PERFORMANCE MANAGEMENT CASE STUDY: THE DEFENSE CONTRACT MANAGEMENT AGENCY

OUTCOMES, NOT ACTIVITIES, DRIVE VALUE

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EXECUTIVE SUMMARY: THE VALUE OF BETTER PERFORMANCE

Mike Williams, Executive Director of IT and CIO of the Defense Contract Management Agency (DCMA), referred to the *10-pound problem*.

"When building a new aircraft, weight is critical. As weight increases, performance decreases. Larger engines might bring performance back, but they increase the weight too. Larger engines might also require more fuel, and that increases weight. Inevitably, someone wants to add a new piece of equipment, and '*it only weighs 10 pounds*.' That's fine by itself, but almost immediately a line of people appears at the door with equipment they want, each weighing only 10 pounds. If all the equipment people wanted was put on the aircraft, it would never get off the ground."

The point is that everything isn't critical. Tradeoffs must be managed, within individual weapon acquisition programs and within DCMA's potential activities. A performance management system provides the information and the analytic environment where these decisions can be made more efficiently and more effectively.

People often measure performance by counting the number, type, and success level of *activities* and then begin to equate activities with outcomes, Mike Williams says. But outcomes are what drive customer value, not activities.

This paper describes the background, process, and results of DCMA's effort to improve how it measures outcomes and the way it manages performance. For DCMA, the stakes are huge. The Defense Contract Management Agency is part of the United States Department of Defense (DOD) and works directly with Defense suppliers to help ensure that DoD, federal, and allied government supplies and services are delivered on time and at projected cost, and that they meet all performance requirements. The annual budget for DCMA is about $1.1 billion.

"The performance management program at DCMA is one of necessity," says James M. Russell, DCMA's Executive Director Financial & Business Operations/ Comptroller. "We need to be able to measure and articulate the impact DCMA has on DoD. Ultimately, what is the quality of work done for the war fighter?"

That question, and the value of better performance to DCMA—and to the nation, is addressed in this paper.

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PROJECT BACKGROUND

Agency Background

The Defense Contract Management Agency (DCMA) is described in its web site (**www.dcma.mil**) as:

"The Department of Defense (DOD) component that works directly with Defense suppliers to help ensure that DoD, Federal, and allied government supplies and services are delivered on time, at projected cost, and meet all performance requirements.

"DCMA directly contributes to the military readiness of the United States and its allies, and helps preserve the nation's freedom, by providing Customer Focused Acquisition Life Cycle and Combat Support to Ensure Readiness, on a worldwide 24-by-7 basis."

The DCMA's vision is to be its customers' indispensable partner, chosen by them because it delivers the best solutions. Its strategic objectives are to:

• Equip its people to provide extraordinary customer support.

• Deliver great customer care.

• Improve support to acquisition lifecycle processes.

• Improve financial management through performance and budget integration.

"DCMA's 10,500 acquisition professionals are DOD's 'eyes and ears' in the factories. They ensure industry's products meet performance requirements and are delivered on time and at the agreed-to costs," says the DCMA Director, Major General Darryl Scott, USAF.

DCMA is headquartered in Alexandria, VA, with 65 major field locations and more than 750 locations worldwide. DCMA oversees 335,000 contracts worth about $900 billion. This includes the acceptance and delivery of more than 1,200 aircraft each year from defense contractors to both the U.S. government and other countries. DCMA works with a number of foreign defense ministries, under reciprocal arrangements negotiated by the State Department and DoD.

While the primary DCMA mission is contract management for military services, it also operates on behalf of other government agencies such as NASA, FAA, and USPS. Work for entities within DOD is not reimbursable; work for non-DoD entities is eligible for reimbursement. The annual budget for DCMA is about $1.1B, of which about $900 million is appropriated by Congress. The balance consists of reimbursements, mostly by NASA and Foreign Military Sales (FMS).

