

Keep Your End Customer In Sight

Performance Based Logistics brings end customers into focus and aligns your supply chain with these key buyers.

BY KATE VITASEK, STEVE GEARY, JERRY COTHRAN, AND STEVE RUTNER

CAR OWNERS WHO WANT RELIABILITY without the aggravation of having to service and repair the vehicle themselves find bumper-to-bumper warranties an attractive option. Similarly, some enterprises need total service support over the full life of key products. In the medical industry, for instance, high-end supplier contracts provide round-the-clock support services for expensive machinery such as MRI systems.

Another approach is Performance Based Logistics (PBL), which is in essence a bumper-to-bumper warranty for the supply chain. Pioneered by the U.S. military, PBL is a support strategy for the total life cycle of a product. But it goes deeper than lifetime performance guarantees. PBL enables you to look beyond your immediate customer, and to align each link in the chain with the needs of the end user.

The U.S. Department of Defense (DoD) has adopted PBL as its preferred method for supplier support, and is reaping substantial performance improvements and cost reductions. These military applications are opening the door to the wider use of PBL in the commercial world.

Holistic approach

In military applications of PBL, instead of paying a supplier for discrete support services such as spare parts supply, repair and technical support, the DoD pays for weapon system performance over the entire life of the system. The ultimate goal is to increase operational readiness while minimizing support costs and required logistics footprint. PBL buys outcomes — not individual parts or services.

If you are a prime contractor for, say, a military aircraft, instead of expecting a steady stream of profitable, risk-free and cost-reimbursable contracts for spare parts, you are expected to maintain the aircraft in mission-ready, serviceable condition, no matter what it costs, and be paid not for the work done on the airplane, but for the work done by the airplane. If the aircraft flies, you earn a profit; and, if it meets specified availability targets, you are awarded incentive bonuses. If the plane is idle, you earn little or no profit.

Virtually every new major DoD acquisition system, such as the F35 Joint Strike Fighter, is being designed with the full expectation that active service support will be under a PBL construct. PBL has been implemented at the entire weapon system platform level, at the major subsystem level, and at the component level. Today there are

nearly 200 PBLs in place across all branches of the military.

From a supply chain perspective PBL has, for the first time in the history of DoD support contracting, aligned the interests of each link in the chain with the end-user — the war fighter. The very activities that drive supplier objectives (increased profit) now create positive benefits for the customer (better performance).

For the contractor, PBL is an opportunity to exercise greater flexibility in deciding how support is provided, and to ensure cash flow stability through long-term contracts. The new approach also drives increased revenue by rewarding contractor investment in improving support processes, rather than just selling individual parts or services.

Making PBL work

In PBL applications the government specifies the required weapon system performance outcomes and enters into a contract with a Product Support Integrator (PSI), typically a large defense contractor, to manage all support activities and providers. If the PSI meets expectations, it is rewarded with financial incentives such as performance bonuses, gain sharing bonuses, or extended contracts.

Recent changes in government statutes covering performance of depot repair workloads have facilitated the public-private partnerships that are a key component of successful PBL strategies. In these partnerships the contractor is able to contract back with the government for skilled labor at a low cost, in effect making the government both a customer and a supplier to the contractor. This relationship provides skilled labor at a lower cost to the contractor, and ensures compliance with the laws governing performance of depot repair workloads.

Including the DoD as a supplier also requires government support functions to comply with the overall performance standards laid down in the PBL contract, and hence to take a more holistic view of weapons support.

The benefits are increasing as the PBL methodology matures. There are four recognized “levels” of PBL strategy implementation. Stage 1 is support at the component level (e.g., aircraft tires); Stage 2 major subsystem level; Stage 3 weapon system platform level; and Stage 4 guarantees mission availability at the system level. The maturity model not only serves to classify the varying levels of PBL implementation, but is a tool for program managers in charting a path to

CHANGE INCENTIVE

If your inventory excess and obsolescence rates can run as high as 50%, how can you slash these levels without jeopardizing customer service? A major software company did it using Performance Based Logistics.

In the software business, matching supply with demand is notoriously difficult. Frequent product revisions make the job even tougher. And yet, missing a peak-season selling opportunity or product launch is disastrous because the margins are so high. A typical product costs less than \$5 to make, but software applications can sell anywhere from \$50 to several hundred dollars.

To help solve the problem, one software giant turned to a PBL agreement with its outsourced contract manufacturer. Prior to the PBL agreement, the company operated under a traditional “push” based supply chain. Owing to the uncertainty of the market and the short lifecycle of its product, the company would typically purchase upfront 80% to 100% of the product it needed for an entire season. Fifty percent would be pushed to the retailers for the initial launch and the balance would sit in finished goods inventory safety stock to enable a quick replenishment response if needed. If the demand forecast proved too low the company would initiate a second, third or even fourth production run.

Under this model the contract manufacturer would receive a build plan for how much product to make. It was allowed 14 days to make a new product, and five days to make a replenishment product or complete a revision.

The manufacturer got paid if it met its service agreement targets, regardless of how much product actually sold. Addi-

tionally, if the product is wildly successful it could charge a premium for expedited services, and earn a fee to manage returns and dispose of obsolete inventory. In other words, the manufacturer had no vested interest in effectively managing obsolescence. Its fill rate was a high 99%, but the average annual obsolescence rate across the products surpassed 30%.

Consequently, the software company introduced a new model. It still provided the contract manufacturer with a forecast and an initial shipping plan for delivering product to stores. And it continued to ship 50% of the total volume it expected to sell for initial launches. However, after the initial launch, all responsibility for keeping shelves stocked was transferred to the contract manufacturer. In return, the contractor was able to earn a hefty premium if it achieved a 98% on-time and complete shipping rate within 48 hours, provided it guaranteed to keep obsolescence rates below 5%. Also, the contractor was financially responsible for excess inventory.

