Performance-Based Logistics – The Next Big Thing?

Summary

In recent years, the Department of Defense (DoD) has adopted a creative approach for procuring logistics support for its weapon systems, one that has been highly successful in stretching the DoD's support dollars and that also holds great promise for applications to the private sector.

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Introduction

In recent years, the Department of Defense (DoD) has adopted a creative approach for procuring logistics support for its weapon systems, one that has been highly successful in stretching the DoD's support dollars and that also holds great promise for applications to the private sector.

The new approach, dubbed performance-based logistics (PBL), has been a key driver in helping the DoD to deliver higher performance and lower costs in procuring logistics support for its weapon systems.

The DoD has credited PBL with a long string of successes, ranging from logistics support for simple parts such as tires to subsystems such as engines — and in some cases, to full weapon systems.

At its core, PBL is a new collaborative business model designed to align the interests of both the client (e.g., the DoD) and the logistics service provider.

Under a PBL agreement, the client specifies his goals or desired outcomes, and the logistics service provider then gets paid according to how well it succeeds in delivering those outcomes.

Under the more traditional agreements, logistics service providers are paid on a transactional basis — e.g., per phone call or per order fulfilled.

Under such agreements, the client usually gets what it has contracted for — but not necessarily what it wants to achieve.

The goal of a PBL is focused on value creation and achieving desired outcomes – not simply in achieving service level agreements or squeezing the outsource provider for the lowest price. Companies that are considering PBLs should realize that they are entering into de facto partnerships with their logistics services providers and that these partnerships cannot be created overnight. When properly designed, a PBL contract will actually diminish the risks borne by both partners. Some critics claim that PBL will be ineffective if applied to the private sector. We strongly disagree. Indeed, we believe that once supply chain executives begin to understand the inherent advantages of PBL, they will wholeheartedly embrace it.

Summary and Overview

In recent years, the Department of Defense (DoD) has adopted a creative approach — dubbed ***performance-based logistics*** (PBL) — for procuring logistics support for its weapon systems.

The DoD's reliance on PBL has grown dramatically in recent years. For example, the U.S. Navy has seen its use of PBL soar from $35 million in 1998 (the first documented year of application) to over $800 million in 2006. In recognition of PBL's success in delivering higher performance along with lower cost, the DoD issued a policy directive on October 2, 2006 stating its intention to extend PBLs to all of its major procurement categories.

In effect, PBL is designed to align the interests of both the client (e.g., the DoD) and the logistics service provider. At the outset, the client and its service provider must come to an agreement about desired performance outcomes, and the client's payments to the supplier will then be based on the latter's success in delivering those outcomes. Under this arrangement, the client does *not* pay for unit transactions of such support services as warehousing, transportation, spare parts, repairs, or hours of technical support.

Instead, a PBL contract specifies that logistics service providers will be paid based on how well they enable the client to achieve its stated goals or objectives. And when they do succeed, service providers will be rewarded with increased profits, longer-term contracts, and the opportunity to earn even greater profits through a variety of incentives.

Companies that are considering whether to embrace PBL contracts face many challenges. For instance, the two parties have to agree on what the client's goals and objectives are and on what the logistics services provider's rewards should be when and insofar as the client achieves those ends. They also have to agree on what metrics will be used to assess compliance, who will measure them, and how they will be measured.

Despite the potential rewards, some service providers are apprehensive about PBL, fearful that the new model not only entails greater overall risk but also saddles them with the lion's share. But thought leaders on both sides disagree. Research conducted by the University of Tennessee's Aerospace and Defense Clearinghouse Program reveals that PBL is not a zero sum game and that the total risk is actually reduced through improved collaboration, thereby eliminating uncertainty and the associated drag on effectiveness and operating costs.

Popular as it is with the DoD, PBL has made few inroads into the private sector. In fact, we know of only a handful of cases where two private parties have entered into a PBL contract. But we suspect that as supply chain executives begin to understand the inherent advantages of PBL, they will wholeheartedly embrace the concept.