DCMA was created in 2000. Previously, it had been part of the Defense Logistics Agency (DLA) and called the Defense Contract Management Command (DCMC). The initial DCMC workforce in the early 1990s was about 26,000 civilian and military members; this has been reduced to about 11,000 for DCMA today through consolidating activities. The professional workforce comprises engineers, contract administration specialists, price cost analysts, transport, packaging and industrial specialists, and QA experts. They provide quality measurement—managing process excellence and validating manufacturing processes—and hands-on work with products being manufactured and procured. About 600 employees are based overseas today, including a contingent in Iraq.

DCMA is involved with the complete acquisition life cycle. Pre-contract activities include: assistance with Request for Proposal preparation and review, participation on Source Selection Evaluation Boards, and assistance with price negotiations. During contract execution, DCMA performs a myriad of contract management services. All of the following are delegated to DCMA on a routine basis, to present a consistent "one face to industry" on behalf of the DoD and the military services:

- Quality assurance evaluation.

- Pricing and negotiating delivery orders and contract changes.

- Earned Value Management (EVM) evaluation.

- Evaluating engineering, production, and transportation.

- Final settlement of overhead costs (in close cooperation with the Defense Contract Audit Agency).

- Forward pricing rate agreements (which facilitate quick-response contractor offers and price negotiations).

- Contractor insurance and pension program reviews.

- Disposition of Government property provided to facilitate contract performance that is no longer needed (which might include return to the original property holder, reutilization by some other DoD or Federal entity, sale, and, occasionally, charitable donations to schools).

- Evaluating socio-economic program performance (such as small-and-disadvantaged- business subcontracting).

The total number of contracts under management has decreased, but the average value of individual contracts has increased. DCMA's dollar "backlog" today is about the same as it was in 1990.

The Challenge

The original role of DCMA and its predecessors was to be an after-the-fact compliance "watchdog." Over time, DCMA's customers in the rest of the Federal Government wanted more before-the-fact advice, assistance, and intervention to head off or lessen any acquisition problems. DCMA began a "customer-focused" cultural transformation about 10 years ago that has continued under all of its directors since. For example, General Harrington, the previous DCMA Director, introduced "customer-centric culture" ("C3") training to broaden and strengthen the agency's customer focus. The current director, General Scott, has built on that training by adapting and applying concepts from Larry Bossidy's book, *Execution*, and from the Quality Function Deployment (QFD) discipline.

The latest phase of DCMA's transformation is implementing a method to determine customers' desired outcomes, defining strategies to achieve those outcomes, asking customers "Will this do?" and then selecting metrics to measure progress. This work is already being supported by business intelligence, reporting, and performance management tools. General Scott, the current DCMA director is pushing for widespread workforce use of those tools. He wants them to become the core of an agency-wide, closed-loop Performance-Based Management program.

Mike Williams, DCMA's CIO and Executive Director of IT, expressed the agency's performance measurement challenge this way: "It is sometimes hard for us—and even for some of our customers—to understand what outcomes really are. So many of us have become so used to measuring our performance by counting the number, type, and success level of our *activities* that we now sometimes equate activities with outcomes. But outcomes are what drive customer value, not activities. It's the results that really count, not the efforts that produced the results.

"The 'Voice of the Customer' is easier to identify for the major weapon system programs. But for spare parts and similar procurements, there are many, many more individuals who are involved, and accordingly, the 'voice' is much more diffuse, harder to discern, and much harder to work with in terms of arriving at measurable outcomes," he said.

Quality assurance is a performance measurement area that the agency has grappled with for decades, says Williams. DCMA has tried a variety of internal metrics to measure the success of its Quality Assurance efforts—ensuring good products go through while blocking defective products from the military's operating forces. Williams said that every internal metric ever tried ended up inadvertently motivating behaviors—either by their employees or the contractors, and sometimes both—that were counter-productive.

The ideal success measures of DCMA's Quality Assurance efforts would come from timely, complete reporting by the military services' operating forces (such as Army battalions, Navy ships, Air Force squadrons). However, the field operating forces have other priorities. Also, they expect that whatever goods and services they receive will be the right quality. They don't see policing the acquisition system as their job. However, when DCMA does hear that things are not going well, that message is often LOUD.

