Developing a Business Case Analyses (BCA) to Evaluate Performance Based Logistics (PBL)

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What is Performance Based Logistics?

- Performance Based Logistics (PBL) is the preferred Department of Defense (DoD) product support strategy to improve weapons system readiness by acquiring a desired level of operational performance, capitalizing on integrated logistics chains and public/private partnerships. The cornerstone of PBL is the acquisition of weapon systems and equipment sustainment as an affordable, integrated package based on attaining output measures such as weapons system availability, rather than focusing on separate input measures, such as parts, training, maintenance and technical services.

- A PBL BCA provides a best-value analysis that considers not only cost, but other quantifiable and non-quantifiable factors supporting an investment decision. This can include, but is not limited to, performance, producibility, reliability, maintainability, and supportability enhancements.

Source: Defense Acquisition University PBL Toolkit

Performance Based Logistics Background

- DoD Directive 5000.1, “The Defense Acquisition System,” 12 May 03
  - PMs Shall Develop and Implement PBL Strategies That Optimize Total System Availability While Minimizing Cost
- SECNAVINST 5000.2C, 19 Nov 04
  - PBL Is The Preferred Support Strategy And Method Of Providing Weapon System Logistics Support
- OUSD(AT&L) “Implementing a Life Cycle Management Framework Memo,” 31 Jul 08
  - Continued Emphasis on PBL “with a more precise orientation on life cycle product support”
  - ”PBL is not a contracting strategy… it is indeed a strategy applicable to both private sector and DoD organic providers”

PBL BCA Guidance

- OUSD(AT&L) PBL Memo (13 Feb 02) Requires that Acquisition Programs Identify and Implement PBL Based Strategies
  - Business Case Analyses needed to support sustainment decision making

- ASN(RD&A) PBL Guidance Document (27 Jan 03) Established PBL As The DoN's Preferred Product Support Strategy
  - PBL Will Be Implemented When It…makes Good Business Sense
  - Program Manager Will…use BCA To Support PBL Decision
  - Program Team Responsible For BCA Generation
  - SYSCOM Cost Departments Will Conduct Independent PBL BCA Reviews For Programs
  - A Total Life Cycle Cost Approach Will Be Used In The Analysis

PBL BCA…

- Is Used In The Initial Decision To Invest In A Project
- Guides The Decision To Select Among Alternative Approaches
- Is Used To Validate Any Proposed Scope, Schedule, Or Budget Changes During The Course Of The Project
- Should Also Be Used To Identify The Various Budget Accounts And Amounts Affected By The Various Product Support Strategies
- Should Be A Living Document - As Project Or Organization Changes Occur They Should Be Reflected In Updates To The Business Case
- Should Be Used To Validate That Planned Benefits Are Realized At The Completion Of The Project

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Source: Defense Acquisition University PBL Toolkit

A PBL BCA Should Determine…

- The Relative Cost Vs. Benefits Of Different Support Strategies
- The Methods And Rationale Used To Quantify Benefits And Costs
- The Impact And Value Of Performance / Cost / Schedule / Sustainment Tradeoffs
- Data Required To Support And Justify The PBL Strategy
- Sensitivity Of The Data To Change
- Analysis And Classification Of Risks
- A Recommendation And Summary Of The Implementation Plan For Proceeding With The Best Value Alternative

Source: Defense Acquisition University PBL Toolkit

PBL BCAs Should Include…

- An **Introduction** That Defines What The Case Is About (The Subject) And Why (Its Purpose) It Is Necessary. The Introduction Presents The Objectives Addressed By The Subject Of The Case
- The **Methods And Assumptions** That State The Analysis Methods And Rationale That Fixes The Boundaries Of The Case (Costs And Benefits Examined Over What Time Period). This Section Outlines The Rules For Deciding What Belongs In The Case And What Does Not, Along With The Important Assumptions
- The Business Impacts Are The **Financial And Non-financial Business Impacts Expected** In One Or More Scenarios
- **Risk Assessment** That Shows How Results Depend On Important Assumptions ('What If'), As Well As The Likelihood For Other Results To Surface
- **Conclusions And Recommendations** For Specific Actions Based On Business Objectives And The Results Of The Analysis