Alignment: Key to an Effective PBL Contract

Traditionally, the DoD has purchased logistics support from the private sector using a transactional model that usually involves cost-plus pricing to ensure the lowest cost per transaction. Under cost-plus pricing, service providers are paid for every transaction — regardless of whether it is needed. Indeed, the less efficient the entire support process, the more money the service provider makes.

With cost-plus pricing, the client usually gets what it has contracted for — but not necessarily what it wants to achieve. What the client wants is an efficient, low-cost total logistics solution. Cost-plus pricing may well yield the lowest cost for individual transactions; yet the entire logistics support system often ends up being inefficient and overbuilt, with each touch-point in the supply chain having been "gamed" to maximize the logistics service provider's profit.

The basic problem with the transactional model is that it fails to align the service providers' interests with the DoD's desired outcomes. Such misalignment also occurs frequently when private companies contract with third-party logistics (3PL) providers. Suppose, for example, that the client (i.e., the outsourcer) were to forecast its sales too high or too low. One reason for this undesired outcome is that a transaction-based model is geared to the volume of transactions: the greater the number of transactions, the greater the service provider's revenue — and profit.

Inherent in the transactions-based model is a disincentive for the service provider to reduce transactions. Consider, for example, a typical contract for a company — the Whiz Bang Widget Company — that has outsourced the fulfillment of their product. Let's assume that Whiz Bang has contracted with ABC 3PL to provide call center and fulfillment services for its product-line. And let's assume, in turn, that Whiz Bang has agreed to pay ABC 3PL:

- $1.00 per minute for each call
- $3.00 for each order fulfilled
- $2.00 for each expedited order
- $15.00 a month for each pallet of inventory stored

- $2.00 to manage each return
- $1.00 to scrap and destroy damaged goods

Under this type of agreement, ABC 3PL gets paid more, the worse the supply chain performs. If Whiz Bang has forecasted too much, ABC 3PL will make more money by storing the excess inventory. And they will be paid a scrap fee to destroy the product when it becomes obsolete. Alternatively, if Whiz Bang has forecasted too little, ABC gets to charge an expedite fee surcharge. And when ABC's products are returned, they make even more money. In essence, a traditional transaction based contract provides ABC 3PL with an incentive to abide by the contract, not necessarily to do what's good for Whiz Bang.

But Will It Play in Peoria?

One frequently asked question is whether the PBL approach, successful as it has been for the DoD, is adaptable to the private sector. The answer is yes.

One real-world example involves a large software company. Let's call it the XYZ Company. Forecasting in the software industry is particularly challenging because of the many intricacies involved in developing and debugging new products and in the enormous push to get new products to market as quickly as possible. The XYZ Company is no exception to the rule. Its products are sold mostly through retail stores, and it is always impossible to know ahead of time if a new product will be a big hit or a big flop.

Owing to the pressure to get new products on the shelves ASAP and compounded by the high profit margins involved (most software packages cost less than $5.00 to manufacture but sell for $50.00 or more), it will come as no surprise that software companies are notorious for holding too much inventory.

Moreover, because of frequent revisions and bug fixes, software companies often face potential inventory write-offs amounting to tens of millions of dollars.

Like the rest of the industry, the software giant XYZ struggled with frequent excess inventories and huge write-offs due to mismatches between supply and demand. Under the traditional transaction based model, the supplier (a contract manufacturer) simply performed the tasks as outlined in the Statement of Work and charged a series of services fees for manufacturing, kitting, fulfillment, storage, returns management, and product scrapping. Under that arrangement, the greater the number of transactions, the more money the supplier made.