Williams referenced the "half of one percent rule." It refers to problems that happen occasionally, are often small-scale or not terribly important, but cause irritation in inverse proportion to their frequency and importance. "In contrast," Williams said, "people seem to think the bad things that happen 40 or 50 percent of the time as just part of life. They don't stop to think that those problems might be easily fixed and make a huge difference. Without objective data, we could focus on the half of one percent issues and overlook the 40-50 percent issues for far too long."

James M. Russell, Comptroller and Executive Director of Financial and Business Operations, says, "With declining budgets and people, plus increasing activity, plus the lack of any effectiveness or consequence data, some might believe the optimal state to strive for is no people and no budget." Russell continues, "The performance management program at DCMA is one of necessity. We need to be able to measure and articulate the impact DCMA has on DoD. While we certainly can exert influence on contractors to ship quality products on time, we don't actually make or ship the products. Our challenge is to be able to measure and articulate the importance of that influence." Senior officers in the military services do recognize the key role played by DCMA. "There is a concern among senior level customers in the military that as DCMA headcount shrinks year by year, DCMA will someday finally 'break'," Williams says.

Business Case for Change

Two major factors drove DCMA's transformation:

- Customers were not completely satisfied with DCMA's prior performance and expressed their desire for improvements.

- Ongoing budget pressure means accomplishing more with fewer resources. The post-September 11, 2001 era has seen new military missions that have stretched the capabilities of the armed services. Hundreds of thousands of military personnel deployed in hostile circumstances require that their supply needs be met without delay or exception. Increased DoD expenditures, including those for the operations in Iraq and Afghanistan, have generated additional workload for DCMA, yet those increases have been accompanied by smaller appropriations. DCMA must operate more efficiently and sharpen its focus to those activities that deliver the value required by its customers.

"The performance management program at DCMA is one of necessity."

THE SOLUTION

Objectives

DCMA set out to improve its performance in three principal ways:

- Establishing a process that measures and analyzes the range of current performance, identifies poorer performing units and helps bring them up to standard through management techniques (such as training, personnel moves, and motivation). This improves the average performance level and **reliability of performance**.

- Recognizing trends more quickly and adjusting the organization's priorities and skills to respond to new patterns. Operations units will then focus on the more important and urgent situations, helping avoid problems and enhancing customer service. Such **predictive analysis** is a key element of DCMA's performance management program.

- Increasing organizational agility through more flexible **budgeting systems** and a better ability to **manage tradeoffs**.

DCMA's accomplishments in these areas will be described in Section 4.

The Solution Architecture

DCMA concluded that a platform of business intelligence, reporting, and performance management was the key to empowering its managers and executives. The solution architecture DCMA developed satisfies all of the agency's objectives.

DCMA's Business Intelligence and Performance Management solution is being developed from both top-down and bottom-up perspectives. The top-down view defines agency-wide business performance metrics, and computes and presents them according to top management's requirements.

The bottom-up view is still a work in progress, but it is being defined by DCMA's Contract Management Offices (CMOs) following the customer-focused discipline mentioned earlier. The field operations level is in charge of determining what data to collect, collate, transform, and display relating to the specific outcomes that they have agreed upon with their individual customers. It is, after all, their customers' specific desired outcomes that really count.

DCMA had been using versions of the business intelligence (BI) tools they chose for years, so the needed interfaces were in place. However, DCMA also added new reporting and performance measurement capabilities, along with interfacing and metadata management tools. The metrics management capability, in particular, is important because it adds visibility into performance against customers' desired outcomes. The flexibility of the business intelligence and performance management

solution architecture ensures that external tools can be added when needed. Usability is high, so new or modified user views can be defined quickly.

Implementation Approach

DCMA's implementation approach addressed three key areas:

- Scope and timing.

- User training.

- Systems and technical architecture integration.

Scope and Timing

DCMA wanted an aggressive timeline for implementation while guaranteeing project success: rushing the project with reduced testing or user training would threaten its long-term success. DCMA avoided those short cuts.

In order to keep to an aggressive timeline, DCMA had to choose between two general implementation strategies, characterized as "broad and shallow" or "narrow and deep." The former would introduce less functionality at each stage ("shallow") but apply it more broadly across the enterprise. The latter would introduce more extensive functionality ("deep") but apply it first to only restricted segments of the enterprise.

