ASSESSMENT OF SUCCESSFUL PERFORMANCE-BASED LOGISTICS EFFORTS

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INTRODUCTION

The Department of Defense's Product Support Assessment Team (PSAT) has identified substantial opportunities for improved product support inherent in the adoption of performance-based logistics (PBL) by the DoD organic logistics community. While there are challenges to establishing PBL structures, the PSAT recognizes that the benefits for the organic logistics community, in terms of increased availability and decreased costs, warrant pursuit.

LMI was tasked to determine the types of actions employed in highly successful PBL arrangements that achieve performance expectations, and the common characteristics of the management mechanisms used by commercial firms to oversee and execute PBL efforts. These insights will be used to ascertain what changes are needed within DoD to successfully plan for and manage the execution of PBL strategies.

Research Approach

To determine what makes PBL strategies successful, we gathered information about the structure and content of successful PBL arrangements. We reviewed the roughly four dozen programs nominated by the military services during 2005–2008 for the "Excellence in Performance-Based Logistics" award program. We then selected candidate programs for study based on our desire to include a mix of ground, aircraft, and ship systems, subsystems, and components. Table 1 lists the programs interviewed by LMI.

Table 1. Programs Interviewed for this Project

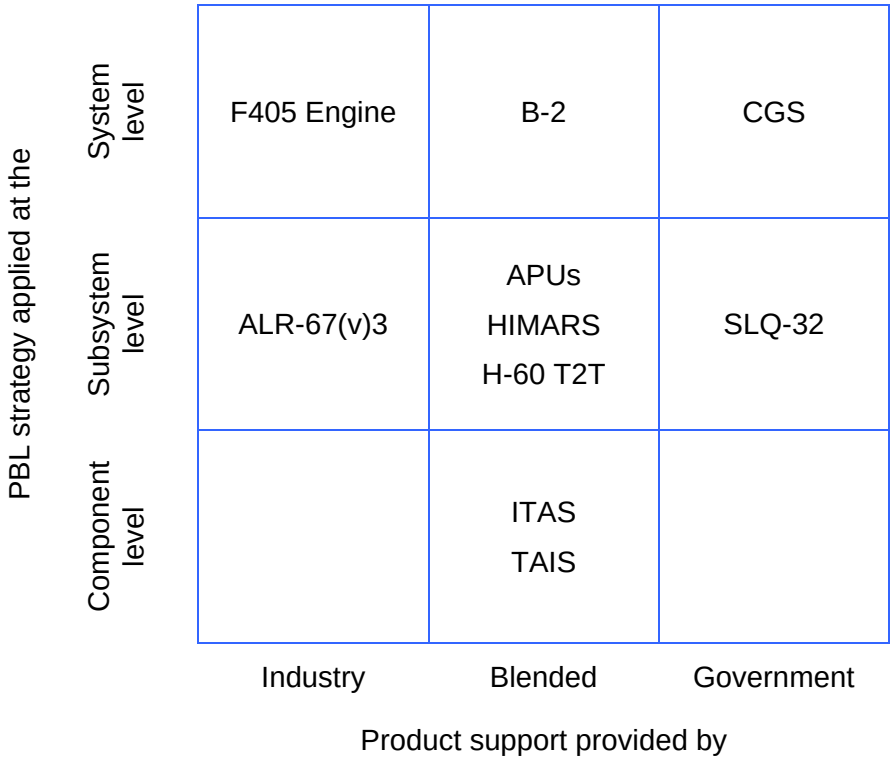
Aircraft systems	
Air Force	B-2
Aggregations of aircraft subsystems and components	
Navy	H-60 Tip to Tail (H-60 T2T)
Aircraft engines	
Navy	F405 Engine
Discrete aircraft subsystems	
Navy	ALR-67(v)3 Radar Warning System
Navy	Auxiliary Power Units (APUs)
Shipboard subsystems	
Navy	SLQ-32 Surface Electronic Warfare System
Missile subsystems	
Army	Improved Target Acquisition System (ITAS)
Army	High Mobility Artillery Rocket System (HIMARS)
Ground-based command, control, and communications (C3) systems	
Army	Common Ground Station (CGS)
Army	Tactical Airspace Integration System (TAIS)

LMI conducted structured interviews with government and contractor personnel in organizations performing the functions of product sustainment manager (PSM) or product sustainment integrator (PSI) for the programs selected. A synthesis and assessment of the information obtained from these interviews follows.