Concerned about its outsized inventory costs, however, the software giant squeezed hard on the supplier's margins, resulting in sharply lower profitability despite significant top-line revenue. Although the client's inventory costs did decline, they were still burdensomely high. As a result, neither the client nor the supplier was satisfied with the *status quo.*

After extensive discussions, the two parties agreed to collaborate and create a PBL contract. The software company defined the following desired outcomes:

- Maximize revenue from its retail sales by ensuring 98% in-stock rates for retail fulfillment with a 48 hour service level.
- Reduce its costs by holding a minimum amount of inventory needed to achieve the high in-stock rates — thereby reducing obsolescence. Whereas the pre-PBL obsolescence rate exceeded 30%, the company wanted to reduce it to less than 10%.
- Reduce overall total costs of operations by reducing non-value added activities

After reaching an understanding and agreement about the software giant's desired outcomes, the two companies developed a new PBL contract that rewarded the supplier for reducing transactions and costs while maintaining high service levels.

Under the new PBL arrangement, the software company still gives the supplier a forecast. However, the supplier is accountable for managing supply and demand and keeping production at optimal levels that are just high enough to meet demand. Rather than simply setting production levels to meet the forecast, the supplier is rewarded with incentives for producing *less* provided that it can hit the targeted in-stock rates.

For the supplier, the PBL agreement required it to assume a more proactive and accountable role in managing its customer's supply chain. Toward this end, the supplier had to switch its production model from the traditional push based approach, where production levels were set equal to the customer's forecast, to a demand-pull system.

Under the PBL approach, the supplier is rewarded for meeting his customer's specified in-stock rates. And it is also rewarded for meeting the customer's targeted obsolescence rates. When the customer launches a new product, the supplier still pushes product to the market. But now, rather than operating with huge inventory stockpiles to accommodate fortuitously high levels of demand, the supplier now operates with a much more flexible supply chain that can be adjusted quickly, up or down, to fluctuations in demand.

Under this new model, the supplier was able to better utilize capacity. It switched from huge production runs and large inventory stockpiles to short production runs and more manageable inventory levels. Hence, when the software company introduced software updates or bug fixes, it wasn't saddled with huge amounts of obsolete inventories. While the production cost per unit did go up slightly under this model, the manufacturer was able to maintain a 98% fill rate within the agreed to 48 hour window. But even more importantly, however, the software company was able to cut its inventory obsolescence to less than 7%.

It was a win-win solution. The software company was satisfied because it was no longer responsible for obsolete inventory. The contract manufacturer was happy because it was able to utilize its skills and knowledge to reduce inventory and better manage its capacity — and was rewarded with higher fees for doing so.

Successful PBL Agreements are Collaborations.

When two parties meet to negotiate a PBL contract, their goal is to design the contract so that it will be beneficial economically to both sides. Here are the four elements that we think are the critical underpinnings to a successful PBL contract:

1. Be committed to creating successful PBL collaborations.

If a PBL agreement is to be successful, both parties — the client and the outsource provider — must understand that such an agreement is truly a business-model shift. *(See Exhibit 1.)* The goal of a PBL is focused on value creation and achieving desired outcomes — not simply in achieving service level agreements (SLAs) or in squeezing the outsource provider for the lowest cost per transaction.

Exhibit 1: Be Committed to Making PBL Work

Traditional Approach	PBL Approach
Both organizations not fully committed to aligning their interests.	Key leaders within both organizations committed to aligning their interests.
Limited coordination – often a "throw the order or transaction over the fence" mentality.	True partnership mentality with desire to forge a win-win business model.
Limited understanding of the PBL business model by one or both parties.	Co-location if warranted.
	Transparency of outsourcing company vs. outsource-provider's involvement.

Source: Authors.

2. Strive to create a win-win business model.

At the core of a PBL agreement are the client's desired outcomes. The client and logistics outsource provider must work together to specify the required performance outcomes in terms of well-defined performance requirements, with quantifiable targets. Such performance requirements should describe the desired outcomes, but not how to achieve them. *(See Exhibit 2.)* It is the outsource provider's job to figure out how best to achieve them. That's what they get paid to do.