The contract manufacturer changed its “push” based production and distribution model to a “pull” based, build-to-order model. By not having to support huge production runs it was able to dedicate some capacity to replenishment. The contractor’s true manufacturing cycle time was two days (versus the five-day cycle time in its contract), and it could make more economically sensible production decisions. While the cost per unit went up slightly, the manufacturer increased its margins, maintained a 98% service level rate at the new 48-hour cycle time, and cut inventory to less than 7% – a whopping reduction of 27%.

extend their PBL strategies to higher levels and broader scope.

A significant challenge is devising the appropriate contracting strategy. Generally, the objective is to achieve a Fixed Price contract; it is a natural fit for buying designated performance outcomes at a predetermined price. However, in reality it is usually necessary to begin with Cost Reimbursement contracts in the early phases of PBL implementation, while the cost and resource baselines are maturing to the point where appropriate incentivized metrics can be specified and pricing risk has been minimized.

For smaller scope PBLs (i.e., component and subsystem level) it may be possible to start with a Fixed Price contract. For example, one common approach for aircraft engines is a firm fixed price contract with “time on wing” as a top-level metric. Under this model, the contractor receives incentive bonuses for minimizing engine removals, which means the aircraft spends more time in the air and not in the repair hanger.

The pay back

The biggest winner in PBL military contracting is the war

fighter. In a recent General Accounting Office audit, every PBL program reviewed achieved or beat desired performance targets.

In 2005 the U.S. government introduced awards for outstanding achievements in the use of PBL. At the component level, the award went to the U.S. Navy for the Auxiliary Power Unit (APU) Total Lifecycle Support program. APUs provide initial electrical power for aircraft; without this unit a plane has no source of electrical supply and cannot function. With the implementation of PBL, parts availability increased from 65% in 2000 to 97% today, and spares inventory levels decreased 25%. The agreement is estimated to save \$70 million over the life of the 10-year contract.

At the sub-system level the GE F404 Aircraft Engine was the winner. The GE F404 engine powers the U.S. Navy’s frontline fighter plane the F/A-18 Hornet. The Navy partnered with General Electric Aircraft Engines in a 9 1/2-year fixed price agreement that not only reduced repair turn time from 120 to 47 days, but also raised component availability from 50% to 92%, which in turn reduced the fleet total cost of ownership by \$79 million.

At the system support level, the award went to the PBL team of Lockheed Martin and the U.S. Air Force for their Total System Support Partnership program involving the F-117 Nighthawk. The basis of this five-year contract with an optional three-year extension, implemented in 1998, is a cost plus incentive fee/award term contract. One major incentive is a 50/50 cost share ratio that divides the cost/profit between the government and Lockheed for cost over- or under-runs. This PBL contract has been responsible for \$47.5 million in savings for the government to date.

Commercial applications

PBL is a logical extension of traditional supply chain practices, making use of traditional skills and applying them in a new way. A commercial practitioner may consider applying some of the elements utilized in PBL, and achieve substantial improvements in supply chain management. Consider:

- » Expanding the scope of your planning efforts to explicitly address the requirements of your customer's customer, and construct a demand driven supply chain. A real-time data-sharing environment, spanning beyond the four walls of each individual participant in the network, can support this effort. Including your supplier's supplier in these efforts also puts you at the head of a supply chain that is driven by demand. Synchronize schedules frequently, and combat bullwhip up and down the chain through active intervention. For example, if your supplier sees an unexpected blip in demand, intervene to clarify whether this is a temporary change such as a safety stock adjustment or a shift in supply strategy.
- » Aligning compensation streams from your customer, and compensation streams to your suppliers, against a single set of commonly understood and visible performance measures. You get what you pay for; make sure that all performance incentives are mutually supporting. For example, if a third-party logistics services provider moves your freight, a good performance metric may be the cost-per-pound of goods transported by the 3PL. But if a critical piece of equipment goes down, bringing production to a halt, your immediate need is for a replacement no matter what the cost-per-pound is. Make sure that this contingency is built into contracts to

avoid costly disagreements over misaligned performance measures.

- » Aligning your service delivery processes to the customer, breaking functional silos and tailoring your service offerings to the needs of your specific customers, not the general marketplace. One size never fits all. PBL involves putting specific service level agreements in place with each participant; reengineer your business processes to make sure that you can support them.
- » Understanding your core competencies and relying on other service providers on the team to deliver the best-blended capability to your customers. In PBL, the basis for competition is the power of your network; the strength of the portfolio of capabilities. Apply portfolio management principles to the service delivery strategy. For instance, the owner of a fleet of aircraft decided to outsource support services to an external specialist supplier. The supplier lacked the physical infrastructure to cover the owner's needs and had to decide how best to acquire it. The company decided to sub-contract the support work, with the exception of IT, which it kept itself, to one of the owner's competitors. The point is that it would have been impossible for the owner to take this cost-effective route. ♦

Kate Vitasek is Managing Partner at the consultancy firm Supply Chain Visions. She is lead researcher and faculty member at the University of Tennessee's PBL Program.

Steve Geary is a Partner at Supply Chain Visions, and is on the faculty at University of Tennessee's Aerospace and Defense Clearinghouse.

Jerry Cothran is Program Director, Performance Based Logistics, at the Defense Acquisition University, Fort Belvoir, Virginia. He has responsibility for development and continuing assessment of all PBL materials and PBL support for the university.

Stephen Rutner, Ph.D. Lt Col Steve Rutner, United States Army Reserves, is currently deployed in Kuwait. When not in uniform, Dr. Rutner is an Associate Professor of Logistics and Intermodal Transportation at Georgia Southern University.

The authors can be reached at SupplyChainEditor@larstan.net

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