DCMA's choice was somewhat dictated by the fact that the contracts DCMA manages often involve the efforts of "networks" of Defense contractors, and the goods and services being procured under the contracts must be delivered to warfighting units anywhere in the world. DCMA chose to "build one capability at a time, introducing less functionality at each stage, but applying it more broadly across the enterprise.

Another crucial decision concerned defining metrics. DCMA would need some performance metrics to start with to help establish a quantitative metrics-based management culture. This is being done through both top-down and bottom-up activities.

- DCMA developed top-down performance metrics that match the 120 "cost accounts." DCMA is now collecting time expended against those processes, quantities produced (such as number of reviews and percentage of on-schedule closeouts), and other measures.

- They are rolling out field-level process metrics and "dashboards" based upon customer outcomes.

As the program matures, sharper and more effective metrics will emerge, and the new solution will enable those to be collected and analyzed as well.

User training

Empowering CMO users was another principle of the implementation plan. To accomplish this, DCMA defined the schedule with ample time for rollout and user training. The new performance measurement application, for example, was first implemented in Canada, where a model "super-user"—a product improvement officer (PIO)—could help lead the charge. She then helped with formal classroom training, another rollout in Texas, and additional rollouts elsewhere. DCMA has also determined that additional personnel—particularly managers and supervisors—need to become more familiar with the tools' capabilities. DCMA is using contracted training to address this issue.

Systems and Technical Architecture Integration

From a technical architecture viewpoint, blending the new BI and Performance Management capabilities into the existing environment was challenging. Many of DCMA's primary data systems are "owned by" or at least "shared with" other DoD "shared services" organizations. Therefore, DCMA only influences these, rather than controlling them. Some of those data systems are new and modern; others are not.

The agency's primary data systems include:

- **The Mechanization of Contract Administration Services** (MOCAS) system. Developed in the late 1950's by the Air Force, it is one of DoD's key systems for tracking contract delivery schedules, deliveries, and authorizing payments to contractors. It interfaces with over 40 financial management, logistics management, and contract writing systems throughout DoD and the military services, and exchanges Electronic Data Interchange (EDI) transactions with Wide Area Workflow (WAWF).

- **Wide Area Workflow** (WAWF). This is a DoD-wide application hosted by DISA that allows contractors to submit invoices, public vouchers, financing requests, and DoD material inspection and receiving reports electronically via the Web, FTP, and EDI. It allows DoD "acceptance personnel" (such as DCMA's Quality Assurance Representatives) to sign the inspection and receiving reports electronically; and posts that information to a variety of DoD financial and logistics management systems via EDI. WAWF is hosted in the same data center as MOCAS.

- **Shared Data Warehouse** (SDW) This is a database extract, transform, and load (ETL) system that produces daily OLAP "snapshots" of the MOCAS database. Developed by DCMA on a Unix platform, SDW is also hosted by DISA in the same data center as MOCAS. The Defence Financing and Accounting Service, and several of the military services use SDW for MOCAS OLAP purposes as well.

- **Defense Business Management System** (DBMS) This is the DISA-hosted mainframe-based DFAS accounting and financial management/reporting system DCMA uses.

- **The DCMA Integrated Database** (IDB) IDB supports DCMA's "eTools" suite of Web-based applications. Hosted by DCMA, IDB stores only data created, transformed, and so on, by eTools applications. It also retrieves data as needed from multiple systems and databases throughout DoD. IDB is the core database for DCMA's business intelligence and reporting tools.

- **Performance Labor Accounting System** (PLAS) DCMA's internally developed and hosted labor cost accounting system, PLAS is critical because roughly 85 percent of DCMA's annual budget is payroll-related.

DCMA made the new tools an integral part of its eTools / IDB suite. This integration and common "look and feel" would boost users' familiarity, ease training, and ultimately improve user acceptance.

BUSINESS IMPACT

Encouraging Results

DCMA has enjoyed encouraging results in four key aspects of performance improvement:

- More reliable and improved performance.