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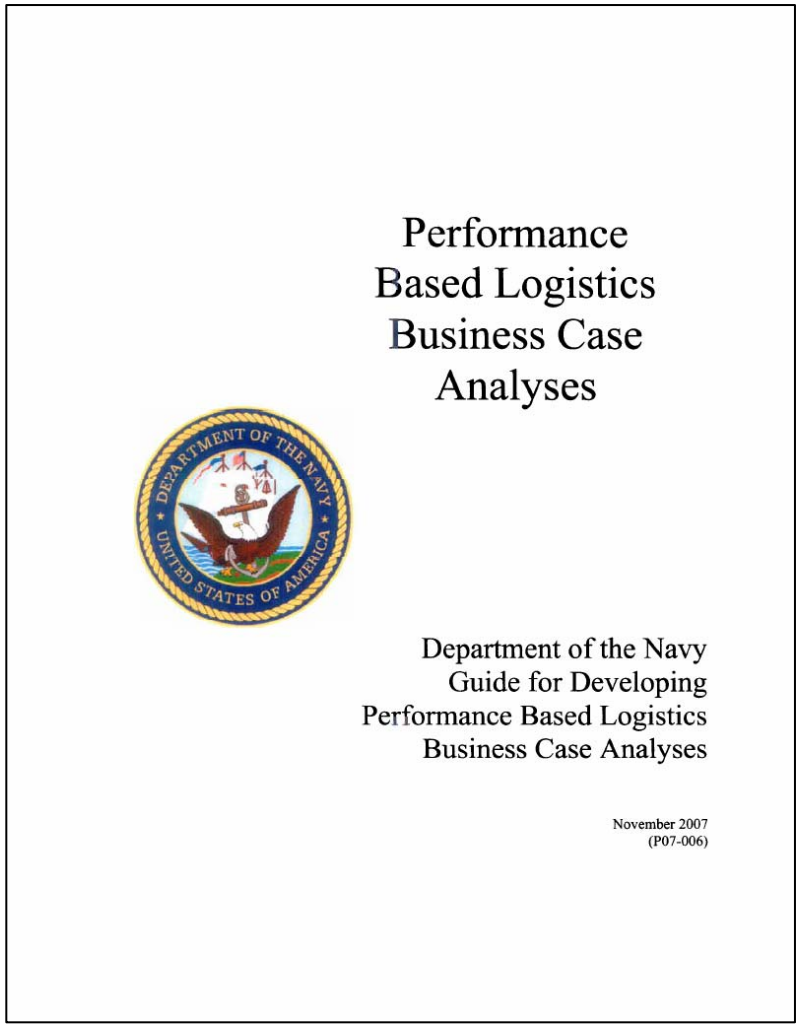
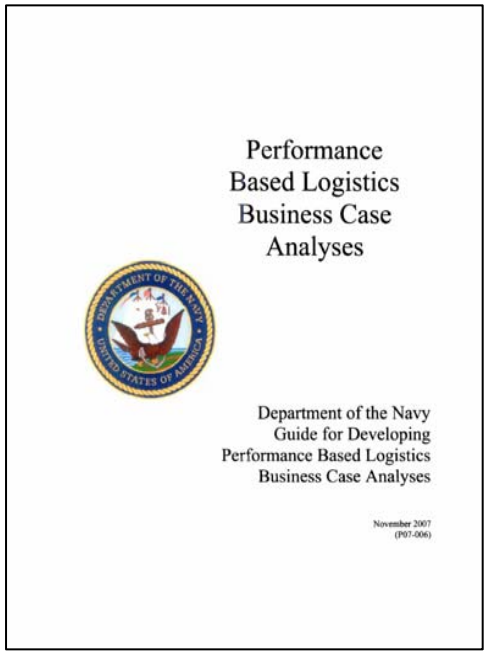
Source: Defense Acquisition University PBL Toolkit

