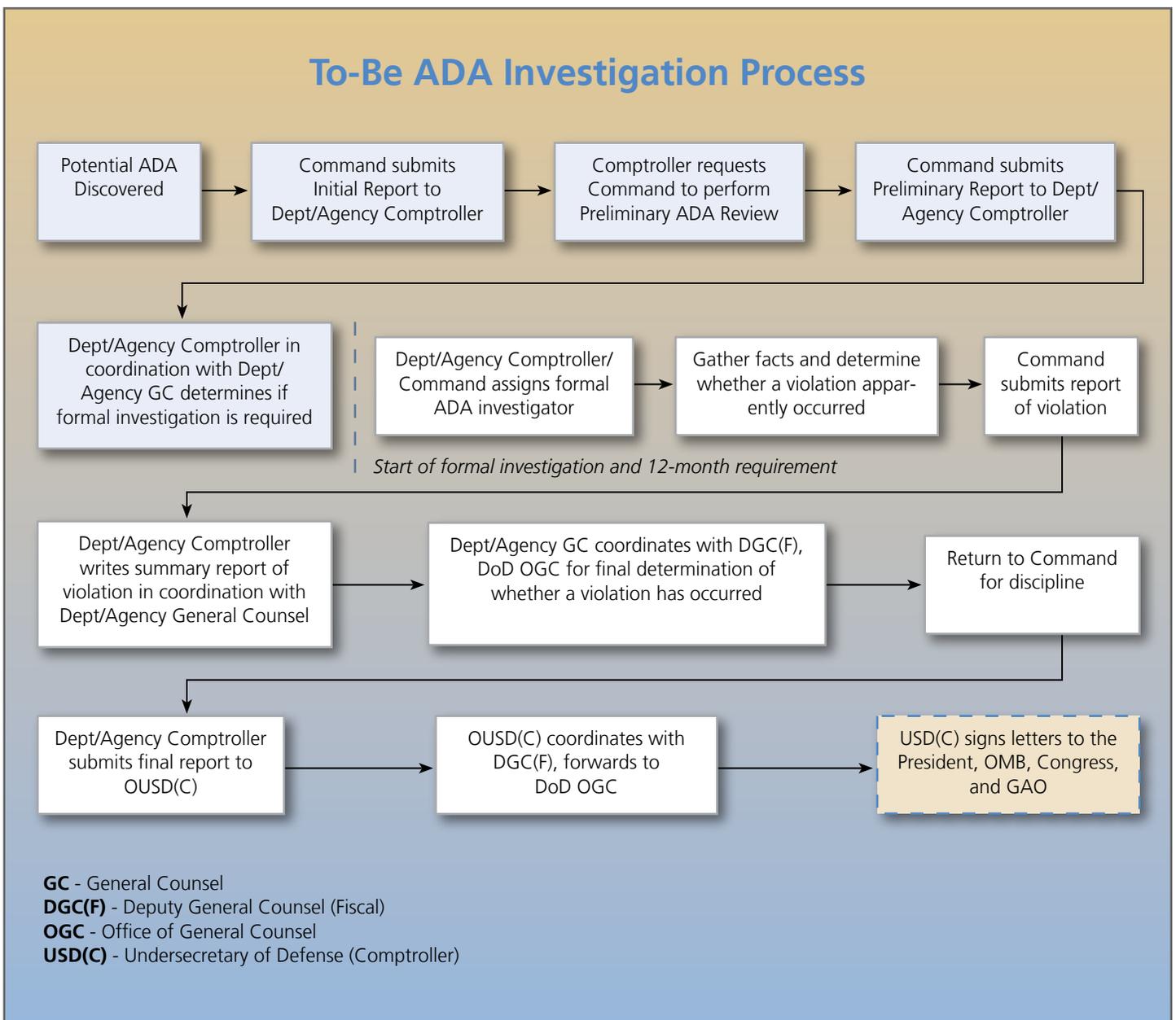


Figure 3. New Department of Defense Antideficiency Act Process

Department of the Navy

Lean Six Sigma:

A Financial Journey

A total team effort to employ Lean Six Sigma concepts pays dividends

*Denise Bar,
Joseph Russell, and
Loretta Finamore*

What Is Lean Six Sigma?