- Early warning system with predictive analysis.

- Proactively highlighting and managing tradeoffs.

- Faster and more flexible budgeting.

More Reliable Performance

By accurately measuring the performance of its important business processes, DCMA could establish more appropriate standards and hold operational groups accountable for achieving those standards. As units with performance below these standards improved, the agency's average performance level increased.

Contract closeout is an example of this. This process ensures that all deliverables are completed satisfactorily, reconciles the contractor's invoices against contractual obligations, and determines the correct amount for final payment. Small contracts can take several hours; large contracts can require as many as 600 person-hours. The performance standard is 94 percent of contracts be closed out "on-time"—that is, within the specified period for that type of contract (such as fixed-price or cost-plus-fixed-fee). DCMA has achieved this target. The actual value has increased from 80 to 94 percent. DCMA is providing better and timelier service to its customers, while conserving its resources.

"This integration and common "look and feel" would boost users' familiarity, ease training, and ultimately improve user acceptance."

One of the recent changes that should help DCMA get better information focuses on aircraft maintenance the agency oversees. "Different categories of work were done independently and reported up through different organizations," says Jim Russell, Comptroller and Executive Director of Financial and Business Operations "Now, all the people working on a major program across the country will report through the same chain of command. We expect a more consistent view of performance."

Other examples of metrics include:

- Operational metrics, such as "readiness," or how well contractors' deliveries support the needs of the war-fighters, and time metrics, such as "order to shipment."

- Financial metrics, such as the cost of the basic business processes, and the amount of reimbursable revenue. One example is MUMM, (**M**onthly **U**nit cost of **M**anaging one **M**illion contract dollars). DCMA tracks MUMM and it provides an excellent baseline for performance evaluation.

- Performance metrics for the agency's "strategic enablers," such as Human Resources and Information Technology.

- Metrics defined to correspond with the four-quadrant DoD Risk Framework: Force Management Risk, Operational Risk, Institutional Risk, and Future Challenges Risk[1]. DCMA has mapped its strategies and activities to this framework, and measures progress against it.

Predictive Analysis

Predictive analysis is one of the capabilities enhanced by the new BI and performance management tools. Identifying **canceling funds** is an example of the improvement the new tools have made possible. Canceling funds are appropriated funds whose authorization for disbursement will expire in the current fiscal year, even if the programs they support are not completed. When funds expire, they must be replaced. This reduces the amount of funds in the new fiscal year available for that year's programs. An early-warning system that identifies canceling funds pro-actively helps the military services use funds appropriately. This service is provided by DCMA to its military customers.

A second example is using historical data on manufacturers' performance to predict their ability to meet delivery commitments. This is a key element in ensuring readiness support (on-time delivery) for the war-fighters by reducing the risk of contract failures or delays. DCMA is focusing upon **EVM** (**earned value management**), a tool for weapon systems program management, as a historical performance area for further analysis. "EVM's importance comes from the fact that 15 percent of the way into any program, EVM provides a good idea which way the

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[1] These correspond to the four quadrants of a commercial enterprise's balanced scorecard: customer perspective, internal business perspective, financial perspective, innovation and learning perspective.

program is headed in terms of cost and schedule," says Mike Williams. "EVM should be used to anticipate problems and prepare appropriate corrective actions," he adds.

DCMA looks at historical EVM reporting by contractors to assess their ability to get it right. The agency also provides DoD program and project managers with its own "DCMA estimates" derived from contractors' reporting. One new idea, though, is to look for systematic biases in the way that specific contractors report their EVM data, so that adjustments can be systematically applied to the contractors' reporting to yield improved DCMA estimates.

Combining organizational realignment with performance management can also yield impressive results. DCMA is transitioning from being geographically-based to being product-aligned. To demonstrate why is the example of the **Joint Strike Fighter** is being developed simultaneously at nine major contractor locations in the United States. Many subcontractors across the country are also involved. However, each of the nine DCMA CMOs overseeing the major locations has a separate reporting chain, to say nothing of the CMOs who work with subcontractors. These separate reporting chains inadvertently inhibit information sharing and collaboration among different CMOs.