DoN PBL BCA Guidance



- Draft Prepared by DoN Working Group
- ASN (RD&A) forwarding Memo Signed 6 Nov 2007
- Provides High Level Guidance to be used in Developing BCA
- Supports PBL BCAs For All DoN ACAT Programs
- Emphasizes Greater Communication And Cooperation Between Program Logisticians, Engineers, And Cost Analysts In The Development Of PBL BCAs
- Available at DAU PBL Toolkit Website

DoN PBL BCA Guidance



Contents:

I. Intro (Purpose, Definitions, Warfighter Req'mt, Strategy, Enablers, Issues, Supportability)

II. PBL BCA for New Acquisition Programs

III. PBL BCA for Fielded Systems

IV. Cost Estimating Structure

V. PBL BCA Data

VI. BCA Documentation Formats and Tools

VII. References & Additional Info

DoN PBL BCA Guide:
Key Aspects of DoN PBL BCA

- Independence
  - Generally, PBL BCAs Need To Be Accomplished Or Directly Supervised By Gov't Personnel.
  - Cost Portions Of PBL BCAs For Major Programs Should Be Developed And/Or Certified By Gov't Cost Analysis Organizations
- BCA Tailoring/Update
  - Initial Program Support Strategies for ACAT I Programs Shall be Developed prior to MS B
  - Detailed BCAs to be Competed as Required Prior to MS C and/or Contract Award
  - Updates at Appropriate Trigger Points Including Independent Logistics Assessments and Other Key Technical Reviews
- Follow-Up
  - Results Should be Tracked Throughout a Program's Life Cycle
  - BCA Updates with Actual Cost/Performance Data Needed Every 3-5 Years
  - Cost/Performance Data From Commercial Sources Needs to be Verified by Government Personnel

DoN PBL BCA Guide:
PBL BCA for New Acquisition Programs

- Initial Strategies For ACAT I Programs Will Be Developed Prior To MS B With Detailed BCA Completed Prior To MS C And/Or Contract Award
  - PMs and SYSCOM/Logistics Commands Responsible for Scheduling the BCA Process and Program Reviews in Support of Program Milestones

- Program Baseline Provides the Foundation
  - Immature or Limited Baseline Data Initially => Quantify Estimate Risk / Uncertainty
  - Identification of ILS Costs/Drivers At Sufficient Level of Detail to Permit Adjustment for Alternative Strategies
  - Estimation of Operations and Support Costs Must Encompass Planned System Op Timeframe & be detailed in:
    - Maintenance Personnel Requirements
    - Repair Driven Maintenance Costs at Subsystem Level
    - Major Depot Level Rework

DoN PBL BCA Guide:
PBL Planning for New Acquisition Programs

- Decisions Made During the Acquisition Process Impact Virtually Every Aspect of the Desired PBL Performance Outcomes
  - Inherent Reliability, Repairable vs Consumable, Level of Diagnostics/Prognostics, and Detailed Logistics Support Planning
  - Maint Planning Determines Levels of Sparing & ILS Elements as Well as Support Infrastructure. Level of Repair Analysis.

- The PBL BCA Compares the Costs (ILS and O&S) and Benefits (Performance) Assoc With the Alternative Approaches
  - The PBL BCA in and of Itself Does Not Define Approaches or Requirements

DoN PBL BCA Guide:
Baseline Development for New Acquisition Programs

- Investment in ILS/Spares Represents Commitment to Specific Approach for Long Term Weapon System Sustainment
- PBL Based Alternative Must at a Minimum Address:
  - Impacts on Requirements for all Logistics Elements
  - Changes in Manpower and/or Labor Hours
  - Changes in Maintenance Requirements
    - Reliability/Components
    - Depot Rework
    - Turn-Around-Time
  - Changes in Supply Management Including Impact of Labor Rates and Pass Through Charges
  - Changes in Potential Requirements for Sustaining Modifications
  - 'Roadmap' or Spiral Development System Introduction

