The Logistics Support Resource Strategy Map: A Design and Assessment Tool

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Our Past Work

- 2006: CSIS NASA Study on Spiral Development
- 2007: Modeling Evolutionary Acquisition and Project Risk
- 2008: Modeling the Integration of Open Systems and Evolutionary Acquisition (P-8A MM Aircraft)
- 2009: Modeling Open Architecture & Spiral Development in ARCI with Applications to CGX (PEO IWS)
P-8 Logistics Strategy Decision

- Thesis work by NPS Students (Tallant, Hedrick, Martin)
  - Organic?
  - Contractor?
  - Blended?
The Ongoing Program Cost Paradigm

Strategic Questions for Programs

Goal: Maximum Readiness at Least Cost

• Effectiveness and Efficiency
  – Performance-Based Logistics to implement in Ks

• Logistics Strategy
  – Who performs what?
Spectrum of Strategy Options

Logistics Strategy Costs and Benefits

• **CLS** - Significant contracting efforts/expertise
  - Reduced Government organizational burden
  - Reduced Government control

• **OLS** - Develop and retain skills, infrastructure
  - Bear the risk in resource allocation & distribution
  - Bear direct and indirect costs

• **Blended** - Disaggregation of same functions & requirements
  - Interdependent allocation of differing resource types
  - Challenges of interface & performance measurement

*Forecasting and Designing Strategies is Difficult*
Strategy Analysis Clusters

- **System**
  - Environment
  - CONOPS
  - Support Levels
  - Features

- **Support Resources**
  - Technical Knowledge
  - Technical Capability
  - Workforce Characteristics
  - Legal/Intellectual Property
Trade-Off Study Comparison Criteria

**Supportability Constraints:**
- O&M staffing
- Skill levels
- O&S Costs
- System Failures/Level
- Mean Down time
- Turn-around Time
- Standardization
- Built-in Fault Diagnostics
- Transportability

**Design Characteristics:**
- Lifecycle cost
- Diagnostics
- Energy
- Battle Damage repair
- Transportability
- Facilities
Army Stryker Case Study

• Coryell (2004)
• Implementation of PBL
• Non-cost Factors Drive Strategy Shift
• Contracted to Blended for more flexibility and faster response time
Building a Logistics Support Resource Strategy Map

• Any asset allocation model will depend upon a myriad of criteria, factors, variables
• Many unknowns in each functional area
• Decision analysis requires weighting each
• Literature reveals over 50 considerations that can be arrayed as a mapping tool/decision aid

No ONE Best Strategy for ALL Programs
## Logistics Support Resource Strategy Map

|----------------------|-------------------------------|-------------------------------|-----------------------------|---------------------------|---------------------|----------------|--------------------------|-----------------------------|

The file LOGMAP.xls is available at the ARP website.
Examples of Criteria

- Product simplicity (inverse of product complexity)
- Product immaturity (inverse of product maturity)
- Sensitivity of product information
- Risks associated with a new CLS contractor
- Cost of protecting non-military logistic support personnel
- Difficulty of CLS to transfer support to other profitable uses
- Dis-economies of scale (inverse of large economies of scale)
- Cost of contracting (bidding, contract setup, contract enforcement)
- Min. (fleet size & replacement rate) required to maintain continuous logistic support / (fleet size & replacement rate)
- Availability/affordability of technical data to DoD
- OLS speed of deployment relative to CLS
- OLS ability to provide supply and support locations relative to CLS ability
- OLS ability to provide required skills relative to CLS
- Risk of labor disputes
Criteria Assessment Weighting Factors

- Importance of Criterion
- Logistic Support Resource Strategy Criterion
- Criterion Type
- Logistic Support Requirement
- Degree of Program & Strategy Support
- Reasoning behind Assessment
- Locations of Supporting Information
- Degree of Support for Contracted Logistics Support
- Priority-weighted Degree of Support for Contracted Logistic Support
- Cumulative Degree of Support for Contracted Logistics Support
Application of the Tool

• Phase I: Create Criterion/Requirements Sets for Assessment

• Phase II: Assess Criterion/Requirement Set Needs in Logistics Support Resources

• Phase III: Review, Discuss, and Revise Assessments from Different Perspectives

Predator Case Study Provided as Detailed Example
(See ARP website, and)

http://www.rand.org/pubs/monographs/MG350/
Implications for Practice

• Provides a framework for strategy assessment
• Provides support for improved assessment criteria identification
• Provides support for improved assessment quality
• Adaptable to many different types of programs
• High ease of use - widely used Excel® spreadsheet application
• High ease of understanding
• Provides documentation of assessments and rationale for decisions

• Caveats:
  - Illusion of objectivity
  - Lack of internal checks and balances
    (User omissions and inaccuracies still possible)