DCMA has already established several product-aligned organizations. One of DCMA's early successes involves aircraft overhaul, maintenance, and repair. This is a specialized area of industrial expertise, complete with its own basic set of terminology and special safety concerns. Multiple contractors across the United States perform this work for DoD. Some are affiliated with aircraft manufacturers; some are not. The DCMA offices working with those contractors each had separate reporting chains—and often reported to higher-level organizations that had never worked with aircraft maintenance contracts. Consolidating the management of aircraft maintenance via a single command structure has produced more predictable product focus and goals.

In the area of Human Resources, predictive analysis helps DCMA understand the operational implication of the "age wave" at the Agency. This is an inexorable demographic process occurring as a large cohort of employees progresses to retirement. It is critical to understand this three or four years in advance, to hire and train interns, for example.

Better Ability to Manage Tradeoffs

Mike Williams, DCMA's CIO and Executive Director of IT, refers to the 10-pound problem. When building a new aircraft, weight is critical. As weight increases, performance decreases. Larger engines may bring performance back up, but they increase the weight too. Larger engines may also require more fuel, and that increases the weight. People in the aircraft industry understand why it's important

"…anticipate problems and prepare appropriate corrective actions."

not to add weight to an aircraft.

"Inevitably, though, someone will want to add a new piece of equipment, and 'it only weighs 10 pounds,'" Says Williams. "That's fine by itself, except that almost immediately a line of people appears at the door with all the pieces of equipment they each want, each of which weighs only 10 pounds. If all the equipment wanted was put on the aircraft, it'd never get off the ground."

The point is that everything is not critical, and tradeoffs must be managed: within individual weapon acquisition programs and DCMA's potential activities. The performance management system provides the information and the analytic environment to support these decisions more efficiently and effectively.

DCMA's performance management program also provides greater visibility into the "unfunded requirements" list. These projects have funding needs that exceed the agency's available budget. Seeing this list comprehensively lets DCMA make appropriate tradeoffs, so the most important activities receive the requisite funding.

DCMA also uses performance tools to analyze and present the correlation between performance and cost. Previously, DCMA presented performance and cost metrics to management in separate briefings, so relationships were not readily visible. Today, these metrics are integrated, so management has better visibility into the financial and operational impacts of their decisions.

DCMA can now answer the bottom-line question: *if we don't get $X budgeted, then we cannot do activity Y*, according to Scott Blank, Director, Strategic Planning and Program Analysis Division.

The contract closeout process described earlier exemplifies a process where funding and performance levels can be traded off against other requirements. Resources for the higher-priority items on the "unfunded labor requirements" list can be reallocated from contract closeout. By accepting slightly lower performance in this task (and managing it so lower performance affects lower-priority contracts), the agency funded critical programs such as contract management for the new Presidential helicopter.

More Flexible Budgeting

DCMA has used the new tools and new processes to implement a significantly better budgeting process. The expanded use of planning and budgeting will generate additional improvements.

Field units currently specify what they need in the budget by program and occupational 'series' (job/skill category), but this often exceeds the agency's budget constraints. DCMA is expanding the planning process to include customer outcomes, so resources can be prioritized according to the value of the outcomes. People

budget at the detailed organization / job series / program level, and the performance management tool supports the specification of outcomes. This means DCMA has a closed loop system that includes modeling the potential value of each activity in parallel with resource and cost planning and budgeting. This allows multiple and quick iterations while developing the overall budget.

Budget authorizations, in real dollar terms, are declining year to year. Unplanned cuts typically come just before the fiscal year starts, leaving little time to re-plan. There is a critical need to plan "what-if" scenarios in advance, so all units can prioritize critical programs and justify maximum funding envelopes. The planning and budgeting system supports this requirement as well.

It is also important to update program requirements all year long, to plan, reallocate, and redeploy resources as situations change. This will be another key use of the budgeting and planning tool.

