

# Major System Acquisition Reform in the United States Coast Guard: A Case for the Application of Lean Enterprise Principles

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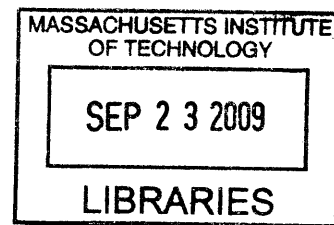
Submitted to the System Design and Management Program  
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The views expressed in this document are those of the author and do not reflect the official policy or position of the U. S. Coast Guard, U.S. Department of Homeland Security or the U.S. Government.

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## ABSTRACT

During any time of reorganization, it is important to look to processes and practices that have been used and proven effective by other organizations whether those organizations are similar in structure or similar in the transitory environment in which they are operating. For this reason, applying Lean Enterprise principles and practices that have been proven in both industry and governmental organizations can be of great benefit to the Acquisition Directorate of the United States Coast Guard as it reorganizes to improve mission execution. Notwithstanding that when most people hear the words “Lean Enterprise” they immediately think of enterprises involved in manufacturing or supply chain effectiveness, the principles of Lean Enterprise thinking can also be applied in the service and support environments. Therefore, the Coast Guard Acquisition Directorate, a service enterprise, can apply these same principles and practices in an effort to transform the directorate into a Lean Enterprise.

In this thesis, the Coast Guard’s Rescue 21 project was used as an example for the entire Coast Guard Acquisition Directorate. The Rescue 21 project consists of the acquisition of a new advanced command, control and communications system to replace the antiquated National Distress and Response System (NDRS). From the application of Lean Enterprise evaluation approaches to the Rescue 21 project, it was evident that:

- The Rescue 21 project provides low value to its various stakeholders;
- This low value is a direct result of cost overruns and schedule delays;
- Misalignment exists among Strategic Objectives, Stakeholder Values, Key Processes and Metrics;
- The Rescue 21 enterprise architecture has a solid foundation to improve value delivery;
- The Rescue 21 project leadership desires to improve in the area of value delivery to stakeholders.

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First is my family, Dad, Kathy, Katey and Dale. Thank you for your patience, encouragement and, most importantly, love. Your continued support, especially during those late hours of writing, reading, analyzing and re-writing, served as my life-blood to get things done. You formed the foundation I needed to not only complete this thesis, but also the entire SDM program.

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## LIST OF ABBREVIATIONS

ACPO	Acquisition Chief Process Office
AF	Air Force
ALC	Air Logistics Center
ATAC	Acquisition Transformation Action Council
C4	Command, Control, Communications and Computers
C4IT	Command, Control, Communications and Computers and Information Technology
CG	Coast Guard
CG-7	Assistant Commandant for Capability
CG-761	Office of C4IT and Sensor Capability
CG-DCO	Coast Guard - Deputy Commandant for Operations
CIAO	Commandant Intent Action Orders
D&SWS	Develop & Sustain Warfighting Systems
DHS	Department of Homeland Security
DOD	Department of Defense
EEZ	Exclusive Economic Zone
ESAT	Enterprise Strategic Analysis for Transformation
ESD	Engineering Systems Division
EVM	Earned Value Management
FY	Fiscal Year
GAO	Government Accountability Office
GDC4S	General Dynamics C4 Systems
GMDSS	Global Maritime Distress and Safety System
HITRON	Helicopter Interdiction Tactical Squadron
ICGS	Integrated Coast Guard Systems
IPT	Integrated Product Teams
LESAT	Lean Enterprise Self Assessment Tool
MAJCOM	Major Commands
MAR	Monthly Acquisition Report
MDA	Milestone Decision Authority
MIT-LAI	Massachusetts Institute of Technology - Lean Advancement Initiative
MSAM	Major Systems Acquisitions Manual
MSO	Marine Safety Offices
MTBF	Mean Time Between Failure
MTR	Mean Time To repair
NDRS	National Distress and Response System
NDRSMP	National Distress and Response System Modernization Plan

O&S	Operations and Sustainment
OA	Operational Analysis
OMB	Office of Management and Budget
OPM	Object Process Modeling
OSD	Office of the Secretary of Defense
PEO	Program Executive Officer
PIR	Post Implementation Review
POPS	Probability of Program Success
RADM	Rear Admiral
RDT&E	Research, Development, Test and Evaluation
ROI	Return on Investment
SAF	Secretary of the Air Force
SAF/AQ	Secretary of the Air Force/Acquisition - Assistant Secretary for Acquisition
SDM	System Design and Management
SECAF	Office of the Secretary of the Air Force
SOLAS	Safety of Life at Sea
SPO	System Program Office
USAF	United States Air Force
USCG	United States Coast Guard
VTS	Vessel Traffic Services

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# CHAPTER ONE

## Introduction

### Guardian Ethos

*"I am America's maritime guardian.*

*I serve the citizens of the United States.*

*I will protect them.*

*I will defend them.*

*I will save them.*

*I am their shield.*

*For them I am semper paratus.*

*I live the Coast Guard values.*

*I am a guardian.*

*We are the United States Coast Guard."*

For the men and women serving in the United States Coast Guard, the Guardian Ethos perfectly describes their beliefs, customs, work ethic and high sense of service to the American public. Implied in this ethos is that Coast Guard men and women have the right assets to fulfill and perform a wide variety of roles and missions. In just one example, a Coast Guard crew cannot rescue fishermen from a sinking vessel offshore if they do not have the command, control and communications infrastructure to locate and pass the information of the sinking vessel to a response unit; expeditiously travel to the scene; and conduct the rescue in a safe and effective manner. To that end, the Coast Guard's Acquisition Directorate plays a critical role, enabling the operational readiness and mission execution necessary to fully realize the Guardian Ethos. This Directorate's motto is simply, "Mission execution begins here." More specifically, the Coast Guard's Acquisition Directorate's vision and mission follow:

### Vision

The Coast Guard Acquisition Directorate empowers a workforce motivated by leadership, integrity, and teamwork to deliver the assets and systems that increase operational readiness, enhance mission performance and create a safer working environment.

### Mission

Acquire and deliver more-capable, interoperable assets and systems, and high quality, timely services that support Coast Guard operational forces in executing missions effectively and efficiently.

The Coast Guard's Acquisition Directorate has struggled with meeting the demands of these newly formed, challenging vision and mission statements. This situation is understandable given

the enormous task that faces the Acquisition Directorate, especially since the “assets and systems” providing the backbone for effective, diverse Coast Guard operations are complex and extensive in nature.. The importance of getting this situation right has been validated by the Commandant of the Coast Guard, Admiral Thad Allen, who has made revamping the Acquisition Directorate one of his top priorities.

During any time of reorganization, it is important to look to processes and practices that have been used and proven effective by other organizations whether those organizations are similar in structure or similar in the transitory environment in which they are operating. For this reason, applying Lean Enterprise principles and practices that have been proven in both industry and government organizations can be of great benefit to the Acquisition Directorate of the Coast Guard as it reorganizes to improve mission execution. Notwithstanding that when most people hear the words “Lean Enterprise” they immediately think of enterprises involved in manufacturing or supply chain effectiveness, the principles of Lean Enterprise thinking can also be applied in the service and support environments. Therefore, the Coast Guard’s Acquisition Directorate, a service enterprise, can apply these same principles and practices in an effort to transform the directorate into a Lean Enterprise.

### ***Thesis Motivation***

The time to influence change in the major system acquisition process of the Coast Guard is now because of the current reorganization to improve operational support. Included in this reorganization is the Coast Guard’s Acquisition Directorate, which is responsible for enhancing mission execution by delivering the integrated systems, assets and support required to accomplish maritime safety and security missions. Problems in the Coast Guard’s acquisitions process and organization have been identified in numerous Government reports conducted by the U.S. General Accounting Office (GAO) and various Congressional committees. In summary, these reports state that the Coast Guard’s decentralized approach to system acquisitions is inefficient and undisciplined. It lacks common procedures, internal controls, and common financial transaction and property accountability systems. These shortfalls have led to cost overruns, schedule delays and failure to meet system specifications. As a result, the Coast Guard has developed its plan to transform the Acquisition Directorate. The plan has been outlined in a Coast Guard document titled, *Blueprint for Acquisition Reform*, and is currently being implemented. Although this blueprint identifies critical process and organizational improvements, it does not holistically apply all of the principles necessary to create a Lean enterprise.

The second motivational factor for this thesis is purely personal. Upon graduation from the MIT System Design and Management Program, I will return to the Coast Guard and be assigned to the newly formed Acquisitions Directorate. By completing this research topic, I hope to lay the groundwork for further reform and improvement in the manner in which the Coast Guard provides integrated systems, assets and support to its stakeholders.