PBL Candidate Selection

- General Instruction for PBL Candidates detailed in NAVAIRINST 4081.2A – “Policy Guidance for PBL Candidates”
  - Addresses Title 10 CORE Determination
  - Operational Analysis
  - Business Analysis
- Recommend Development & Use of a Virtual Program Office to Determine & Re-Evaluate PBL Alternatives
    - Program Office & Staff
    - NAVSUP/NAVICP/DLA
    - Depots, FST, Fleet
    - Contractor Staff (Prime and Subs) – As Needed

DoN PBL BCA Guide:
PBL BCA for Fielded Systems

- Generally, Enabling Infrastructure is Already in Place With Prescribed Maintenance Plans for Repairable Items
  - Unit Manning Requirements, Sparing, Other ILS Investment Previously Determined
  - Repair Capability and Required Support already Established
  - Sunk Costs
- Operation/Maintenance Performance Data and Cost Baseline More Readily Available – But Detail Needed
- Key Areas for Needed Performance Improvement can be identified, i.e. Low Reliability, Obsolescence, and Support Problems
- NAVSUP/NAVICP Opportunity Index => Focus on High Cost, Low Reliability/Supportability Problems
- PBL Support Strategy can Then be Developed to Target Improvement in Support Issues
  - Potential Improvements Must go Beyond Simple Assertions and Identify Specifics on How the Changes will be Implemented and Enforced

DoN PBL BCA Guide:
PBL BCA Cost Element Considerations

TABLE A - Cost Structure for Performance Based Logistics Business Case Analyses

☑ Significant Element / ☒ Support Element	Baseline Organic Repair New System	New Program Total CLS Incl "O" Level	Baseline Organic Repair Legacy System	Legacy Program Total CLS Incl "O" Level	New Program CLS excl "O" Level	Legacy Program CLS excl "O" Level	Subsystem Ctr "I" Lvl, Repair, Inventory Mgt	Subsystem Ctr Repair, Inventory Mgt
Acquisition Cost:								
Nonrecurring Design	☑	☑			☑			
Production	☑	☑			☑			
Acquisition Logistics Support Cost:								
Maintenance Planning	☑	☑	☒	☒	☒	☒	☒	☒
Support Support (Spares)	☑	☑	☒	☒	☑	☒	☑	
Support Equipment	☑	☑		☒	☑	☒	☒	☒
Technical Data	☑	☑		☑	☑	☑	☑	☑
Training	☑	☑		☒	☑	☒	☑	☑
Facilities	☑	☑		☒	☑	☒	☒	☒
Packaging, Handling, Storate & Trans	☑	☑		☒	☑	☒	☑	☒
Operations and Support Cost:								
"O" Level Maintenance Personnel								
Military Labor	☑		☑					
Contractor Labor		☑		☑				
"I Level Maintenance Personnel								
Military Labor	☑		☑					
Contractor Labor		☑		☑	☑	☑	☑	
Depot Level Repairables (DLRs)								
Costs of Repair	☑	☑	☑	☑	☑	☑	☑	☑
Supply System Cost Recovery	☑	☒	☑	☒	☒	☒	☒	☒
Burdening (Trans, Washout, Obs)	☑	☑	☑	☑	☑	☑	☑	☑
Consumables/Repair Parts	☑	☑	☑	☑	☑	☑	☑	☑
Weapon System Rework								
Organic Repair	☑		☑					
Commercial respir		☑		☑	☑	☑		
Engine Depot Rework								
Organic Repair	☑		☑					
Commercial repair		☑		☑	☑	☑		
Sustaining Engineering								
Government								
Technical Assistance Visits	☑	☑	☑	☑	☑	☑	☒	☒
Distance Support	☑	☑	☑	☑	☑	☑	☒	☒
Disposal Actions	☑	☑		☒	☑	☒	☑	☑
Contractor								
RMS Analysis	☑	☑		☒	☑	☒	☑	☑
DMSMS Actions	☑	☑		☒	☑	☒	☑	☑
Software Maintenance	☑	☑	☑	☑	☑	☑	☒	☒
Recurring Training	☑	☑	☑	☑	☑	☑	☒	☒
Support Equipment Maintenance	☑	☑	☑	☑	☑	☑	☒	☒
Modifications	☑	☑	☑	☑	☑	☑		