In terms of results to date: the planning for Fiscal Year 06 (FY06) was much better than for FY05. Despite a shrinking appropriation, DCMA was able to accommodate increased program requirements. There was better connection of resources to programs and skills. While planning for FY05, there was an abundance of data, but it was hard to extract in a useable fashion. The process was therefore slow, cumbersome, and required more effort and time to achieve the fiscal year budget. In planning for FY06, the Agency was able to extract data, create reports, and export data into different software tools. The result was greater clarity for executives, and a more effective budget.

Return on Investment

The performance management program at DCMA is still a work in progress. The experience to date has been positive and justifies the expenditure of effort and capital, but it is premature to estimate an overall ROI. However, here are some preliminary results:

- Indirect costs have been reduced by 20 percent by consolidating the major commands from 68 to 46 (there were 144 at one time) and by adopting a risk-based management approach. When management can safely ignore less risky items, they avoid unnecessary work.

- Each year, the mandate is to provide a three percent increase in efficiency, so extra funding for new programs must come "out of hide." DCMA's labor cost system metrics and analytics have documented true productivity increases, but the organization is concerned that at some point, most of the available gains will have been achieved. DCMA will rely on the comprehensive performance management system to take productivity and prioritization to the next level.

At a macro level, there has been a steady increase in the ratio of unliquidated funds managed per FTE, with significant increases during the implementation of the per-

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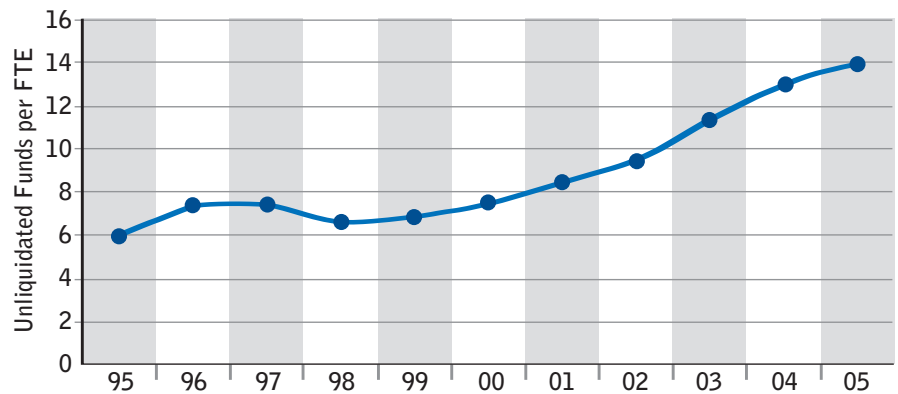
Figure 1

formance management program. This is shown in Figure 1.

There is one specific area where DCMA calculated benefits in a straightforward, compelling fashion. The system lets DCMA establish more accurate and tighter performance standards. In Aircraft Programmed Depot Maintenance (PDM), unanticipated findings occur routinely, such as corrosion. For example: upon finding an unanticipated condition of corrosion, a contractor will prepare an "over-and-above" work request. The contractor estimates 20 hours to repair the condition; but DCMA's historical data indicates that it should take only six hours. At one facility, DCMA saved enough money using this process to allow the Navy to induct three additional P-3 Orion aircraft for major PDM overhauls.

Two important lessons

You get what you measure, so plan carefully. Unintended consequences can be painful. DCMA found that certain metrics, meant to influence behavior one way, can lead to other behaviors. Or, metrics without a control metric can lead to unforeseen losses of time or money. For instance, a metric to deliver zero defects is valid; but without a metric measuring time spent in inspections, you could create untenable bottlenecks in your supply and distribution.

DCMA also learned that training on new software applications must be accomplished just prior to rollout. Knowledge retention erodes rapidly unless put to use soon after the training has been completed. Even more importantly, users should be trained on how to better do their jobs with the new system, rather than how to operate specific features of the system. Don't teach users how to access data, establish thresholds, and create triggers. Teach them, instead, how to create a trigger-based report for projects missing a milestone date. The end result from such task-oriented training is that the training will be more memorable, and hence more effective.