If one looks up the term *lean* in Webster's Dictionary, there will be several definitions, none of which will fit the meaning used in the concept of Lean Six Sigma (LSS). In the business world, the term *lean* usually refers to changing practices and procedures to become more efficient and effective. Sigma is a Greek letter used to describe variability; it serves as an indicator of the likelihood that errors will occur. The term *Six Sigma* derives from the number of standard deviations used in statistics to describe the amount of variability for 100 percent of the population. The concept of LSS may be defined simply

as a methodology to implement or change processes that yield effectiveness and efficiencies and quantify those changes. Although this is certainly a short definition and thus may leave one with the impression that LSS is a minimal commitment, this is far from actuality. The implementation of LSS requires a lot of dedication from leadership, hard work by team members, and adequate time to prove that the change in processes meets the objective.

LSS focuses on value—with a heavy emphasis on eliminating “waste.” Value generally is defined by the customer and must

meet the following criteria:

- Add form or a feature to the product or service
- Be in demand by the customer, who is willing to pay extra for it
- Add a competitive value

Waste is human activity that uses resources but does not create value. The seven types of waste are overproduction, waiting, transport, extra processing, inventory, motion, and defects. LSS combines the two most important business improvement trends of the twenty-first century: making work faster by using various Lean prin-

principles, and making work better by using Six Sigma.

The methodology employed in LSS is a project-focused approach consisting of five phases known as the DMAIC model:

- Define—Identify customer needs and what is to be improved
- Measure—Baseline and target performance and validate measurement systems
- Analyze—Identify variations and screen potential causes
- Improve—Identify improvements and statistically validate improvements
- Control—Document, monitor, and sustain gains

As with most overarching methods, LSS uses terminologies that define key roles in implementing the approach, defined as follows:

- Executive Leadership—Owns the vision, gives direction, tracks business results, leads change, and allocates resources.
- Value Stream Champion—Owns the Rapid Improvement Plan and the redeployment plan and tracks financial results.
- Green Belt—Leads and supports Rapid Improvement Events (small to moderate projects). This is a fulltime role during the event.
- Black Belt—An expert on LSS principles and tools; leads larger projects and coaches Green Belts. This is a fulltime position.
- Master Black Belt/Sensei—Trains Black Belts and Green Belts and leads complex projects. This is a fulltime position.
- Lean Champion—Heads the Lean office and captures Lean metrics. This person owns the lean deployment and communication plans.

Those terms are just a sample of the lexicon used in LSS. Other important terms are the following:

- Value Stream Mapping—Defines existing

processes and possible waste reduction opportunities

- Kaizen Event—An intensive project that can be done in 3 to 5 days, rather than the typical LSS project that takes 3 to 6 months
- Just Do Its—Quick implementation opportunities requiring limited coordination

Some of the terms used have a definite Far East flavor. This is due mainly to the fact that the Toyota Motor Company was an early implementer of LSS, having worked on lean methods from as early as the 1950s. Since that time, a number of companies, regardless of size and revenue, have adopted LSS as the preferred methodology to improve business practices.

NAVSEA's Financial Journey

The NAVSEA financial management community began its Lean journey as a result of the command's Executive Planning Session (EPS), which was conducted in November 2004. Since NAVSEA is responsible for executing over \$24 billion in obligational authority, senior leaders identified funds processing as a value stream to be considered. In response to the EPS, three major subvalue streams were selected for further analysis: Procurement Requests for NAVSEA headquarters' contracts; other funding documents, primarily work requests, to working capital fund activities; and funding documents for University Affiliated Research Centers (UARC). Each of these value streams was analyzed by a separate team of personnel from various elements within NAVSEA.



Support [for Lean Six Sigma] has come from our senior leadership to include various assistant secretaries and our most senior flag officers.