Product Support Overview

The PSAT has devised an “options framework” that provides program managers with a decision-support tool for the selection of the most appropriate product support approach. Information obtained in the course of the interviews permitted us to characterize the programs reviewed in an array that is analogous to the PSAT’s Decision Matrix for Product Support—Options Framework. Figure 1 reflects this portrayal.

Figure 1. Placement of Programs in the Product Support Options Framework



The PBL strategies for the B-2, APU, and H-60 T2T programs incorporate depot-level maintenance public-private partnerships. The engines for the B-2, however, are not part of the PBL strategy; they are managed and repaired organically using traditional sustainment strategies.

For HIMARS, ITAS, and TAIS, the subsystems and components covered by the PBL strategy are managed and repaired by the original equipment manufacturers (OEMs). The carriers, power generators, communications equipment, and other common items are managed and repaired organically using traditional sustainment strategies.

The two programs for which product support is provided by the government—CGS and SLQ-32—rely on industry for system-specific capabilities that are not resident within DoD. CGS acquires sustaining engineering support from the OEM. About 15 percent of the depot-level maintenance for the SLQ-32 is performed by the OEMs of certain components.

The two programs for which product support is provided by industry—the F405 and ALR-67(v)3—employ product support strategies that rely solely on depot-level maintenance and repair. Maintenance tasks at the field-level are limited to "remove and replace" unit actions on the aircraft.

STUDY FINDINGS

In August 2009, LMI conducted onsite structured interviews with personnel in program management offices and the product sustainment integrator organizations of the 10 successful PBL efforts presented in Table 1. Of the programs interviewed, seven are contract PBL efforts (that is, the PSI is a contractor) and three are organic PBL efforts (that is, the PSI is a DoD organization).

PBL Management

The "day-to-day" management of PBL efforts (organic or contractor) is conducted by small (3 to 5 people) dedicated PBL teams. These teams are supported by matrix personnel (finance, contracting, engineering, materiel management, legal, etc.) who are assigned part time to the PBL effort. The PBL team uses designated performance-based metrics to manage the PBL effort, and the team works with the PSI to make changes as necessary. Performance reviews are conducted with the PSI at a defined period (e.g. monthly, quarterly, etc.) to review metrics and PBL effort status and determine if any incentives need to be awarded or penalties imposed (contract PBLs only).

Three programs in our study have government organizations as the PSI, and thus are "organic PBL" efforts: CGS, B-2 and SLQ-32. Each organic PBL effort has an agreement (variously labeled as performance-based agreement or memorandum of agreement) between the PSM and the PSI; but, unlike contract PBL efforts, the managerial oversight mechanisms for organic PBL efforts have no penalties for the lack of performance.

Common Characteristics of the PBL Efforts Assessed

One of the main purposes of the PBL study was to assess the common characteristics of successful PBL efforts. From the questionnaires collected and the answers given during our onsite interviews, we were able to assess the following common characteristics of the PBL efforts:

- Most PBL efforts use fixed price contracts,[1] with some including an additional cost-plus contract for field service representatives, training, and deployment support.[2]

[1] The Operations and Maintenance (O&M)–funded PBL efforts are fixed price incentive contracts; all but one of Working Capital Fund (WCF)–funded PBL efforts are firm, fixed price contracts.

[2] One program is considering a fixed price contract for the next phase; but currently is using a Cost Plus contact due to an inadequate funding stream for setting a "baseline."

- The OEM is a member of the product support team. To some extent, this may be driven by the fact that no program has a complete (level III) technical data package (TDP), and involvement by the OEM is necessary for detailed engineering support.

- All PBL efforts have provisions in the contract or agreement to change product support due to changes in operational tempo.

Perspective

Beyond the commonalities among successful PBL efforts noted above, contract PBL efforts incorporate certain factors not noted in the organic PBL efforts. These additional factors allowed the contract PBL efforts to be more adaptive, flexible, and effective.

- The use of an enterprise-wide approach in managing the PBL effort provides for increased flexibility and effectiveness. Contractor PSIs may look at all logistics support areas (including areas not under contract) to assess where best to apply resources to maximize output.

- A single line of accounting gives contractor PSIs the flexibility to apply funding where it is needed to maximize product support.[3]

Elements of Success

Based on our discussions with PSMs and PSIs, the following factors are necessary for PBL efforts to be successful:

- Commitment of departmental headquarters, flag-level leaders (for both acquisition management and logistics communities), and the warfighter to pursuing a PBL effort.