### ***Thesis Overview***

Chapter Two provides detailed information concerning the methodology used in this thesis. Chapter Three describes Lean Principles and the Enterprise Strategic Analysis for Transformation (ESAT) tools created by the Massachusetts Institute of Technology - Lean Advancement Initiative (MIT-LAI). Chapter Four reviews how Lean Principles and the ESAT tools were applied to an enterprise within the U.S. Air Force's acquisitions organization, demonstrating that these principles and tools can be of great value to a service enterprise in transition. Chapter Five provides background information on the importance of the Coast Guard's roles and missions, and makes the case of why it is critical to acquire the right assets for Coast Guard men and women to perform their duties. Chapter Six describes problems the Coast Guard has had in acquiring the right assets and how the Coast Guard is addressing these problems. In Chapter Seven, a Coast Guard acquisition project is used to represent the Coast Guard Acquisition Directorate. Lean Principles and some of the ESAT tools are applied to this project to illustrate their potential value to the Coast Guard's Acquisition Directorate's transformation, potentially turning it into a Lean Enterprise. Chapter Eight provides a summary of the thesis findings and identifies follow-on work that could be conducted.

# CHAPTER TWO

## Thesis Methodology

### *Literature Review*

As part of the research for writing this thesis, an in-depth literature review was conducted. Books dealing with the topics of Lean principles and leadership / management practices were read and reviewed for their applicability to this thesis. Numerous U.S. Government documents and reports were read and reviewed. Office of Management and Budget (OMB) and Government Accountability Office (GAO) reports provided detailed information concerning acquisition problems in the U.S. Air Force and U.S. Coast Guard. The Congressional statements and transcripts of public speeches of Coast Guard leaders also provided information concerning acquisition problems as well as plans to address these problems. Internal Air Force and Coast Guard documents provided valuable information concerning processes and metrics used within both services to conduct acquisition projects. Other Coast Guard publications provided valuable information concerning the history of the Coast Guard, its roles and missions and its vision for the future. Finally, Air Force and Coast Guard websites provided general information concerning the offices and projects involved in this thesis.

### *Interviews*

Several telephone interviews were conducted with both Air Force and Coast Guard leaders within their respective acquisition enterprises. Primarily, these interviews were utilized to identify useful source documentation, clarify questions that arose from the literature review and verify the information obtained through the application of Lean principles and the tools associated with the Enterprise Strategic Analysis for Transformation (ESAT) methodology.

### *Case Studies Using Enterprise Strategic Analysis for Transformation (ESAT) Tools*

Two case studies were conducted on U.S. military acquisition enterprises in the completion of this thesis. One case study was conducted on the Secretary of the U.S. Air Force Acquisition Chief Process Office (ACPO), and the other was conducted on the Coast Guard's Rescue 21 project. ESAT tools were applied to each of these two enterprises. Specifically, tools to assess value exchange, interactions among strategic objectives, stakeholder values, key processes and metrics, and current and desired enterprise states were used. Lean principles and the ESAT methodology are further explained in Chapter Three.

The following framework devised by S. Yin further describes the case study methods used in this thesis on both the Air Force and Coast Guard acquisition enterprises (Yin, 2003).

#### Study Question

1. What new insights can be gained from applying Lean principles and the ESAT methodology to military acquisition enterprises?

#### Study Propositions

1. Determining the value exchange between an enterprise and its various stakeholders will help identify an enterprise's performance weaknesses.
2. Evaluating the strong, weak and lack of interactions among the key elements of an enterprise (i.e. strategic objectives, stakeholder values, key processes and metrics) will help identify key areas to focus reform efforts.
3. Conducting an analysis of an enterprise's current state and its desired state will provide the foundation for a Lean Enterprise transformation.

#### Unit of Analysis

1. Air Force Acquisition Chief Process Office (ACPO) will be analyzed as an acquisition support enterprise.
2. Coast Guard's Rescue 21 project will be analyzed as an acquisition program enterprise.

#### Logic Linking the Data to the Propositions

For proposition #1: evidence that low value delivery was provided to a stakeholder by an enterprise based on value exchange analysis.

For proposition #2: evidence provided by the application of the ESAT X-matrix tool highlighting the weak and none interactions among strategic objectives, stakeholder values, key processes and metrics.

For proposition #3: evidence provided by conducting a Lean Enterprise Self Assessment Tool (LESAT) survey on the various leaders of the acquisition enterprise, especially highlighting large disparities between the current and desired states.

#### Criteria for Interpreting the Findings

The sources of evidence will include the various documents referred to in the Literature Research section of this chapter, interviews and surveys. By using these varying sources of evidence, some reliability and validity issues will be eliminated by cross-referencing the information. Any source of evidence will be verified through this cross-referencing / triangulating method to determine any bias or inaccuracy.

#### Implications for Case Study

1. Lean principles and the ESAT methodology can be successfully applied to a service or support enterprise, yielding the same types of benefits (i.e. alignment between strategic objectives and metrics) gained by a manufacturing enterprise.
2. The application of Lean principles and the ESAT methodology provides the Coast Guard Acquisition Directorate with great insights on how to provide better value to its stakeholders now and in the future.

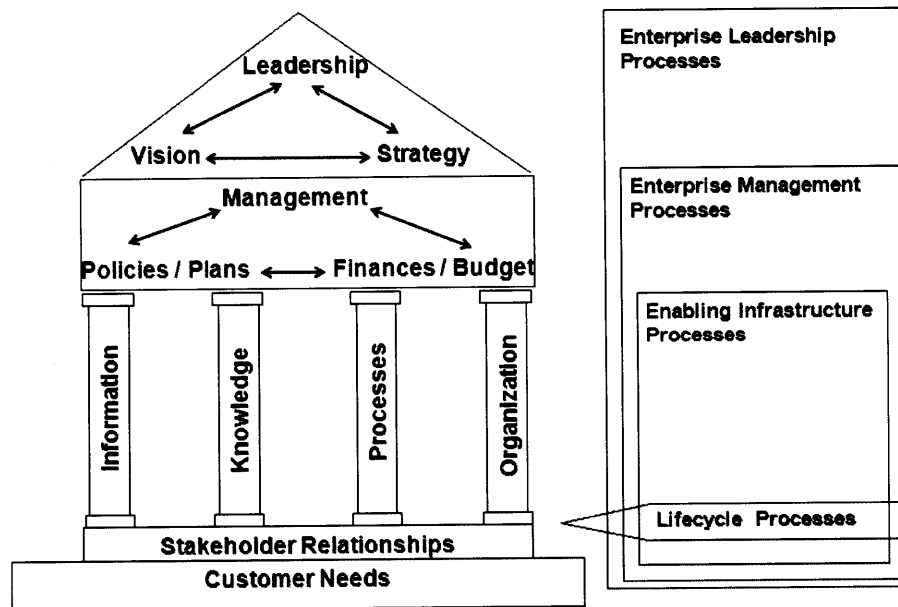
# CHAPTER THREE

## Overview of the Enterprise Strategic Analysis and Transformation (ESAT) Methodology

### *Lean Enterprise Defined*

Before describing the ESAT methodology, it is important to ensure that a basic knowledge of the central concept of a *Lean Enterprise* is understood. For purposes of using consistent definitions, *Lean* is defined as "...a process of eliminating waste with the goal of creating value for enterprise stakeholders (Murman, 2002)." In their book, *Lean Thinking*, James Womack and Daniel Jones state that the *Lean* philosophy "...provides away to specify value, line up value-creating activities in the best sequence, conduct these activities without interruption whenever someone requests them, and perform them more and more effectively (Womack and Jones, 2003, p. 15)." According to Blacks Law Dictionary, an *Enterprise* is, "One or more persons or organizations that have related activities, unified operation or common control, and a common business purpose." Therefore, a *Lean Enterprise* can be defined as an integrated entity that effectively and efficiently creates value for its relevant stakeholders by employing lean enterprise principles and practices (MIT-LAI, 2008)." The following figure provides an illustrative overview of a *Lean Enterprise*.