Exhibit 2: Strive to Create Win-Win Solutions

Traditional Approach	PBL Approach
Transaction-based model.	Business model based on desired outcomes.
Focused on reducing transactions costs or achieving certain SLA's.	Focused on value proposition.
Client and service provider have not aligned their objectives.	Client and service provider have aligned their interests.
Statement of Work defines precisely what tasks must be done.	Business model is designed for mutual self-interest.
	Statement of objectives defines goals, but not how to achieve them.

Source: Authors.

- Under the traditional approach, the service provider will provide a Statement of Work (SOW) that outlines in detail the various activities that it will provide. Typically, many of these activities are priced per transaction and may or may not have targeted service level agreements (SLAs) that define performance targets.
- Under a PBL agreement, the client's desired outcomes are specified in a Statement of Objectives (SOO). Such an agreement gives the outsource provider the authority and flexibility to develop innovative solutions in order to achieve the client's desired outcomes. The SOO is in effect a summary of key goals and outcomes — all of which are incorporated into the PBL agreement.

3. Develop a sound contract strategy.

A well designed PBL contract will include a pricing structure (with proper incentives) that aligns the clients' interests with those of their logistics service providers. *(See Exhibit 3.)*

Exhibit 3: Develop Sound Contracting Strategy

Traditional Approach	PBL Approach
Contract length is typically 1-to-3 years.	Contract length is commensurate with payback period for outsource provider's investments.
Pricing models are usually • Fixed price per transaction • Fixed price per transaction plus incentives • Cost-plus fixed margin per transaction. • Cost-plus fixed margin per transaction plus incentives.	Pricing models are usually • Fixed price for solution *(e.g. monthly management fee)* • Fixed price per unit or unit/usage or throughput. • Fixed price plus incentives. • Fixed fee per unit or unit usage/throughput plus incentives. • Combination fixed price for fixed costs and fixed variable fee *(per unit of unit or unit-usage)*.
Incentives are limited to gain sharing or bonuses tied to exceeding Service Level Agreements (SLAs).	Incentives often extend to award term of contract.
	Cost cutting targets are inherent in a fixed pricing model; the more the outsource provider saves, the more money they make.

Source: Authors.

Fixed-price contracts are a natural fit for "buying" specified performance outcomes, because they provide an inherent incentive for service providers to be efficient and meet profitability levels. When governed by fixed-price contracts, outsource providers will increase their profits as, and only insofar as, they become more efficient.

To allow for fluctuations in volumes, the fixed price agreements can be set on a per-unit or throughput basis. Moreover, the fixed-price models can be modified to include "volume bands" to allow for different pricing at different levels of volume.

Additionally, a well designed PBL will also offer one or more incentives for service providers to achieve the specified performance and cost savings targets. For example, when those goals are met, the service provider might be rewarded with incentives such as performance bonuses, gain sharing bonuses, or extended contract lengths.

Despite the inherent advantages of the fixed price model, the DoD has found that it is often necessary to rely on cost reimbursement (or cost plus) contracts when the detailed provisions of a PBL agreement are being negotiated. At this stage, the two parties will be working to specify the appropriate cost and resource baselines so that metrics can be developed and pricing risk can be minimized. It is imperative that both sides come to a full understanding of the baseline performance and of the cost of the existing business model.

In some cases, however, it may not be practical for two parties to enter into a PBL agreement. It would be unsuitable, for example, for a program specifying delivery quantities that are uncertain or for one where the requirements are vague, incomplete, or likely to change during the period of performance. Such situations would expose the outsource provider to too much risk — and in return would equate to very high prices for the outsourcing company.

