



ACQUISITION Research

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Under
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Project # 1

Topic: Contract Closeout (MBA Team)

Sponsor: ASN (RDA) (ACQ)

Researcher(s): MBA Team (TBD)

Description: This study is a follow-on to the Contract Closeout effort performed by an MBA Team under Project #6, FY03 program. The MBA Professional Report is: Transformation of DOD Contract Closeout, June 2003. DASN (RDA) (ACQ) is particularly interested in pursuing implementation of the recommendations made by this MBA Team. The detailed mapping of the contract closeout process provided by the earlier team will be invaluable in establishing a roadmap. The ASN (RDA) monthly database of Navy contracts registered in the MOCAS system continues to be a key source of information but critical problems regarding its accuracy have surfaced. Key stakeholders (e.g., DCMA, DFAS, DCAA, buying commands, contractors) will be contacted regarding the details of implementation, including actions that can be taken during pre-award and post-award phases to expedite contract closeout, actions that can facilitate batch closeout of large numbers of contracts simultaneously, and actions that can predict the costs to the Navy of maintaining, tracking, managing and closing physically complete contracts. The team will also assess the cost effectiveness of contracting out the process of contract closeout, examine the use of recovery auditors in the contract closeout process, and evaluate the use of existing quick closeout procedures and how they might be re-engineered.

Period of Performance: Jan-Dec 2004

Product(s): MBA Professional Report to DASN (RDA) (ACQ) regarding implementation of recommendations from MBA Professional Report on Contract Closeout Transformation, Jun 2003



Project # 19

Topic: Crossed-Field Amplifier Case

Sponsor: PEO IWS

Researcher(s): MBA Team

Description: The AEGIS system provides an example of a very successful Total Ownership Cost (TOC) reduction effort. Each ship requires microwave-producing equipment that includes a device called a Cross-Field Amplifier (CFA). Early in the AEGIS deployment, the CFA proved to be a cost driver with relatively expensive failures attributable to an arcing condition between the cathode and anode in the microwave tube. This arcing caused the CFA to fail at about 6,000 hours Mean Time Between Failure (MTBF). A change to a node metallurgy, along with other minor changes, reduced arcing and increased MTBF to between 40,000 and 45,000 hours, which drastically reduced the frequency of corrective maintenance, maintenance man-hours, and stockage level requirements, while simultaneously improving the reliability and availability of the microwave system. This dramatic improvement was the result of a team effort among the AEGIS Program Office, Communications and Power Industries (CPI, the vendor that provided the CFA, was formerly part of Varian), Crane Naval Surface Warfare Center (the Navy In-Service Engineering Agent for AEGIS microwave tubes), the Navy MANTECH Office, and Raytheon (the prime contractor, located in Sudbury, MA). This TOC reduction affects twenty-seven AEGIS Cruisers, each of which has 76 CFAs and forty AEGIS Destroyers, equipped with 38 CFAs. In 2002 dollars, the annual cost avoidance averages about \$1.9 million per Aegis Cruiser and \$950,000 per AEGIS Destroyer. Eventually, TOC reduction will benefit an additional 22 AEGIS Destroyers that are yet to be completed and deployed, each of which will have 32 CFAs.

The lessons learned from this example of TOC reduction should be captured in a case study for education and training purposes. Such a case could easily identify the critical elements of a TOC reduction program and demonstrate how these elements occurred in the CFA situation.



Period of Performance: 1 Jan-31 Dec 2004

Product(s): MBA Professional Report; Acqn Case Series case.

PEO (IWS) — NPS RESEARCH TOPICS

- Shifting the Paradigm from Proprietary to Open Solutions for Weapon Systems
- Incentivizing Contractor Performance in Developing OA Solutions
- Learning from LINUX – Open Architecture in the Navy
- Risks and Benefits Associated with Adopting Open Standards
- The Role of Small Business in OA
- Optimizing Phalanx Weapon System Life Cycle Support
- Cost effective comparison of non-guided gun projectiles to guided projectiles. – This analysis would evaluate cost per kill for various targets comparing non guided projectiles and guided projectiles.
- An evaluation of procurement and competition opportunities for gun launched guided projectiles at various production rates.
- Inherent savings in inventory hold cost and ship lift requirements for gun launched guided projectiles vs. conventional (Fewer will be guided projectiles but will be required to perform equivalent missions.)