Figure 1: Lean Enterprise

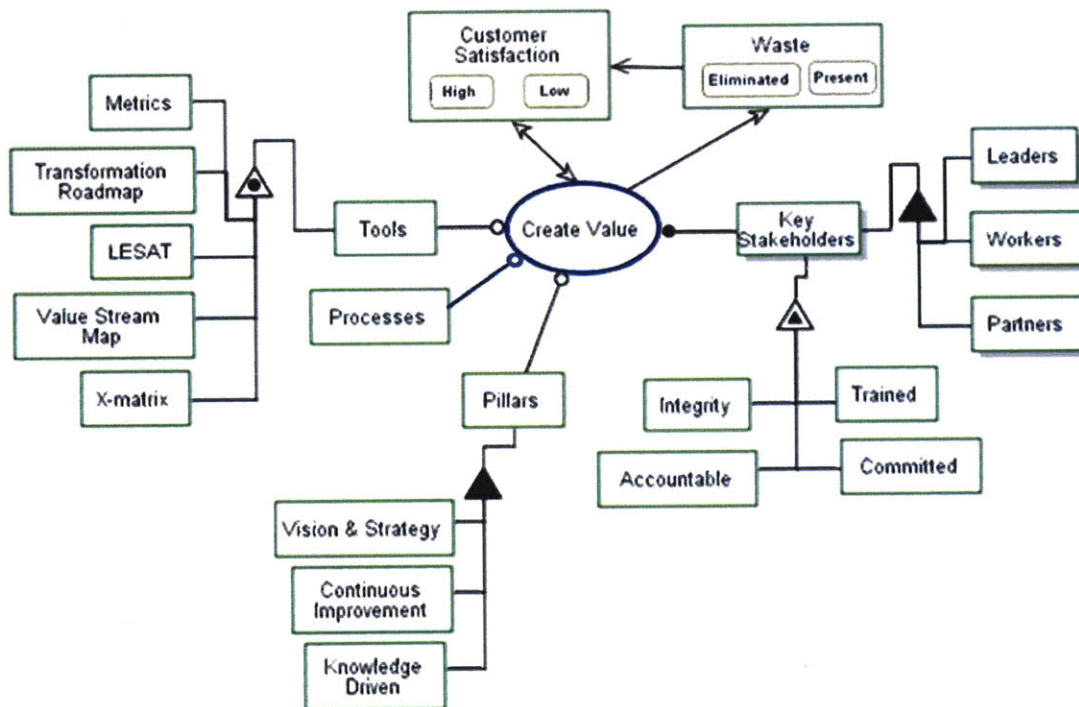


The depiction of a Lean Enterprise as a house is a useful and easy tool to understand. The house is not meant to show that the different parts needed to form a Lean Enterprise are separate and distinct, which is why the diagram to the right has been created. The diagram to the right shows the interaction and reach of the four processes needed to create a Lean Enterprise. It is important to realize that all parts must be integrated in order to have an existing, standing house – or an

integrated Lean Enterprise. Similar to a house, the Lean Enterprise cannot exist unless it has something to stand on (i.e. foundation, land, etc...). Without Customer Needs the Lean Enterprise cannot stand – it would not need to exist. Leadership is the cover or roof of the house. It consists of interactions which create a vision and a strategy for the Lean Enterprise. As the roof, Leadership provides the cover and protection for the house and all things inside of it. Under the roof is the level called Management. It is separate from Leadership and depicts the level where interactions occur to create policies, plans, financial tools and budgets. Management creates these items using the vision and strategy created by Leadership. This relationship is similar to a roof and the attic in a house. They depend on each other to fulfill their goal, providing shelter. A synergistic relationship exists between the attic and the columns holding it up. The attic provides stability for the columns and the columns provide support to the attic. The policies, plans, finance tools and budget created by Management enable, or provide stability for, Information, Knowledge, Processes and the Organization. In return, these things support management. In a similar fashion, the floor also enables the columns to perform their function by providing stability. In turn, the columns help provide meaning to why the floor is needed. In a Lean Enterprise, positive Stakeholder Relationships enhance Information, Knowledge, Processes and the Organization, which results in a better understanding of customer needs and fulfillment of those needs.

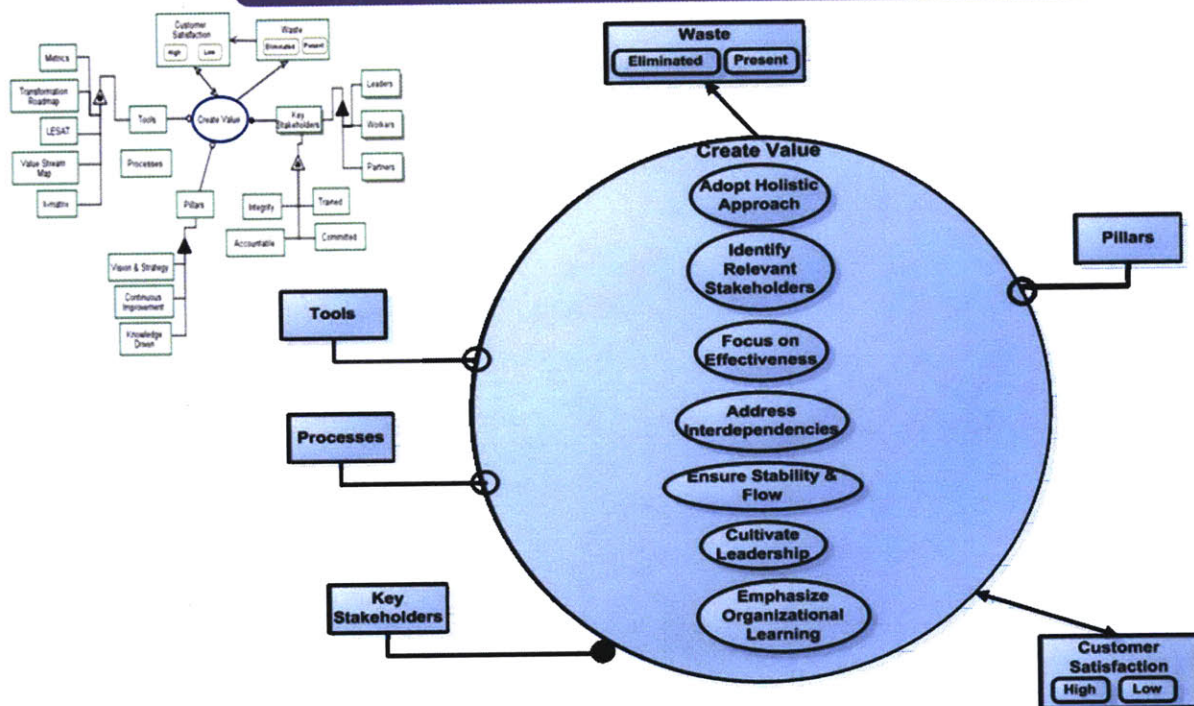
Object Process Modeling (OPM) serves as another useful tool in understanding the concept of a Lean Enterprise. The following OPM diagrams provide insightful information about what the various relationships required to have a Lean Enterprise.

**Figure 2: OPM Lean Enterprise**  
*(Source: Vixama, 2008)*





## Expanded View of “Create Value”



There are three key insights that should be taken from these OPM figures. First, the process of “Create Value” impacts the object of “Waste” by changing its state from “Present” to “Eliminated.” As Womack and Jones point out in their book, Lean Thinking is about the removal of muda – the Japanese word for waste. They also define waste as any activity that absorbs resources and creates no value. Second, the process of “Create Value” is made up of seven sub-processes, which are the seven principles of Lean Enterprise thinking.

1. Adopt a holistic approach to enterprise transformation.
2. Identify relevant stakeholders and determine their value propositions.
3. Focus on enterprise effectiveness before efficiency.
4. Address internal and external enterprise interdependencies.
5. Ensure stability and flow within and across the enterprise.
6. Cultivate leadership to support and drive enterprise behaviors.
7. Emphasize organizational learning.

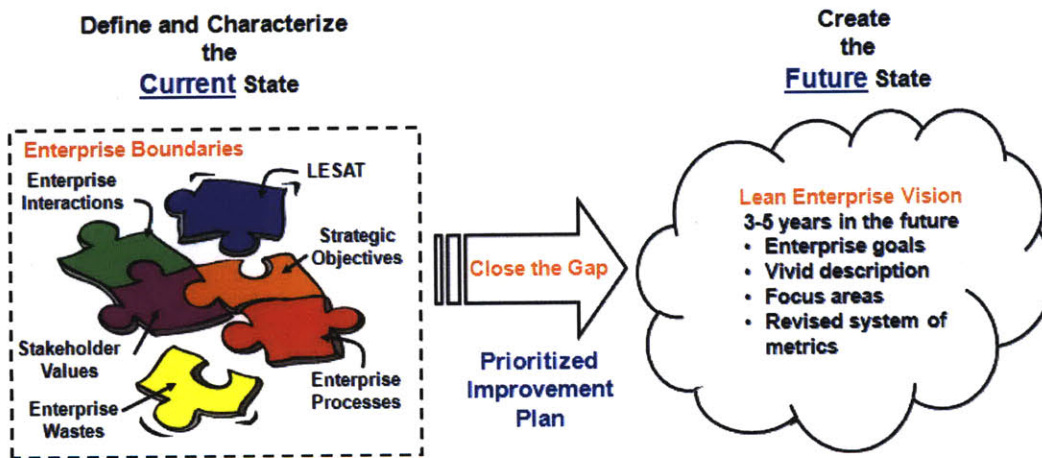
The third key insight is that the object, “Tools,” enables the process of “Create value.” Tools consist of “Metrics, Transformation Roadmap, LESAT [Lean Enterprise Self Assessment Tool], Value Stream Map and X-matrix.” All of which are tools contained within the ESAT methodology.