In the Department of the Navy (DON), we are adopting LSS as well. Support has come from our senior leadership to include various assistant secretaries and our most senior flag officers. The wave of LSS is catching hold in many of our disciplines, and we find that partnering across communities is also very effective and educational.

We in the financial management community are riding the wave and are very excited about the projects that are under way. Some of our projects are short events, with quick return on the investment; others may take more time to map through issues and test the concepts. The following are a few of the LSS efforts that are ongoing at our three major system commands: Naval Sea Systems Command (NAVSEA), Naval Air Systems Command (NAVAIR), and the Space and Naval Warfare Command (SPAWAR).

Each team produced a map of current processes that identified each step or action as value added, non-value added but required, or non-value added. Each team then formulated a group of projects including those that would take up to six months, shorter-term five-day events, and Just Do Its.

NAVSEA's first LSS project was the UARC effort. The goal was to reduce cycle time and work-in-process (WIP) by 50 percent. The implementing team created a rapid improvement plan to bridge the current state to the future state. Once the improvements identified in the Rapid Improvement Plan have been implemented, it is estimated that the goal of reducing cycle time and WIP by 50 percent will be exceeded. There also will be an increased capacity that permits the addition of new workload without hiring personnel and precludes a need in the fu-

ture to use tiger teams [official inspection teams called in to investigate a problem] to reduce WIP.

The funding document team has established objectives for the shorter-term events and is collecting and analyzing data. In addition, the longer-term efforts are being reviewed; the plan is to implement new processes starting October 1, 2006. In addition to the funding documents processed to field organizations, there also are funds used for contracts managed by NAVSEA.

A team conducted a value stream analysis of the overall procurement request and contracting process with the objective of standardizing the requirements generation process in order to reduce the cycle time and the rework currently associated with contract awards. Specific initiatives arose from the analysis to standardize the generation process and the content of procurement requests. The command is scheduling additional events to demonstrate the effectiveness of these changes.

NAVAIR's Efforts with LSS

NAVAIR has also been very busy implementing the concepts of LSS. In the long-standing aviation tradition of coming up with "catchy" names, NAVAIR's LSS program is called AIR-SPEED. NAVAIR has a number of events ongoing that directly or indirectly affect the financial community both at headquarters and at field activities. One of particular note is the foresight to deploy, on a test basis, the Enterprise Resource Planning (ERP) system used by NAVAIR to another command, NAVSEA.

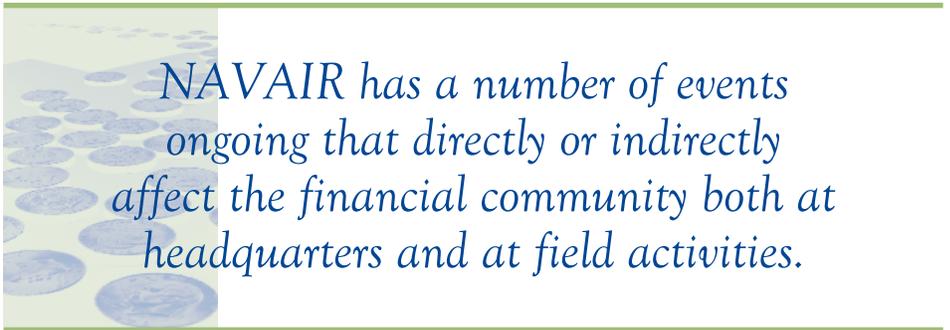
Specifically, NAVAIR manages the Electro-magnetic Aircraft Launch System (EMALS), which is planned for the next-generation carrier. Although NAVAIR manages the development efforts, the funding is embedded in the carrier line item until fiscal year 2006. NAVSEA has issued money earmarked for EMALS program management and execution to NAVAIR Lakehurst. That funding then was treated as incoming customer funds at the site level, and only those NAVAIR personnel authorized, at both headquarters and Lakehurst, had

visibility into the ERP system to manage and execute the funds. The NAVSEA headquarters program office wasn't able to use the powerful planning tools within ERP to track program execution against respective schedules.