- Basic Cost Structure Provided Listing Significant Acquisition Logistics And O&S Cost Elements By Support Strategy
- Should be Viewed as a Min Set of Cost Elements to Consider in the BCA
- Cost Analyst Must Fully Understand the Scope and Actively Keep Abreast of Support Strategy Evolution(s)

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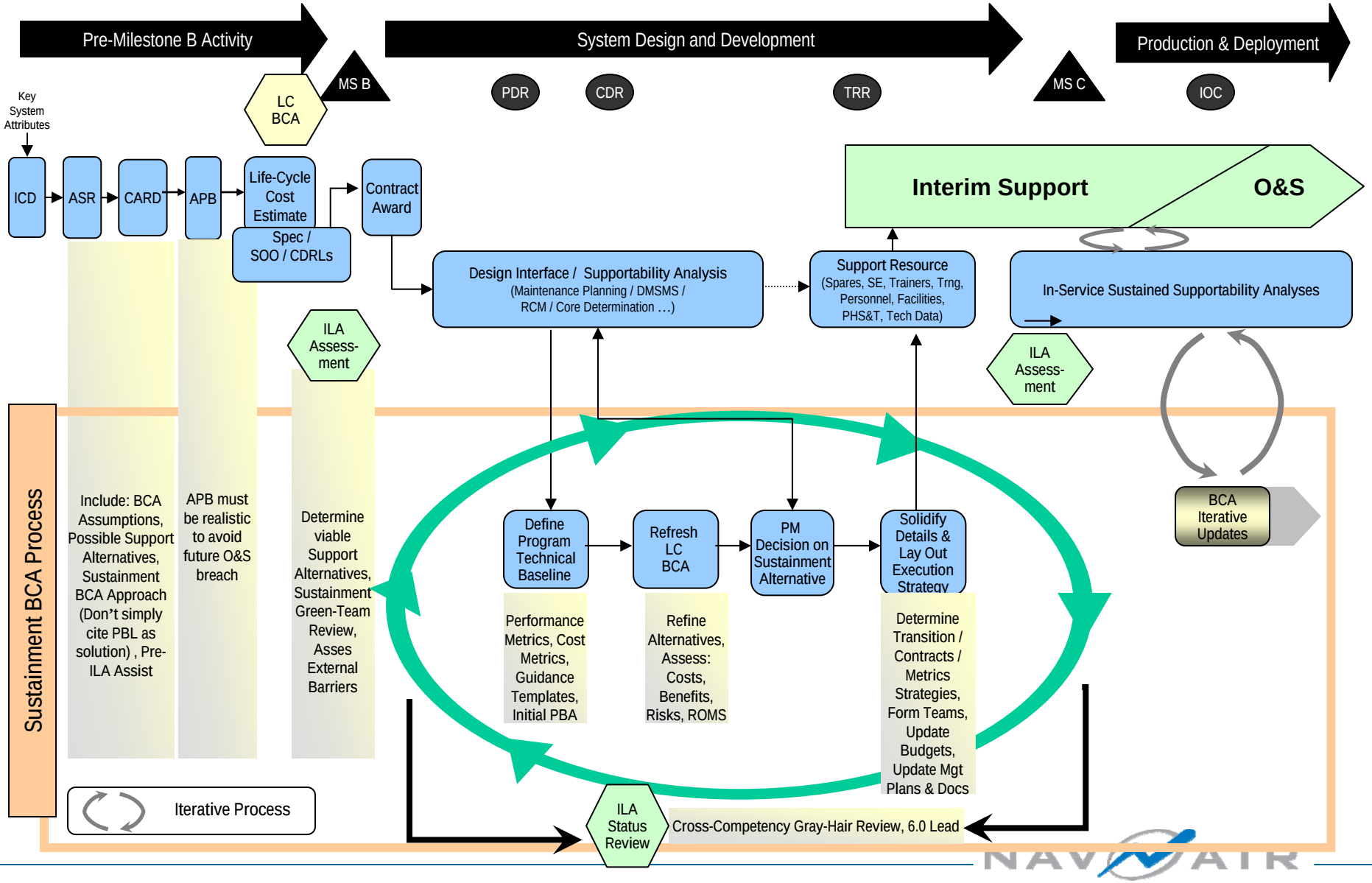
DoN PBL BCA Guide:
Detailed Cost and Performance Information