NAVSEA NAVAL SURFACE WARFARE CENTER – NPS RESEARCH TOPICS

In today's acquisition environment there exists a "tension" between the Acquisition community (Program Executive Offices and Industrial Base) and the Navy's engineering infrastructure (Warfare Centers) operating as a Working Capital Fund organization. The acquisition community is being driven by cost, schedule, and performance. Sustainment of a strong industrial base is critical to the long-term success of our National Defense. The Navy engineering infrastructure, with assets valued at billions of dollars, is not fully utilized. The Warfare Centers mission is to ensure delivery of reliable systems and platforms and to mitigate/minimize risk to the Fleet. How do you encourage the use of both of these resources without tempering the acquisition process? How can the Navy acquisition community optimally use its government infrastructure?

Topic #1

Propose the development of a business model/process that encourages the acquisition community and the Navy engineering infrastructure to find the "best value" of resources available within the public and private sector to reduce overall lifecycle costs to the Department of Defense. This topic also related to the CLS/FSC/PBL business models mentioned in the SEA 04L Topic. Warfare Centers are given unique "authorities" associated with accomplishing work for private parties (industry); creating public-private arrangements around the CITE (Center for Industrial and Technical Excellence) authority granted by Congress and OSD: and recent Technical Authority responsibilities granted by COMNAVSEA and the emergence of the Product Area Leadership (PAL) concept associated with Warfare Center alignment.



Topic #2

The Warfare Centers have seen a gradual increase in their Work for Private Parties (WFPP) over the last decade. From a several thousand dollars to multimillion dollar tasks today, the Warfare Centers are slowly seeing more of their workload come from the private industrial sector. Work is accepted through a variety of Title 10 statutes but primarily is accepted via Sect. 2563, 2359b, and 7303.

Propose the development of an improved acquisition policy and funding strategies that will maximize the value of funding (no pass-through expense) and enhance the public-private partnership.

NAVSEA Acquisition Support Office (SEA 105) – NPS Research Topics

- Technology Push or Pull – Select a series of technological innovations that have influenced the character of warfare – such as, stealth, precision guided munitions, reactive armor, heads-up displays. Identify the proportion of them that arose because of a pre-stated need for such technology by users (i.e., directed research), and what proportion of them came out of open-ended basic research. How did these technologies enter the defense inventory? How would the results of this study impact the way that the defense research establishment and the defense acquisition establishment better integrate with each other?
- Foreign Suppliers – Identify what has been the result of previous legislation regarding foreign suppliers involvement in US defense contracting and subcontracting? Show positive and detrimental impacts and project similar impacts from ongoing legislative policies.

NAVSEA Cost Engineering Office (SEA 017) – NPS Research Topic

Cost Modeling of Non-Traditional Ship Designs

The Navy is pursuing transformational ship design technologies to meet new threats with lowest cost. Analogies with traditional Navy ships for costing may be inappropriate, given diverse missions and new design requirements for speed, agility and hull construction and configuration. There is limited historical data from which to



derive some parametric cost estimating relationship that will be needed to evaluate alternative ship designs.

There are two features the Navy may employ which merit some additional in-depth analysis that will aid in the cost estimating process.

- **Mission Package Modularity.** Given the operational flexibility and low investment cost in mission package modularity, what is the cost required to design a ship and its mission modules to be consistently producible and compatible? Are there any parallels in completed or mature U.S. commercial shipbuilding or in related projects that help to define and characterize the elements of cost?
- **Non-Traditional Hull Forms.** Given a general set of hull forms and materials not before employed for U.S. surface combatants, what relevant historical pricing data for Navy non-combatants and U.S. Commercial shipbuilding are available? What parametric relationships can be derived, adapted and/or extrapolated to assist in developing weight-based or other Cost Estimating Relationships?