Now the NAVAIR portion of the funding is allocated directly, and the appropriate NAVSEA user can access the ERP and de-

veloping a standard tool across the SPAWAR enterprise, sharing financial systems information across echelons and performing organizations, using innovative techniques to clear aged commitment and obligation balances, and communicating the value of tri-annual reviews. The command plans further improvements as well.

The mandated requirement is to review



velop project and budget structures to plan and execute the funding as intended. Also, since NAVSEA is the budget submitting office for the EMALS program, it can run the needed reports directly from the ERP to answer financial data calls for mid-year or year-end reporting requirements associated with funds allocated that fiscal year.

An ability to access the ERP has enabled the NAVSEA comptroller, various business financial managers within program offices, and other members of the acquisition team to improve financial management—and also gives another command a sneak peek into the type of functionality it will receive from the Navy ERP. The current ERP system is the financial building block on which the Navy ERP system is being built. Many of the processes that the command's ERP currently executes are being further refined and incorporated into the Navy ERP solution.

SPAWAR Tri-Annual Reviews

When the Department of Defense (DoD) reaffirmed the tri-annual requirement for review of commitments and obligations, SPAWAR saw the need to augment its process to achieve improved review performance. SPAWAR has greatly improved its tri-annual review performance by imple-

menting a standard tool across the SPAWAR enterprise, sharing financial systems information across echelons and performing organizations, using innovative techniques to clear aged commitment and obligation balances, and communicating the value of tri-annual reviews. The command plans further improvements as well.

The mandated requirement is to review commitments and obligations for timeliness, accuracy, and completeness and to report results to component senior financial managers three times each fiscal year. The intent is that these reviews will prevent problem disbursements and potential violations of the Antideficiency Act and will bring the component closer to achieving clean financial statements. Although this is an excellent goal, the reviews can be cumbersome and time-consuming and cannot be effectively accomplished solely within a comptroller organization. As we have learned with many transformational initiatives, support from other communities, like program and contract offices, is also required. But getting people in these other disciplines to see the benefit of these reviews has been challenging.

Historically, program offices focus on obligating funds and then receiving the services or goods. The review of expenditures typically has not been an area of interest for most program offices, which instead defer to comptrollers and the Defense Finance and Accounting Service (DFAS) to deal with expenditure issues. After all, by the time some expenditures occur, program offices could have dealt with three or more years of new funding.

Today, however, with the growing interest in clean financial statements and budget reductions based on both low obligation rates and poor expenditure rates, program offices have a more vested interest in the tri-annual reviews. The SPAWAR comptroller built on this interest, developing methodologies for the reviews. The office developed a three-year compliance plan with a focus geared to getting the best return on investment with respect to reuse of funding. Education and training of employees were required on systems such as the Mechanization of Contract Administration Services (a DFAS system that provides contract payment data) and with employees both internal and external to SPAWAR, such as administrative contracting officers, procurement contracting officers, and contracting officer representatives. Additionally, the SPAWAR System Center Charleston developed a Web-based

data collection tool that provided an automated means for executing local tri-annual reviews. This tool is now being implemented at NAVSEA Navy Working Capital Fund field activities.

SPAWAR employed a total team approach, and the effort is reflecting a payoff.

In addition to the monetary effect, there are also other benefits from the tri-annual reviews. A contracting officer representative's ability to identify contract funds available for reuse has enabled earlier initiation of final rate negotiations with the Defense Contract Audit Agency and, thereby, shorten the routinely lengthy timeline for final contract closeout. In summary, these successes benefit both SPAWAR program initiatives and the Navy in maximizing use of limited financial resources that otherwise would

have been lost. This, too, should bring the DON closer to achieving auditable financial statements.

A Long Journey, But Worth the Investment

LSS is a long journey that certainly will find some potholes and bumps along the way. Many of our DON commands are at the beginning of the journey, but they are making great progress. The communication and understanding of processes garnered by all participants are so valuable and worth the time, even if a process cannot be "Leaned" in a significant way. The DON looks forward to continued success stories and the opportunity to share these stories within and outside DoD. For further success stories, please visit the following Web site: http://www.finance.hq.navy.mil/fmc/Pep_Success. 

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