4. Be sure that the checks and balances are in place.

A well-defined PBL agreement will include a solid performance management program aimed at driving success to achieve the desired outcomes. *(See Exhibit 4.)*

Exhibit 4: Be Sure that Checks and Balances Are in Place

Traditional Approach	PBL Approach
Often many detailed metrics / SLAs that measure specific tasks (e.g., fill rate, inventory accuracy).	Usually five or fewer top metrics with direct alignment to the vital few desired outcomes.
Metrics may not be fully defined.	Metrics clearly defined with agreed upon data sources and calculations.
Data sources may or may not be accurate and timely.	Data sources accurate and timely.
Achievement of metrics mostly reported by the outsource provider.	Transparency of outsourcing company vs. outsource-provider's involvement.

Source: Authors.

It is best, researchers have found, to have a limited number of performance metrics — five or fewer — and to have clear cut performance standards, or targets. In addition, the metrics must be clearly defined and subject to accurate, timely measurement.

The outsource provider is responsible for ensuring the quality of work performed by it or its subcontractors; the client is responsible for surveillance and monitoring. Hence, a key element of the performance management program is the ***Quality Assurance Surveillance Plan (QASP)*** for assessing the service provider's performance.

The QASP plan must be mutually agreed to and should include sampling or audits. A typical QASP addresses:

- What gets measured, when, and by whom;
- What processes will be used to identify and remediate quality issues;
- Who will be responsible for monitoring quality assurance (QA).

Quality assurance is a continuous process designed to determine whether the quality of the work performed meets or exceeds the performance standards. Its goal is to prevent substandard work, rather than identify it after the fact. The QA monitor should be someone who is independent of the work being measured, and the depth of the Quality Assurance program should be matched to the needs of the project.

In addition to the QASP, a good PBL will have a contractually defined reporting process that includes not only reporting against the desired performance standards, but also includes formal monthly or quarterly reviews.

Overcoming Challenges

While the DoD has become a devotee of PBLs, it still encounters challenges as it attempts to broaden its reliance on PBLs.

One such challenge, for example, has occurred in the DoD's efforts to apply PBL at the total system level where the number of suppliers involved in the support of even a single aircraft can be overwhelming. For this reason, the DoD has allowed program managers the flexibility to implement PBLs to components (e.g. tires) or subsystems (e.g. engine).

"Companies that want to explore a PBL business model can learn much from the mistakes of the DoD," states Jerry Cothran, recently retired Director of PBL for the Defense Acquisition University and well recognized thought leader on PBL for the DoD. Here are some of the common mistakes that occur when private companies attempt to adopt a PBL business model:

- Failing to grasp that PBL represents a paradigm shift in the business model governing business operating procedures. The two parties are shifting from a transactional based approach to a long term alignment of desired outcomes.
- ***Failing to have the right stakeholders on the team from the start.*** A common mistake is for the operations people to develop the business model and then to bring in the finance and/or contracting people towards the end of the discussions. Representatives from these departments need to be brought in from the inception so they understand what needs to be accomplished.
- Failing to change the team's mindset to look at metrics from a "desired outcome" point of view versus a "service level" point of view. Another common mistake is for the client company to choose metrics that are specific to a particular department, measuring in effect the outcome or results in terms of their impact(s) on that department. But the client's interests would be better served by metrics that address the broader questions about what would be good for the company — and not just one department.
- ***Failing to prepare an adequate baseline of the current business.*** If the service provider is going to take on additional responsibility and risk, it needs to be able to model the current solution — both in terms of current costs and performance levels.

Companies that want to explore PBL business models should understand that they are entering into *de facto* partnerships with their logistics services providers and that these partnerships cannot be created overnight. They take hard work — and lots of it. The DoD has found that it takes its service providers 29 months on average to convert to a PBL protocol.

To help facilitate the transition, the DoD chartered the Defense Acquisition University to create a five-day course designed to train key people about how to implement PBLs. But educating the key players from the DoD was only half the battle. Educating the DoD's service providers made up the other half.