- Buy-in by all stakeholders (program office, warfighter, PSI, etc.).

- PSIs need appropriate metrics and necessary procedures for the management of product service providers (PSPs) to meet changing operational requirements and optimize the support provided.

[3] However, the programs that rely on O&M funding, were typically required to use multiple lines of accounting and had less flexibility than those programs that utilized a WCF.

Outcome-Focused Materiel Management

The PBL efforts we reviewed exhibited a common approach to materiel management; they focused on outcome attainment, not inventory management. The specific desired outcome differed among programs, and ranged from availability to surrogate logistics performance measures that contribute to availability attainment. The techniques employed to achieve this focus were equally varied:

- Incorporating reliability improvements to reduce demand frequency
- Installing modifications to standardize configuration, thus reducing inventory breadth
- Relying on express shipments to reduce field-level stockage requirements
- Continually updating demand forecasts with current usage information
- Synchronizing the management and distribution of parts in order to preclude depot-level maintenance awaiting parts (AWP) occurrences
- Procuring long-lead-time parts and components in advance of demand to preclude issue denials and backorders
- Using interdisciplinary integrated product teams (program office, warfighter's representative, PSI, OEM, PSPs) to formulate and oversee a PBL effort and enable complete issue determination and resolution.

Several of the programs also cited management techniques to integrate depot-level maintenance into the outcome attainment focus:

- Streamlining repair processes to minimize depot turn around time (TAT)
- Inspecting carcasses and ordering repair parts before induction, thus enabling synchronized parts management and minimizing TAT
- Scheduling depot inductions to optimize repair cycle time (RCT).

WAY AHEAD

Critical Questions

In Phase II of this study, we will conduct a workshop with the appropriate officials from the Office of the Secretary of Defense, the military services, the Defense Logistics Agency, and industry to address the following questions:

- What prevents the organic sustainment infrastructure from undertaking the types of innovative actions that have been successfully employed in contract PBLs?
- What constrains the organic sustainment infrastructure from adopting managerial mechanisms typically found in contract PBLs?
- What changes must be made—and by whom—to rectify this situation?

The workshop must focus on the role of an organic PSI in arranging for and overseeing the delivery of the core product support capabilities; that is, maintenance, materiel management, distribution, and sustainment engineering.

Challenges to Implementing Organic PBL Efforts

Many of the challenges associated with establishing organic PBL efforts that are as successful as contract PBL efforts reside in the financial arena. However, other challenges are the result of policy, procedure, and culture. Areas for workshop discussion include the following:

- Organic PBL efforts using an enterprise-wide approach
  - Does the government have expertise in enterprise-wide review and enterprise-wide change?
  - Can the government move resources to areas of need (e.g. single line of accounting)?
  - Is funding of long lead items possible?
- Outcome-focused organizational structures
  - Can we replace functional stovepipes with system-specific stovepipes?
  - Can we employ the concept of virtual organizations?
  - Should PSIs be located in program management offices or materiel commands?

- Incentives for organic PBL efforts
  - What are the organizational incentives?
    - Financial
    - Other
  - What are the workforce incentives?
- Control of organic PSPs' performance and costs
  - How can we manage performance? Current system uses agreements (PBA or MOA) between commands. If PSP performance is below standard, then the issue is elevated to next higher level of command to rectify.
- Control of "price" charged by a PSP.

SUMMARY

The programs we reviewed for this assessment of successful PBL efforts provided a good mixture of ground, aircraft, and ship programs, as well as system, subsystem, and component applications of PBL arrangements. We included both organic and contract PBL efforts in the review.

This broad spectrum of PBL strategies allowed for a thorough range and depth of PBL data points. Analysis of the data identified the characteristics of successful PBL efforts, and allowed us to note additional attributes of contract PBL efforts that may be lacking in organic PBL efforts. However, for organic PBL arrangements to augment their programs with similar attributes, government policy, procedure, and culture would need to change.

Organic PBL efforts are successful; however, organic PBL efforts are not as adaptive, flexible, and effective as the contract PBL efforts because of various uniquely organic constraints and challenges. If DoD is to benefit fully from the increased availability and decreased costs that result from PBL strategies, then these challenges to organic PBL efforts need to be removed or relaxed.