### ESAT Methodology

The ESAT methodology was developed by MIT-LAI. The motivation for developing this methodology was three-fold. MIT-LAI desired to: expand the proven and successful technique of value stream analysis to enterprise analysis. They wanted to provide a coherent method for analyzing and improving enterprise performance while integrating strategic objectives, stakeholder interests and process performance. Finally, MIT-LAI wanted to provide supporting tools to assist in the transformation from an enterprise to a Lean Enterprise. What distinguished the ESAT methodology from other transformation methodologies is the focus on the total enterprise and the tools used in the process. The tools are well-tested and well-understood.

The ESAT methodology is an analytical framework used in diagnosing and improving an enterprise's overall performance. In other words, it is a process used to transform an enterprise into a Lean Enterprise. By using the tools in Figure 2 and others, the ESAT approach defines and characterizes an enterprise's current and future states (typically 3-5 years away). By doing so, an analysis can be conducted on potential gaps between the current and future states. These gaps provide insights into a prioritized, actionable transformation plan to bring the enterprise to the envisioned Lean Enterprise.

Figure 3: ESAT Approach  
(Source: MIT-LAI)



The ESAT methodology emphasizes the understanding of the value streams across the enterprise. This understanding includes the value streams between the various stakeholders (internal and external) and the enterprise itself. In this context, Murman et al defined creating value as "...how various stakeholders find particular worth, utility, benefit, or reward in exchange for their respective contributions to the enterprise (Murman, 2002)." Womack and Jones agree, claiming, "Lean thinking therefore must start with a conscious attempt to precisely define value...through dialogue with specific customers (Womack and Jones, 2003, p. 19)." By understanding these value streams, identification of enterprise wastes and opportunities becomes apparent. "Getting value to flow faster always exposes hidden muda in the value stream. The harder you pull, the more impediments to flow are revealed so they can be removed (Womack and Jones, 2003, p. 25)."

In summary, the ESAT methodology provides an enterprise perspective. It enables a clear definition of the enterprise as a whole and fosters enterprise thinking and system-wide improvement. The ESAT process focuses on maximizing value delivery to all key stakeholders by emphasizing enterprise effectiveness over efficiency. The ESAT methodology utilizes qualitative data through stakeholder interviews and quantitative data from performance against key processes and strategic goals.

### ***Lean Principles Applied to Service and Support Environments***

The words “Lean Enterprise” trigger images of enterprises that involve manufacturing or supply chain effectiveness. For the most part, they are correct. However, their thoughts are artificially constrained perhaps because of the fact that Lean was derived from the Toyota Production System (Womack, Jones and Roos, 1990). These people fail to realize that Lean, the principles of Lean Enterprise thinking and even the ESAT can also be applied in the service and support environments. After years of benchmarking and observing manufacturing organizations, Womack and Jones developed a simple rule of thumb for applying Lean thinking.

“...converting a classic batch-and-queue production system and converting it to continuous flow with effective pull from the customer will double labor productivity all the way through the system...while cutting production throughput times by 90 percent and reducing inventories in the system by 90 percent as well (Womack and Jones, 2003, p. 27).”

These same magnitudes of changes may also be realized in the service and support environment. In a military acquisitions organization (the service and support environment), perhaps these changes can be translated to the elimination of administrative steps which really are not needed, reducing mistakes which require recertification or providing products and services that do not meet stakeholder needs. Chapters Four and Seven describe studies in which the concept of a Lean Enterprise and the ESAT were applied to the United States Air Force and United States Coast Guard acquisitions organizations, respectively.



## CHAPTER FOUR

### United States Air Force Study

In this chapter, a study conducted by a team of four Massachusetts Institute of Technology (MIT) graduate students, including the author, on the United States Air Force (USAF) acquisitions organization will be presented (Friedman, Gaspar, Tiongson and Vixama, 2008). This study will illustrate that a great deal of benefit for newly, re-organized service or support enterprises can be gained by applying Lean principles and the ESAT methodology. Although the Coast Guard and USAF have different situations concerning their major system acquisitions organization, strong similarities exist that make this study relevant to the Coast Guard's current situation – near completion of its *Blueprint for Acquisition Reform* described in detail in Chapter Six. The overwhelming similarities are that both of these government acquisition organizations have recently instituted reform plans and, these plans were a direct result of poor project performance in terms of cost overruns, schedule delays and, most importantly, stakeholder (i.e. Congress) pressure / direction.

#### *Study Overview*

Lean principles and the ESAT methodology were used to assess the Secretary of the United States Air Force Acquisition Chief Process Office (ACPO) over a four month period. The ACPO is responsible for performing strategic long-term planning for USAF major system acquisitions. The ACPO accomplishes this task by periodically collecting, evaluating and reporting on key metrics from the portfolio of major system acquisition programs throughout the entire USAF. There is pressure from the Executive and Legislative branches of government to improve the USAF acquisition process as a significant portion of the programs are over budget each year. Improved performance in the ACPO processes for making decisions regarding acquisitions should help identify and troubleshoot potential problems before they have significant impacts on projects.

The research approach used in this study consisted of interviews with ACPO staff and the completion of a LESAT survey by the two leaders of the office. Through this research, the team gained an understanding of the key stakeholders and the internal and external processes of the ACPO enterprise. The survey allowed the MIT team to evaluate how the ACPO leaders perceive their current state as well as their desired future state with respect to being a lean enterprise. Results from the interviews and surveys were evaluated to identify sources of enterprise waste with respect to the following six categories: Leadership, People, Processes, Suppliers, Information Flow and Customers.

Key findings indicate the ACPO is overburdened with short-fused tasks not aligned with their strategic objectives and lack the proper staff size for providing long-term planning for acquisitions. The data being supplied to the ACPO from the various acquisition programs is provided sporadically and there is a general lack of trust in the validity of the data. The MIT team found there was no accountability in the accuracy of the data provided from suppliers with data collection personnel that are largely untrained and unmotivated. In addition, the ACPO is unable to enforce or even police the acquisition of the data acquired.

Based on these findings an ACPO Transformation Plan was created that offers a prioritized framework for change with an immediate impact horizon of 18 months. The first step is for an organizational structure realignment to drive the transformation strategy. This realignment includes getting senior leadership buy-in to the lean strategy which is critical for empowering personnel at all levels to pursue their assigned goals unhindered. Also, the ACPO staff size needs to be increased by at least 5 personnel to allow for proper execution of the lean strategy. The second step is to improve data assurance by achieving timely access to accurate and reliable information in support of acquisition strategic planning. This step can be accomplished by establishing enterprise wide standards and training, increasing funding to develop common information technology (IT) tools and increasing the ACPO travel budget for site visits for periodic reviews with stakeholders. The third step is for a process realignment that ensures the ACPO executed tasks have a direct link to strategic goals. To accomplish this step, internal metrics are necessary to monitor ACPO progress toward a lean enterprise. In addition, the ACPO needs to pursue a gradual decline in those tasks that are not aligned with its strategic goals. The fourth step is to implement a continuous improvement infrastructure that incorporates processes and structures to ensure the lean transformation remains a dynamic and viable part of the enterprise beyond the initial launch stage. This infrastructure can be accomplished by formal communications plans, as well as training plans and events. Specifically, lean training within the human resources development office is necessary. In addition, they need to hire 2-3 personnel who can work to initiate and release communications plans, marketing, newsletters, etc... to keep personnel informed of lean initiatives. Continuous feedback to identify gaps, refinements and changes is necessary.

Proper implementation of the ACPO Transformation Plan is expected to improve the processes critical for strategic decision making regarding health and sustainability of USAF acquisitions. The plan establishes an actionable agile acquisition future state for the ACPO enterprise.

### ***Acquisition Chief Process Office Enterprise Definition***

The ACPO is a selectively manned organization chartered to advise the Service Acquisition Executive on continuous process improvement, change management and strategic alignment within the USAF and Office of the Secretary of Defense (OSD). ACPO designs, develops, integrates and executes acquisition process reengineering activities in order to create an

effective, efficient institution that produces weapon systems for USAF forces on time, within budget, according to specification. The ACPO is specifically chartered with the responsibility and authority to:

- Establish an actionable, agile acquisition future state vision and key initiatives with Acquisition Transformation Action Council (ATAC) participation;
- Champion acquisition enterprise enabling solutions in policy, process, information systems and human resources;
- Facilitate institutionalization of improvements across the USAF acquisition community;
- Lead, manage, integrate and expedite the USAF acquisition transformation;
- Represent the USAF acquisition community with a single process and enabling solutions;
- Establish and maintain configuration management of a single USAF acquisition process and systems architecture;
- Deploy standard process reengineering and continuous process improvement toolsets;
- Manage the Acquisition Information Technology portfolio.

The Coast Guard does not have an office that performs ACPO-like functions in their Acquisitions Directorate. Although the Department of Homeland Security maintains oversight of Coast Guard major system acquisitions, they also do not have an entire office similar to ACPO for the Coast Guard. Both the Coast Guard and Department of Homeland Security do contain offices that have individuals who review aspects (i.e. policy, budget, project health) of the overall Coast Guard Acquisitions Directorate.