Key leaders from both industry and the government asked the University of Tennessee's Center for Executive Education to create an equivalent PBL course for service providers, which was formally launched in November 2006. So great was the need for such education that industry giants such as

Lockheed Martin, Raytheon, Pratt Whitney, Northrop Grumman and Boeing all signed up to sponsor the development of the course.

Probably the most important aspect of education has been the development of joint Defense Acquisition University/University of Tennessee workshops where the key stakeholders from both sides of a particular program (the DoD and the service provider) will meet and attend a program-specific "boot camp." Here, the stakeholders will discuss, debate, and agree on the various aspects of implementing a PBL for their program. And when a team gets stuck, they will come back for specific, facilitated workshops to help them work through their challenges.

Concluding Remarks

In principle if not in practice, supply chain executives are striving to look beyond the immediate customer, to focus instead on the needs of the customer's customer. Their goal is to align the supply chain to meet the requirements of the end user, not just the next link in the chain.

PBL is a logical extension of traditional supply chain practices, making use of traditional skills but applying them in a new way. The success of PBL in one of the most difficult environments imaginable, a military force engaged in on-going operations, demonstrates that innovative and creative thinking beyond traditional spans of control is achievable.

If PBL can work for the military, it should be no less successful in civilian applications. But companies must acquire an entirely new mindset. Key features include:

- • Expanding the scope of their planning efforts, explicitly addressing the requirements of the customer's customer and crafting a demand-driven supply chain.
- • Expanding the scope of their planning efforts to include the supplier's suppliers, and putting themselves at the head of a responsive and effective demand driven supply chain.

- • Aligning their compensation streams from their customers and suppliers, against a single set of commonly understood and visible performance-outcome measures.
- • Aligning their service delivery processes to their customers' needs, breaking functional silos and tailoring service offerings to the needs of specific customers, not the general marketplace. One size never fits all.
- • Understanding their core competencies and relying on the team's other service providers to deliver the best blended capability to their customers.

While skeptics might claim that PBL has limited application to the DoD's weapon systems, we believe that the PBL business model should be considered by any company that out sources services as a way to align supply chain partners to a set of common goals. And insofar as the partners succeed in aligning their performance goals, they will also have reduced risk across the entire supply chain.

How to Implement a PBL Business Model

What's involved in implementing a PBL agreement? The Defense Acquisition University teaches a twelve-step process that it recommends for implementing PBL and a seven-step process for implementing Performance-Based Services Acquisition. For purposes of this report, we have modified both programs to be more applicable to a commercial setting since some of the steps are unique to doing business with the DoD.

- **Understand the Business**

The client must first create an internal PBL team. Its two main tasks are to understand the company's current requirements and desired outcomes and to baseline the system.

During this initial stage, it is crucial for the PBL team to educate both internal and external suppliers and generate active support for the PBL concept. It is also important to establish strategic partners who are able and willing to be good team players and to establish your company as a good team player.

The client and its service providers must aim to set attainable goals (desired outcomes) that can be substantiated with objective measures. These metrics will be used to baseline the system and to gauge whether the goals have been met.

- **Develop the Business Model**

This is the critical stage where the client's PBL team draws up a detailed business plan — also known as the Performance Based Agreement (PBA).

The PBA will include a statement of clearly defined and articulated goals, i.e., desired outcomes. It also specifies the performance metrics that will be used to gauge success, along with clearly defined rules, roles, and responsibilities for the client and service provider(s).

The PBA is similar to a Statement of Work (SOO), and it will be foundation for drawing up the actual PBL contract. The basis of the contract should lie in the prior work, and the contract itself simply formalizes the agreements between the companies involved.

- **Manage the Business**

Once both parties have signed the PBL agreement, the real work begins — execution and oversight.

The new contract should have included a performance assessment plan. Periodic performance review sessions must be scheduled, and both parties will have to compile and monitor the contractual performance metrics. Any revisions or adjustments that are needed can be made at this stage.

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