



Performance-Based Management Missile Operations

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When Defense Contract Management Agency missile operations received notice of its impending mission review team evaluation from the commander, Navy Capt. Michael Kompanik, all involved realized it to be a monumental undertaking for the newly established contract management office.

Prior to the functional realignment, each of the new tertiary contract management offices was already implementing performance-based management. Kompanik decided not to follow the standard approach for PBM implementation. Rather, he decided to take advantage of the existing independent and diverse methodologies within the tertiary commands — a decision that is paying and will continue to pay dividends.

A Workbook is Born

In late 2006, tertiary CMO DCMA Lockheed Martin Orlando faced the challenge of implementing PBM for a wide range of programs and customers, including two separate Lockheed Martin companies. While much PBM work was complete, it did not comply with the agency's latest PBM guidance. To achieve a structured, repeatable and compliant PBM process in a relatively short period of time, as well as the simultaneous implementation by so many different teams, the tertiary CMO decided a standard cause-and-effect and analytical hierarchy process analysis tool was needed. The CMO developed an automated Microsoft Excel™ workbook for that purpose.

The PBM spreadsheets developed utilize the Excel “group” function to arrange the various company

command media processes into a hierarchical work breakdown structure arrangement. The most useful feature was probably the integration of analytical hierarchy process data into hidden areas of the spreadsheets, which eliminated the need to create and manage many different analytical hierarchy process tables. The analytical hierarchy process macros allowed the team to open a table for any process quickly, in a separate window, simply by double-clicking the process block. Once the analytical hierarchy process analysis had been completed, the team saved this data back into the hidden sections of the process spreadsheets.

Following the development of the PBM spreadsheets, work began on implementation. The CMO assigned the lead program integrators the task of training all program support teams on the tool's use. From there,

(Background) The Integration software of Lockheed Martin's upgraded M20B1 UK launcher fires its first GMLRS rocket at the White Sand Missile Range, N.M., earlier this year. (Lockheed Martin photo)



Management Successes in

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all CMO program integrators led their teams through the cause-and-effect and analytical hierarchy process analysis for their programs. The overall effort also required much command leadership and management integration. A weekly PBM status meeting, chaired by the commander, enabled the team to track each step of the PBM process for each program and document across-the-board progress on a “Mission Review Team Tracker” spreadsheet.

DCMA Lockheed Martin Orlando’s efforts resulted in the validation of 46 of 51 performance commitments — 90 percent. The MRT also identified their PBM workbooks as a best practice and posted them on the agency’s PBM Web site.

The PBM Journey

At tertiary DCMA Lockheed Martin Dallas, the PBM journey began as a response

to numerous quality problems found in outsourced products. DCMA Lockheed Martin Dallas, Lockheed Martin Missiles and Fire Control and Army Aviation and Missile Command established a joint supply management and assessment of risk team to develop an integrated supply management improvement plan.

The objectives of this plan were to improve or increase the quality of deliverable products and components; reduce program risk by improvement in waiver quantity, on-time delivery and cost of quality; and enhance horizontal communication between functional organizations and/or programs, including suppliers.

To accomplish these goals, a thorough analysis of the contractor’s procedures and command media was required. The supply management and assessment of risk team successfully identified many areas requiring

improvement and became familiar with the contractor’s command media, which the team was able to use easily to conduct the required cause-and-effect analysis that flowed from customer outcomes to performance commitments.

In April 2007, however, the team discovered that their approach was somewhat flawed. The MRT’s initial review of the DCMA Lockheed Martin Dallas data netted zero valid performance commitments. Since the employees at this CMO grasped the fundamentals of the PBM process, they immediately embarked on a painful three-day odyssey to meet the five criteria of valid performance commitments:

1. Quantifiable results
2. Influence on supplier performance
3. Based on cause-and-effect analysis
4. Includes a performance standard
5. Agreed to by the customer

When the dust settled, DCMA Lockheed Martin Dallas was able to achieve an 80 percent validity rate on its performance commitments. This would have left many commands doing cartwheels, but

for this CMO's employees, it was a hollow accomplishment because, in their opinion, it was harder and more painful than it should have been. The men and women of DCMA Lockheed Martin Dallas had expended a tremendous amount of effort, and even though they exceeded their goal, they were not satisfied.

Following the out-brief, DCMA Lockheed Martin Dallas management conducted its own root cause analysis and determined that there were two significant contributing factors: the use of Lockheed Martin's command media and insufficient oversight over DCMA PBM products before submittal for review.

Holding up the Mirror

Sometimes it is possible to be too close to a situation to see the problems. It took an external entity — the MRT — to hold the mirror up to DCMA Lockheed Martin Dallas so the personnel could see that they were not as fashionable as they thought. Lockheed Martin's command media is a very elaborate series of processes that reflect how it does business. Many members of the DCMA Lockheed Martin Dallas team knew the command media verbatim, but the MRT, as an external observer unfamiliar with the procedures, made them realize that it did not flow logically from one level to the next.