**Creation of the ACPO Enterprise**

Similar to the situation with Coast Guard major system acquisitions, the Department of Defense (DOD) has endured significant setbacks in the execution of its acquisition programs. As the historic information below shows, DOD’s planned investment for new systems doubled from \$790 billion in 2000 to \$1.6 trillion in 2007. Part of this escalation in investment was due to significant changes from initial estimates and overall total acquisition cost growth.

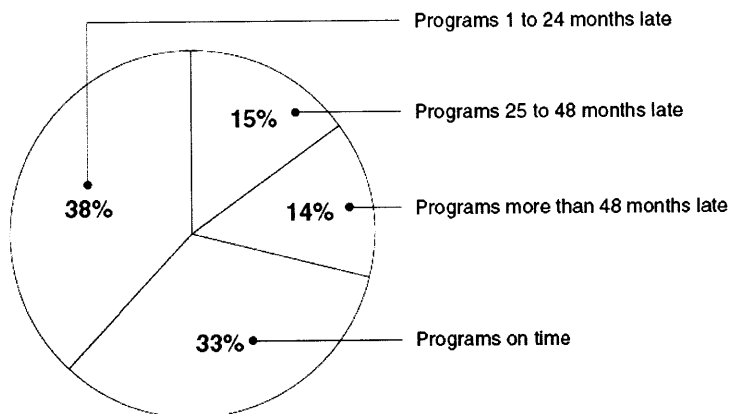
**Table 1: DOD Major Defense Acquisition Portfolio Costs Comparison**

Fiscal year [FY] 2008 dollars	FY 2000 Portfolio	FY 2005 Portfolio	FY 2007 Portfolio
<b>Portfolio size</b>			
Number of programs	75	91	95
Total planned commitments	\$790 Billion	\$1.5 Trillion	\$1.6 Trillion
Commitments outstanding	\$380 Billion	\$887 Billion	\$858 Billion
<b>Portfolio performance</b>			
Change to total RDT&E costs from first estimate	27 percent	33 percent	40 percent
Change in total acquisition cost from first estimate	6 percent	18 percent	26 percent
Estimated total acquisition cost growth	\$42 Billion	\$202 Billion	\$295 Billion
Share of programs with 25 percent or more increase in program acquisition unit cost	37 percent	44 percent	44 percent
Average schedule delay in delivering initial capabilities	16 months	17 months	21 months

Source: GAO analysis of DoD data, 31 Mar 2008 Report

Additionally, the vast majority of acquisition projects within the DOD have experienced schedule delays. The combination of cost and schedule issues result in insufficient portfolio results and increased pressure faced by the DOD and many other government agencies. As an entity within the DOD, acquisition project mismanagement by the USAF has contributed to these macro issues. For comparative purposes, at the time of the study, the USAF portion of the 2008 DOD budget for Procurement and Research, Development, Test and Evaluation (RDT&E) was expected to top \$52.5 billion (DOD Budget Fiscal Year 2008, 2007).

**Figure 4: Schedule Delays for DOD Major Weapon Systems**

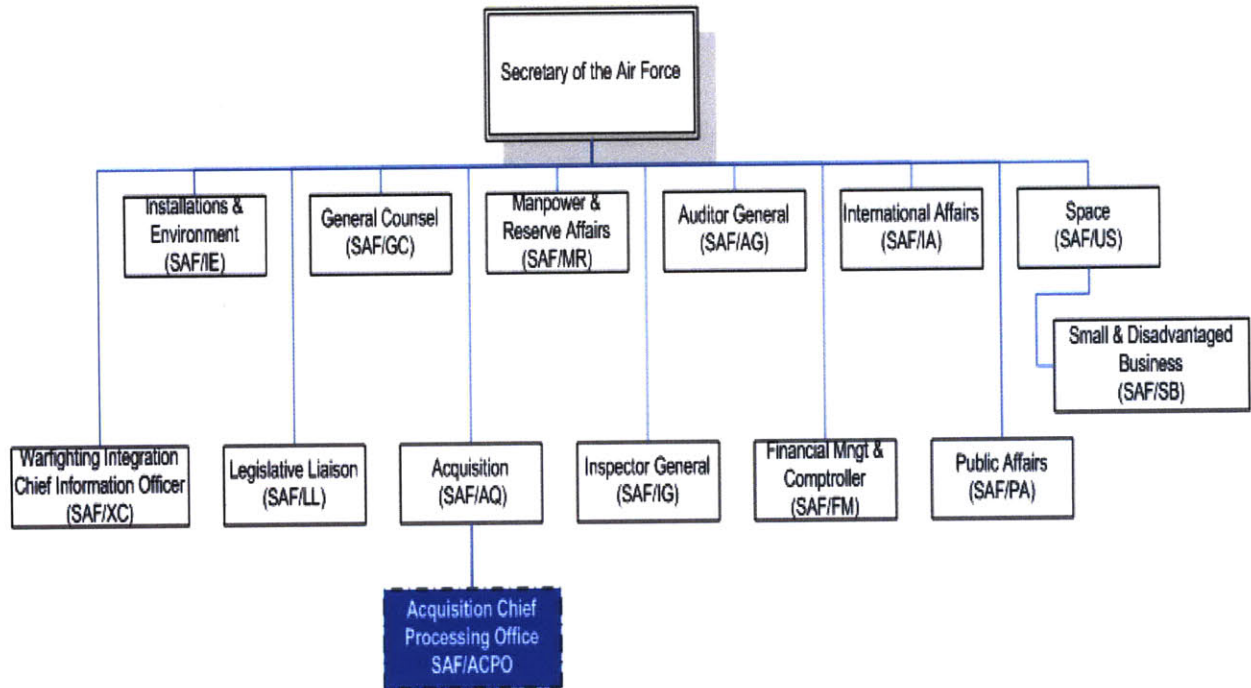


Source: GAO analysis of DOD data.

As a result of their contribution to the overall DOD cost and schedule problems, the USAF created the ACPO to address the shortfalls in the USAF acquisition process and marshal the service through a corrective process. In order to do so, ACPO leadership is working toward an end state in which acquisition planning is done from a more strategic (i.e. portfolio) perspective as opposed to its current tactical (i.e. program) approach. The ACPO has established a vision of focusing the acquisition community’s collective efforts into a cohesive strategy. In comparison to the current Coast Guard situation, these types of shortfalls and corrective actions have been addressed in the *Blueprint for Acquisition Reform*.

ACPO is one of several offices within the Office of the Secretary of the Air Force (SAF). Each office has unique and specific responsibilities. For the purposes of this study, ACPO was considered the principal enterprise.

**Figure 5: SAF/ACPO Organizational Chain**  
 (Source: U.S. Air Force)



**Strategic Plan and Goals**

At the time of the study, the ACPO did not have a strategic plan. However, the strategic plans and objectives of its two closest stakeholders (the USAF and the Office of the Assistant Secretary for Acquisition), provided the overarching guidance for the ACPO charter. In other words, the de facto ACPO strategic plan devolves from those two sources. The USAF’s third strategic objective provides a direct linkage to the ACPO charter. The third objective mandates a focus on:

“Priority 3: Recapitalizing and modernizing our aging aircraft, satellites, and equipment...to optimize the military utility of our systems and to better meet 21st Century Challenges (AF Strategic Plan, 2008).”

This strategic objective, or priority, is similar to the Coast Guard’s CIAO #1 issued by Admiral Allen.

The Assistant Secretary for Acquisition provides direction, guidance and supervision of plans, programs and budgets, as well as oversight of RDT&E and initial spares procurement. It also provides program support for USAF acquisition mission areas: Information Dominance, Global Power, Global Reach and Space and Nuclear Deterrence. It develops the policy and manages the workforce in the functional areas: Acquisition Management, Contracting and Science, Technology and Engineering (SAF/AQ Mission Statement and Vision, 2008).

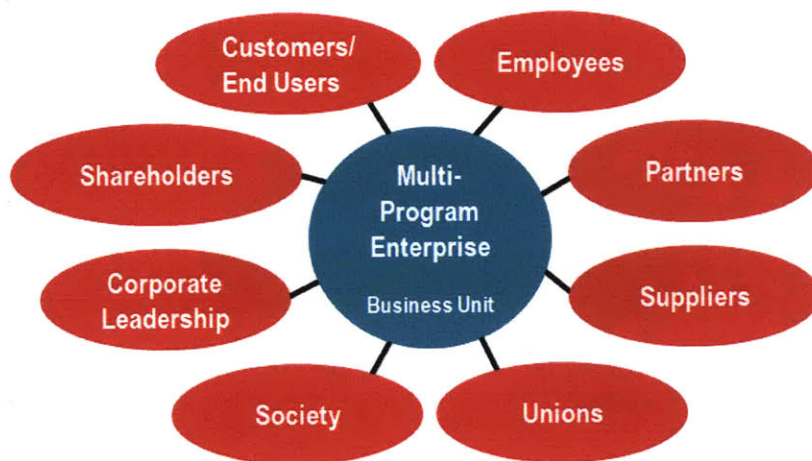


The ACPO charter flows directly from its relationship with these two stakeholders. More importantly, the charter along with the direct influence of these primary partners provides the “strategic” compass and goals that the ACPO needs in executing its key processes (Acquisition Reform integration, Strategic Planning, Process Reengineering and Develop and Sustain Warfighting Systems).