- Critical that the DoN Maintain Cost and Performance Information at System and Subsystem level
- Basis for Future Cost Analysis, Contracting, and Logistics System Analysis on New Weapon Systems
- Provides Insight into Current Maintenance and Supply Issues
- Information Needs to Compatible with Established OSD / DoN Reporting Requirements
  - Latest OSD CAIG O&S Cost Estimate Guide Requires Insight to Allocate CLS Cost Elements
  - Study Currently Underway by OSD PA&E to Address Cost Reporting Requirements for Sustainment Contracts

NAVAIR Sustainment Strategy BCA



PBL BCA Types

- **SYSCOM Life Cycle BCA**
  - ✓ Programmatic Decision Tool
  - ✓ Independently Estimates Traditional and PBL Scenarios Over the Life Cycle
  - ✓ Evaluates All Types of Funding
  - ✓ Means to Determine Best Value

- **NAVSUP/NAVICP Contract BCA**
  - ✓ Decision Tool To Support Contract Award
  - ✓ Estimates only the Traditional Scenario During Contract Period
  - ✓ Estimates NWCF Funds, Other Types of Funds Are Throughput
  - ✓ Traditional Scenario Estimated Then Compared to Contract Proposal
  - ✓ NAVSUP BCA Process Represents Subset Of Overall Life Cycle BCA Process

SYSCOM and NAVSUP BCA Processes Consistent with BCA Guidance and Processes Contained in DoN PBL BCA Guide

PBL Audit Findings

- Aug 04 GAO “Opportunities to Enhance the Implementation of PBL” Findings:
  - Best Practice Is To Use Performance Based Contracting as **Tool at The Subsystem Or Component Level** When It Is Cost-effective
  - **Provide For Future Delivery Of Sufficient Tech Data** To Enable The Program Office To Select An Alternate Source
- Sept 05 GAO “DoD Needs to Demonstrate that PBL Contracts are Achieving Expected Benefits”
  - Update Of BCA Following Implementation Of A PBL Arrangement To **Validate Business Decision**
  - Improve Monitoring of PBL Arrangements by **Verifying the Reliability of Contractor Cost and Performance Data**
- GAO “Cost and Budgetary Impacts of Performance Based Logistics Arrangements”
  - Ongoing, Fieldwork completed

PBL Cost Performance Tracking Challenges

- PBL Cost Performance
  - Cost Reporting Requirements Largely Voluntary To Date
- Cost Reduction Investment, Operational Changes, and Aging / Generational Growth Effects Effect Both Selected and Alternative Support Strategies
  - But, 'We Only Get To Run The Experiment One Way'
  - Marginal Impact Of These Effects Challenging To Quantify
- New OSD O&S CES No Longer Accommodates Single Line Item Reporting of CLS Cost
  - Element 5.0 Contractor Support No Longer Exists
- Impact of Replication of Supply Support Infrastructures

PBL BCA Lessons Learned

- **Independence, Time, and Resources are Required for Credible Cost & Performance Analysis of Support Alternatives**
- **Limited Empirical Data Exists**
  - **Most PBL Efforts to Date Have Limited / No Cost Reporting**
- **BCA Only as Good as Support Alternative Definitions – a Time Consuming and Iterative Process**
  - **Establish Cross-Competency Team Upfront**
  - **Manning Level and Rates Determination Challenging**
- **Documentation Critical for Audit Support and Follow-on Analysis/Refresh**
  - **While Emphasis of Initiative is Largely Readiness and Operational Performance Improvement, There is Broad Interest in Tracking/Reporting Cost Performance**
- **Common Templates such as NAVAIR's BCA Template Helpful**


Questions?
Comments?