To explore these cost questions, NAVSEA envisions opportunities for the Naval Postgraduate School (NPS) to perform as a partner in this effort with Program Executive Officer for Ship Programs and the NAVSEA Cost Engineering Division (SEA 017)



ASN (RDA) — NPS RESEARCH TOPICS

- 1) Identify common enterprise-wide acquisition metrics with particular emphasis on quality and productivity measures. What are the behaviors we want to drive in the acquisition workforce now and how will they change five years from now? How can we minimize our investment cost by capitalizing on existing investments like NAFI to determine where there are opportunities for efficiencies and savings in contracting, i.e., discovering procurement trends in credit card purchasing that may be more efficiently consolidated into a longer term contract to take advantage of quantity discounts. A recent Booz Allen Hamilton study finds that:
 - a) Navy SYSCOMs capture over 30 measures
 - b) Measures reflect statutory and regulatory compliance vs. key performance drivers
 - c) Multiple customer satisfaction surveys exist across SYSCOMs
 - d) Measures are not prioritized or enterprise-wide
 - e) Navy lacks performance benchmarks for many measures
 - f) Navy has limited ability to leverage historical data to forecast trends
 - g) Measures are applied inconsistently within and across SYSCOMs
 - h) Navy lacks ability to normalize measures across the enterprise to explain variances and uniqueness
 - i) Navy lacks ability to identify and capitalize on best practices across enterprise
 - j) Measures may not be aligned to Navy's strategic, operational and/or individual performance goals.

NPS deliverables should include a technical report that:

- (1) recommends contracting metrics along with a detailed game plan for SYSCOMs to use to implement them.



(2) outlines a detailed game plan for SYSCOM implementation of other critical acquisition area metrics.

- 2) Postulate the state of " E-business " circa 2020 in both the military and commercial sectors. How will this state affect future DoD procurement systems? For example, will the Navy be able to leverage its e-business assets and capabilities across its Systems Commands to create a single virtual acquisition enterprise, i.e., single Navy buying command, without being under one roof? NPS deliverables should include a technical report that:
 - a) describes and analyzes the anticipated state of e-business circa 2020 in both the military and commercial sectors and how it will affect future DoD procurement systems
 - b) analyzes the feasibility of a single Navy virtual acquisition enterprise and recommends options for building and operating such an enterprise.
 - c) analyzes the feasibility of a competitive service provider arrangement like the one used at the National Institutes of Health under a single virtual acquisition enterprise.
 - d) analyzes the feasibility of developing and implementing an architecture for coordinating services contracting across the enterprise and consolidating certain contracting functions within SYSCOMs.
- 3) Examine ROI in Navy business decisions-its use, effectiveness and implementation.
- 4) Develop human resource model for recruiting and retaining the acquisition corps circa 2020 to include identification and development of needed skills. NPS deliverables should include:
 - a) A technical report that analyzes and recommends the skill sets or technological enablers that will be needed by the year 2020 and a game plan for SYSCOMs to use to recruit and retain employees with these skills and effectively integrate technological enablers into their work environment to achieve maximum efficiency.



- 5) Examine Performance Based Logistics implementation at the Navy Inventory Control Point, including acquisition strategy development, Service Contract Act application and Congressional language interpretation. Identify barriers to PBL implementation including Executive and Legislative branch friction. Evaluate the future of PBL. NPS deliverables should include:
- (1) A report that outlines a detailed game plan for NAVICP to effectively implement PBL arrangements. The report should also address the issues raised above.
 - (2) A recent Booz Allen Hamilton reports suggests that \$250 million can be saved by improving supply base cost and cycle time performance on repair parts. NPS should examine this potential savings and report the degree to which PBL contracts contribute to it.
- 6) In light of global trends, examine DoD/DoN's strategic vision documentation for the 2010-2020 time frame. Translate these strategic visions into acquisition solutions or process road maps that allow the acquisition community to better satisfy warfighter needs. (What does the acquisition community need to do differently/better?)
- 7) Re-assess the core/non-core personnel issue (A-76). Examine: new guidance; varying definitions of core/non-core within DoD (and why; program execution identifying successful/unsuccessful implementation).
- 8) Assess the cost effectiveness of contracted CCO efforts.
- 9) Assess the use of recovery auditors in the CCO process.
- 10) Perform cost-benefit analyses of the closeout process, i.e., contract reconciliation process requirements.
- 11) Assess the use of existing quick closeout procedures and examine ways to improve and/or re-engineer them.

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Sponsored Research Project Statement of Interest

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Current Program: _____

Research Interests: _____

Project Interests: _____

Academic Advisor: _____

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