**Enterprise Stakeholders**

The definition used to determine and identify stakeholders of the ACPO is: Any group or individual who directly or indirectly affects or is affected by the level of achievement of an enterprise’s value creation processes.

**Figure 6: Example of Enterprise Stakeholders**  
 (Source: MIT Course ESD.61 Lecture 4, 2008)



**Table 2: Major Stakeholders of ACPO**

STAKEHOLDER	DESCRIPTION
Office of the Secretary of Defense (OSD)	One of the primary purposes of the OSD is to ensure that the U.S. warfighting forces have the necessary tools to conduct their missions. OSD could potentially use the information produced by SAF/ACPO to support / advocate for / cancel USAF acquisition programs.
Office of the Secretary of the Air Force (SECAF)	One of the primary purposes of SECAF to ensure that the USAF has the necessary tools to conduct their mission. SECAF could potentially use the information produced by SAF/ACPO to support / advocate for / cancel USAF acquisition programs.
Joint Staff	The Joint Staff must ensure that U.S. defense forces are ready to conduct their missions. Similar to the OSD, the Joint Staff could potentially use the information produced by SAF/ACPO to support / advocate for / cancel USAF acquisition programs.

Secretary of the Air Force / Acquisitions (SAF/AQ) including associated acquisition programs	SAF/AQ can influence the type of data collected by SAF/ACPO from each acquisition program within the USAF. In addition, SAF/AQ could potentially use the information provided by SAF/ACPO to make decisions concerning the funding levels of each acquisition program.
Office of Management and Budget (OMB)	OMB could potentially use the information produced by SAF/ACPO to construct the President's budget request to Congress for AF acquisition programs.
Congress	As the purse-string holders, Congress will enact the level of funding for USAF acquisition programs, having a direct impact on the mission of the SAF/ACPO.
Warfighter (AF Major Commands and AF as a whole)	They are the end-user of the products that will be produced in the USAF acquisitions program, which are continually reviewed by the SAF/ACPO.
Industry	The work accomplished by USAF contractors (i.e. Boeing, Lockheed, etc...) will be evaluated by the SAF/ACPO. These evaluations can determine if a contractor is meeting cost projections, on schedule and producing quality assets according to specification.
International Community	The international community can benefit from a stronger USAF in terms of regional safety and security. In addition, international industries may benefit from business with typical AF contractors as they supply various parts, etc....
American Public / American Taxpayers	Americans will benefit from a stronger USAF in terms of safety and security. Taxpayers influence Congress as to how money is being allocated.

Despite its relatively small cost and manning profile, the ACPO coordinates with a myriad of organizations and impacts the execution of a portfolio of programs valued in excess of \$40 billion. The following figure provides two examples of the analysis conducted during the study to determine the scope and context of the value exchange that occurs between the ACPO and its stakeholders.

Figure 7: Stakeholder Value Examples

### Office of Management and Budget (OMB) Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>Indirectly provide data on health of Air Force acquisitions programs (key metrics include: Nunn-McCurdy breaches, annual cost growth, cycle time)</li> <li>Indirect assurance that Presidential Directives are being addressed</li> <li>Indirect responses to questions concerning AF acquisition programs</li> <li>Exchange of AF best practices</li> </ul>	<p><b>OMB</b></p> <ul style="list-style-type: none"> <li>Program reviewer for AF acquisition programs</li> <li>Director of OMB</li> <li>Budget Coordinators</li> </ul>	<ul style="list-style-type: none"> <li>Administrative support of AF acquisition program budget request in Congress</li> <li>Assessment of AF acquisition program in President's Budget and Performance Plan</li> <li>Exchange of Government best practices</li> </ul>

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### Warfighter Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>Assurance that they are receiving the correct systems capability at the correct time for the correct price.</li> </ul>	<p><b>Warfighter</b> (end-user)</p> <ul style="list-style-type: none"> <li>AF major commands</li> <li>All AF personnel</li> </ul>	<ul style="list-style-type: none"> <li>Field level needs and requirements</li> <li>Field level feedback on products</li> </ul>

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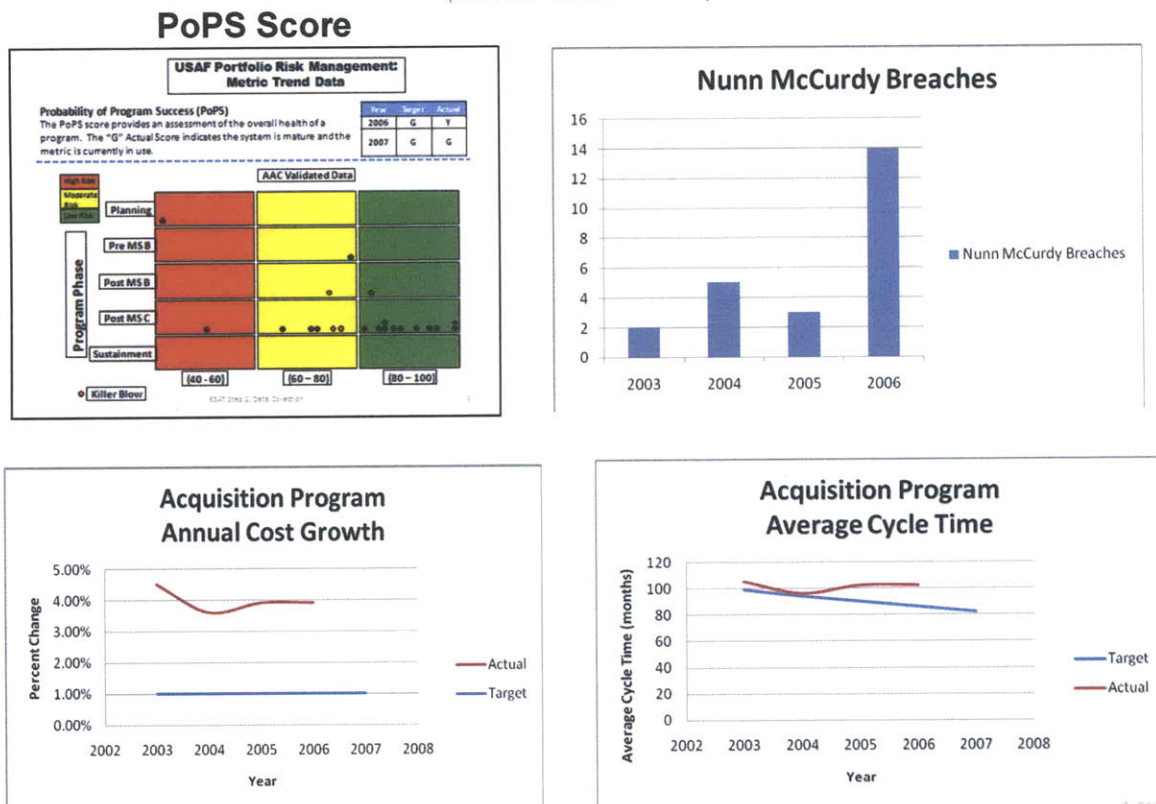


## Metrics

The ACPO is at the center of the USAF's efforts to transform the process used to develop, acquire, deliver and sustain information and weapon systems. Key to this effort will be the USAF's ability to determine the health of each acquisition program and its alignment with the strategic policy used to manage the acquisitions portfolio. The ACPO will rely upon the identification and evaluation of a common set of enterprise-level metrics to accomplish this challenging task. As of the time of this study, the selection of these key metrics had not been finalized; however, ACPO does have a core set of proven metrics that they were utilizing.

**Figure 8: Metrics Used By ACPO**

(Source: U.S. Air Force)



The Probability of Program Success (PoPS) is a web-based tool that assesses the health and relative risk of an acquisition program. PoPS determines a score (ranging from 42 to 100) for each program based on such factors as the program's funding level, development phase, executability, progress and anticipated risks. The data in the PoPS system is manually entered by each program manager and is updated on a prescribed schedule. An overall percentage score is calculated for the program's overall health along with an associated color status (Green, Yellow or Red). The PoPS score of each program is captured on a Monthly Acquisition Report (MAR) which is utilized by the ACPO and senior USAF leaders. Appendix A provides detailed information concerning the correlation between a program's PoPS score and its associated color status, as well as an example of a MAR.

Table 3 utilizes one of the ESAT templates to show some of the most likely metrics the ACPO will use in its efforts to assess the health of the USAF's acquisition programs and transform the Service's acquisition process.