WHY DCMA CHOSE COGNOS

DCMA began using Cognos business intelligence tools during the second half of the 90s. There were early successes with BI, creating a loyal user base. However, the tools were used as point solutions, and competitive cost issues arose. As a result, the agency began moving to other solutions. However, a new, comprehensive analysis was made in September, 2003 of the Agency's business intelligence, reporting, and performance management needs, and Cognos was selected to be the standard solution.

Two principal factors drove this decision:

- Cognos was recognized by industry analysts and customers as the leader in reporting with its ReportNet product, as well as in the new category of Corporate Performance Management (CPM), with its Metrics Manager product. These products were designed and developed to integrate seamlessly with Cognos' BI products. Cognos had also entered the Enterprise Planning (EP) space, with its acquisition of Adaytum. In short, Cognos offered the most comprehensive platform of integrated BI, reporting, and CPM capabilities.

- Second, Cognos displayed the willingness and ability to work with its partners to help DCMA achieve business success. This was important to the agency, because DCMA knew that the fundamental management changes required could only be accomplished through a joint effort among the agency, its vendor, and its systems integration partner, BearingPoint.

GOING FORWARD

More Comprehensive Use of EP

The Cognos EP tool was intentionally left for the final stage of DCMA's performance management implementation. It was felt that the other tools—particularly ReportNet and Metrics Manager—would yield more immediate benefits (the proverbial 'low hanging fruit'). DCMA also determined that institutionalizing the use of reporting and analysis tools across the organization would let it introduce a more quantitative and analytic approach to management. This would provide a foundation for the analytic approach to budgeting and planning that EP provides.

For example, DCMA believes it is necessary to capture and analyze the cost of contract management by type of contract, as 'type' is very closely linked to contract complexity. Once you track and measure performance in this fashion, a parameterized approach to budgeting becomes feasible. It lets you apply a small set of budget assumptions to many programs, greatly expanding the ability to evaluate multiple budget scenarios.

DCMA believes that as EP is implemented and integrated with Metrics Manager, ReportNet, and the BI tools, it will close the management cycle: plan and budget, operate, measure and analyze; re-plan and re-budget. Jim Russell looks forward to the ability to "track and analyze actual performance in real time, to track 'funded' and 'unfunded' programs, to model and balance future needs and resources, and to share these functions and tools across the full Agency."

More Comprehensive Metrics

Developing actionable metrics in all categories is another area that DCMA emphasizes as it moves forward with its performance management program. These categories include Balanced Scorecard categories, the DoD Risk categories, and more. The following is a notional example that illustrates the thinking.

- There is a metric for the "sustained negotiation savings." It tries to identify the savings created by either DCMA's performance on its own or through its help to other DoD organizations in price negotiations. In essence it answers how close the negotiation came to the 'ideal' price determined in advance by DCMA. Using this metric, DCMA will be able to improve its price/cost analysis skills and achieve better results for its customers, thus not just reducing cost but also improving quality and speed.

- Other metrics track issues around "engineering change proposals." These metrics support better management of military contracts, so that contractors deliver what was promised, without reliance on deviations to cover mistakes or miscalculations. Was a change required because of a materials shortage causing a substitution? Did the underlying requirements change? Was the contract written ambiguously so that the contractor, inadvertently or otherwise, submitted an offer that was unrealistic from the outset? "Problems" like this often result in waivers or deviations to accommodate non-conformance after the fact. These metrics may also help address what Mike Williams calls the 'circular changes monster,' where even if customers don't request new features on their own, contractors sometimes make suggestions that customers adopt and feed back to the contractors as "requirements."

Such metrics stimulate management discussion about performance. DCMA executives feel that constant performance improvement is sustained with a comprehensive measurement and analysis program. This performance system collects performance data at a detailed level, reflecting the Agency's business. The Cognos Performance Management suite provides this context in a rich, user-friendly environment

SUMMARY

Mike Williams proudly states that, although the Performance Management program at DCMA is still a work in progress, "DCMA has become the leader within DoD in this whole area, and DoD is the leader within the federal government."

Jim Russell adds, "Defense is more like an economy than a business. Our challenge at DCMA is to be able to articulate the value our business brings to that economy. Effective performance management is the key to expressing that value."

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