In response to this shortcoming, Susan Soule, quality assurance functional system surveillance team lead and supply management and assessment of risk team

member, took up the challenge with the Lockheed Martin supply management and assessment of risk team members and developed a process-oriented work breakdown structure from the command media. This new structure flowed much better and even pointed out some deficiencies in the command media that Lockheed Martin subsequently addressed.

DCMA Lockheed Martin Dallas' program support teams began using the new structure to conduct their cause-and-effect analysis and identified further weaknesses, which they reported to Lockheed Martin. The analysis reflected a more logical path that allowed for the generation of true causal analysis that led to performance commitments on which DCMA Lockheed Martin had an impact and the influence necessary to effect change.

The DCMA Lockheed Martin Dallas commander, Army Lt. Col. Quenton Rashid, established a procedure called the "murder board," comprising seasoned managers acting as an internal MRT to analyze performance commitments deemed by a program support team as ready to be evaluated.

The murder board ensured that each performance commitment met the five criteria and that the members of a program support team adequately could communicate each level of causal analysis that drove them to the eventual performance commitment. The boards were effective in proofing material

before sending performance commitments forward and gave teams an opportunity to practice in an evaluative environment.

Although the primary CMO and its tertiaries had all achieved better than 50 percent validity on their performance commitments during the April review, the MRT decided to conduct a follow-up due to the large number of programs in the missile operations portfolio. When the MRT conducted its re-visit in August, DCMA Lockheed Martin Dallas' results were much more effective and satisfying.

The team was able to evaluate its performance commitments in a much more logical manner, and the analysis data that they submitted spoke for itself. This time, they effectively pitched a perfect game, achieving 100 percent performance commitment validity that contributed immensely to missile operations' ability to demonstrate its PBM understanding and ability to implement PBM effectively as such that the CMO can now self-validate its remaining performance commitments.

Implementation at DCMA Raytheon Tucson

As with the other two tertiary CMOs, DCMA Raytheon Tucson's PBM implementation has not been easy since it first began in May 2005. The guidance was not clear, and the path was uncharted. The single most important tool the CMO had was the determination to get it right. DCMA Raytheon Tucson assembled a cadre of highly qualified members to chart the



From left: DCMA Space and Missile Systems Division employees Tony Geonnotti, Jimmie Nichols, Matt Leonard, Navy Capt. Mike Kompanik and Dr. Jim Schauer listening in to a PBM conference call.



The Javelin™, a Lockheed Martin/Raytheon joint venture, is a lightweight, portable, shoulder-fired, medium antitank weapon system designed to provide high lethality against all known and projected threat armor. It has been combat-proven in Operation Iraqi Freedom both in that role and as an urban assault weapon against alternative targets. (Lockheed Martin photo)

path and gather information to determine how best to meet the requirements of complying with the agency vision for PBM.

Their first step was to discuss the issues they felt were unique to the CMO, such as not having a contractor-developed work breakdown structure. In July 2006, the CMO developed a generic contractor work breakdown structure that they used to build their “golden threads,” which, in PBM lingo, means common themes. DCMA Raytheon Tucson’s first attempt was mildly successful with the MRT validating 14 out of 18 performance commitments presented — 77 percent. Based on the MRT’s feedback, the CMO was not satisfied with the generic work breakdown they had generated.

As a result, DCMA Raytheon Tucson went back to the drawing board and used the contractor’s integrated product development system to establish a much more robust work breakdown structure, which allowed more options to perform meaningful analytical hierarchy process

“golden thread” analysis. Using this methodology, the CMO was able to export this process to DCMA Raytheon Louisville and train the DCMA Boeing St. Charles office in developing a robust work breakdown structure based on Boeing’s own system. These efforts paid off with the CMO catapulting their percentage of valid performance commitments from 77 percent to 97 percent in 90 days.

DCMA Raytheon Tucson’s path forward is to continue validating performance commitments for the remaining programs using an internal review board and tracking the effectiveness of the metrics validated to ensure they are engaged at the most strategic influence points.

Lessons Learned

In the beginning, missile operations’ various approaches and strategies to meet the agency’s PBM requirements consisted of some very diverse and, in some cases, fragmented processes. However, as missile operations employees went through the

review process with the MRT, a golden thread emerged: without a solid understanding of a contractor’s work breakdown structure, the analytical hierarchy process analysis will not produce the most strategic influence points necessary for effective PBM.

The CMO commander says, “PBM is a journey, not a destination,” and the journey requires various maneuvers to master the course. Kompanik believes the CMO is on course: “We have mastered the fundamentals, we are confident that we are headed in the right direction and that we are able to make any necessary adjustments along the way on our PBM journey. From the missile operations perspective, our PBM success lies in the diversity of our command (Dallas, Orlando and Tucson), the commitment of our management team and, last but certainly not least, valued feedback from the other key member of the PBM team — the mission review team.”