**Table 3: Enterprise Metrics**

Enterprise Metric	What is measured	Target Value	Current Value	Trend	Status
PoPS score	Holistic evaluation of program health	>=80	TBD	TBD	
Cost	Program expenditure versus budget constraints	>=80	TBD	TBD	
Schedule	Progress versus scheduled achievements	>=80	TBD	TBD	
Performance	System capability versus desired capability	>=80	TBD	TBD	
Nunn-McCurdy Breach	Exceeding 15% cost overruns in Program Acq Unit Cost (PAUC) or Avg Unit Procurement Costs (AUPC)	>=80	TBD	TBD	
Average Program Cycle Time	Time from funded need to warfighter delivery	>=80	TBD	TBD	
Manning	Sufficient manpower to meet program goals	>=80	TBD	TBD	
Contractor Health	Contractor ability to meet contractual requirements	>=80	TBD	TBD	
Program Fit	In line with DOD and AF goals and vision	>=80	TBD	TBD	
Program Advocacy	Presence of senior level support for program	>=80	TBD	TBD	

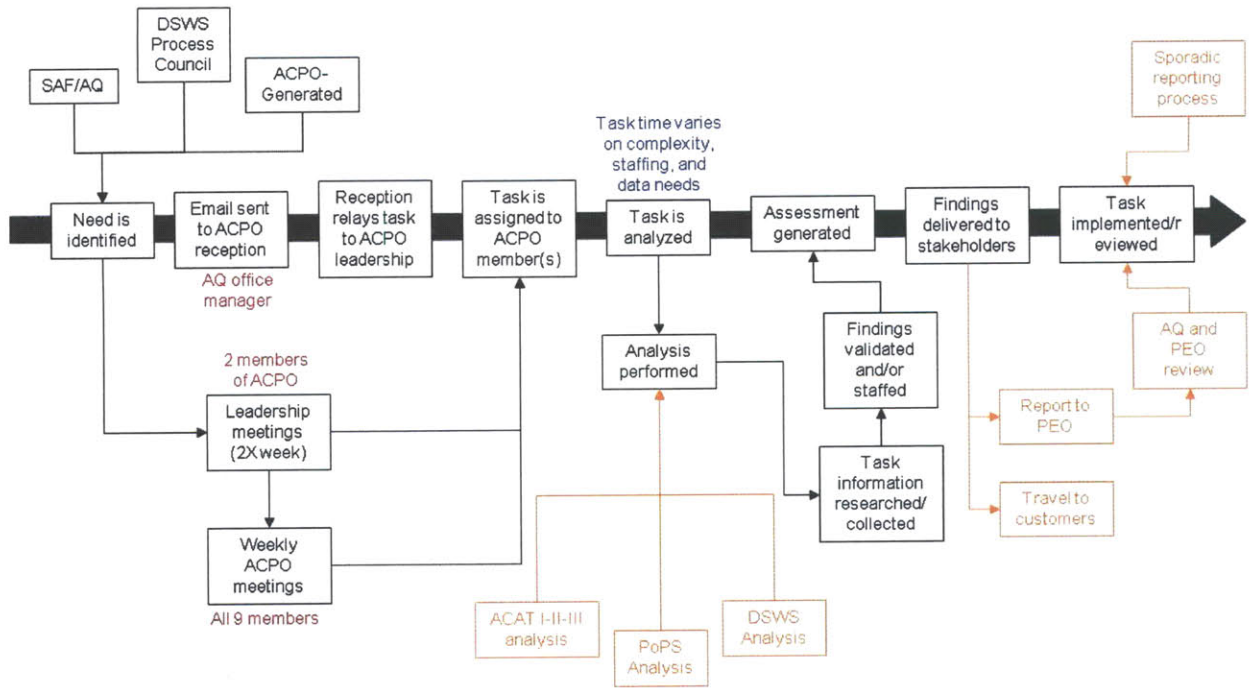
### *Processes*

The ACPO functions in a role similar to a management consultant firm. In that role, it analyzes “corporate” processes and organizations and offers recommendations to USAF senior leadership on the optimal approach to properly align acquisition programs with the overall strategic plan. From a strategic perspective, ACPO is focused on the management and development of enterprise competencies, such as acquisition reform integration, strategic planning and process reengineering. However, at the time of this study, ACPO was still in a developmental state and working to define and document its daily processes and value stream.

While conducting the study, the MIT team found that, in order to provide its services in the most efficient manner, ACPO relied heavily on obtaining accurate, consistent and valid data from its databases and the process owners who populate those databases. To ensure the quality of its source data, ACPO employs such techniques as site visits and the use of contracted studies. By remaining proactive in the maintenance of this capability, ACPO has been able to operate reactively to the support requests which drive its daily operations. The following figure provides a flow diagram of ACPO's internal process.



**Figure 9: ACPO Internal Processes**



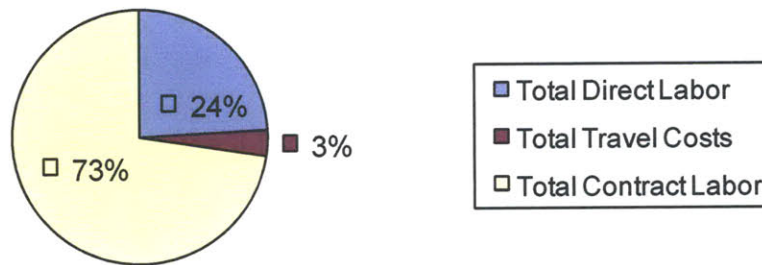
**NOTE:** BLACK boxes represent processes agreed upon between MIT team and ACPO; ORANGE boxes represent processes viewed solely by MIT team

The introduction of a program or process for the ACPO to review is influenced by a number of different stakeholders. For example, the ACPO will commit approximately 60% of its personnel resources to support the efforts of the SAF/AQ. As a result, a significant number of programs and processes reviewed by ACPO come directly from SAF/AQ. A second example is that the ACPO dedicates staff resources to routinely track 13 metrics for the Develop & Sustain Warfighting Systems (D&SWS). The introduction of a program or process typically follows one of two paths. In the first path, the program or process is ACPO generated. These programs or processes are discussed during ACPO leadership meetings two times per week. They are then relayed to the entire ACPO department in weekly meetings and assigned to staff members. The second path typically involves an e-mail from a key stakeholder sent to the ACPO reception focal point - an office manager. The focal point obtains the consent of the ACPO leadership and then assigns the programs to an appropriate analyst(s) in ACPO. The program or process is then filtered and developed through a comprehensive review process. The ultimate result of these analyses is the generation of a program assessment and a risk/benefit analysis. These findings are delivered to both the Program Executive Officer (PEO) and appropriate stakeholders. These stakeholders, along with a sporadic reporting process on the status of the portfolio, help maintain the portfolio programs.

### ***Enterprise Costs***

The ACPO has a staff of 3 military officers, 4 government civilians and 2 contractor personnel. These members conduct the daily operations of the ACPO mission at a total direct labor cost of \$680,000 annually. The unit’s travel budget is more than \$90,000 per year. The ACPO also contracts studies which can have manning requirements 3 times as large as the ACPO manning level. These studies translate to an estimated cost of \$2 million annually in contracted labor. Based on these estimates, the total annual budget is approximately \$2.8 million, comprised of direct labor, travel and contract labor. Figure 10 depicts the enterprise cost breakdown structure showing the distribution of the costs as a percentage of the total annual budget.

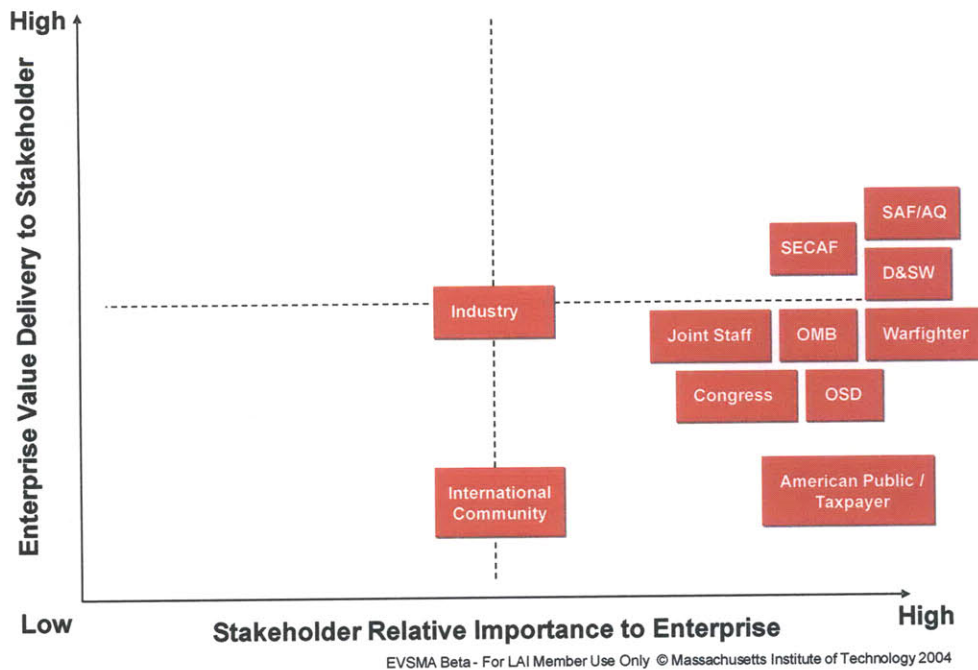
**Figure 10: Enterprise Cost Breakdown**



### ***Stakeholder and Enterprise Value Exchange Analysis***

Although the ACPO has been given a formal charter with specific objectives and goals, it has not been able to focus on the achievement of these objectives due to an overwhelming level of tasks provided by senior leadership. The ACPO has been operating in a more reactive mode, addressing these short-fused tasks. In the past, ACPO has attempted to take a more proactive approach to accomplish its objectives as depicted in the charter. With this in mind, charter specific objectives have been lagging - performance has been low. On the other hand, the ACPO seems to have had success with the miscellaneous projects (i.e. answering questions for the record from OMB, Congress, etc...) assigned to it from senior leadership. The Stakeholder Value Comparison and Value Exchange templates in Figure 11 reflect the ACPO’s current state, at the time of the study, and depict the performance gaps in meeting their objectives.

Figure 11: ACPO Stakeholder Value Comparison



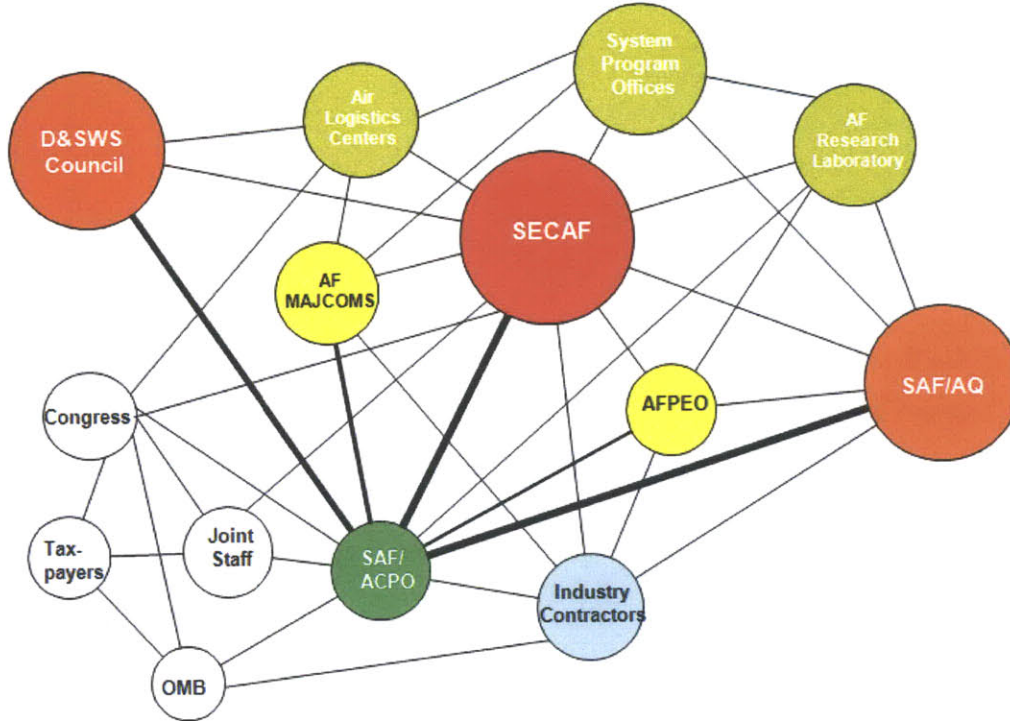
The Stakeholder Value Comparison template depicts the ACPO’s struggle with achieving and addressing its objectives caused by short-notice support requests. SECAF, D&SWS and SAF/AQ utilize the ACPO as a quick-response staff to answer hot button issues from Congress, the Joint Chiefs, etc... The ACPO demonstrates high performance in responding to these tasks, delivering high value to these stakeholders. Since many of these tasks do not directly help the ACPO move towards accomplishing their objectives, the value delivered to these stakeholders is depicted as being in the lower portion of the upper right quadrant (high value delivery to the stakeholder / high importance to the enterprise). The majority of the stakeholders are shown in the lower right quadrant (low value delivery to the stakeholder / high importance to the enterprise). This positioning is a direct result of the past reactive vice proactive mode of the ACPO. The enterprise has not been able to focus on their objectives; therefore, a performance gap exists with these stakeholders. Industry is higher than these lower right quadrant stakeholders because the USAF acquisition programs are over budget; industry receives this extra funding.

***The ACPO Environment***

As previously mentioned, SAF/ACPO often receives short-notice support requests from the Secretary of the Air Force (SECAF) and the SAF/AQ. At the time of the study, the relative strength of the ACPO’s interaction with these two offices can be deduced with a quick review of its network model. These requests are usually of a sensitive nature and demand a thorough analysis in a minimum amount of time. As such, SECAF and SAF/AQ require products from ACPO which are timely, accurate and complete.



**Figure 12: ACPO Network Model**



***ACPO Staffing Levels***

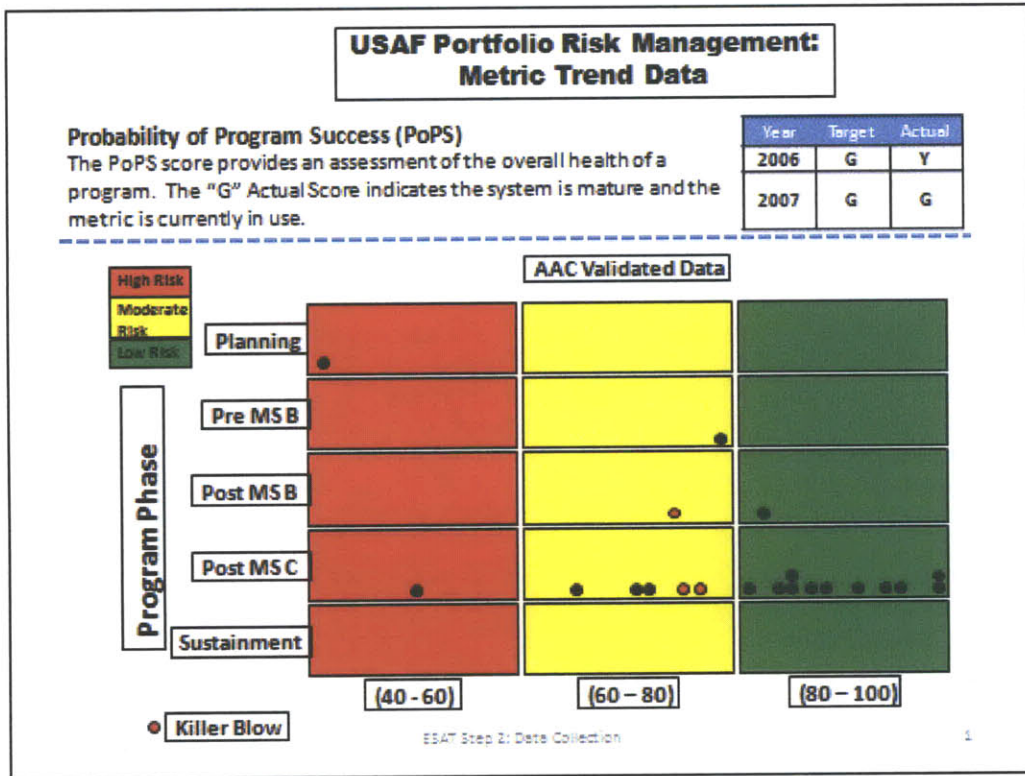
It is reasonable to assume that the ACPO’s high operations tempo and workload would warrant a significant increase in manning levels. However, senior leadership at the ACPO believes that a relatively small staff size is optimal for the nature of the organization’s mission. As such, the ACPO’s recent expansion from 8 to 9 staffers will remain at that level for the foreseeable future. By keeping the manning level small, the leadership hopes to ensure efficiency of operations through the use of an experienced, knowledgeable and focused staff. Further growth, in their assessment, would dilute the overall efficiency.

***Enterprise Metrics Analysis***

The MIT team analyzed the metric trend data utilized by the ACPO. The metrics presented in this section were filtered from the ACPO’s roster of metrics, at the time the study was conducted, and represent the metrics which best meet the criteria for being categorized as enterprise-level metrics.

In the below figure, the data on the Probability of Program Success (PoPS) is presented in two contexts. The upper portion presents the raw trend data from a system perspective. The PoPS system is currently functioning and providing data to all stakeholders. The lower portion presents the PoPS information in a data dashboard display. This context is the format in which decision makers and other stakeholders review the PoPS data to assess the health of the various programs under review.

Figure 13: PoPS Score and Dashboard Display  
 (Source: U.S. Air Force)

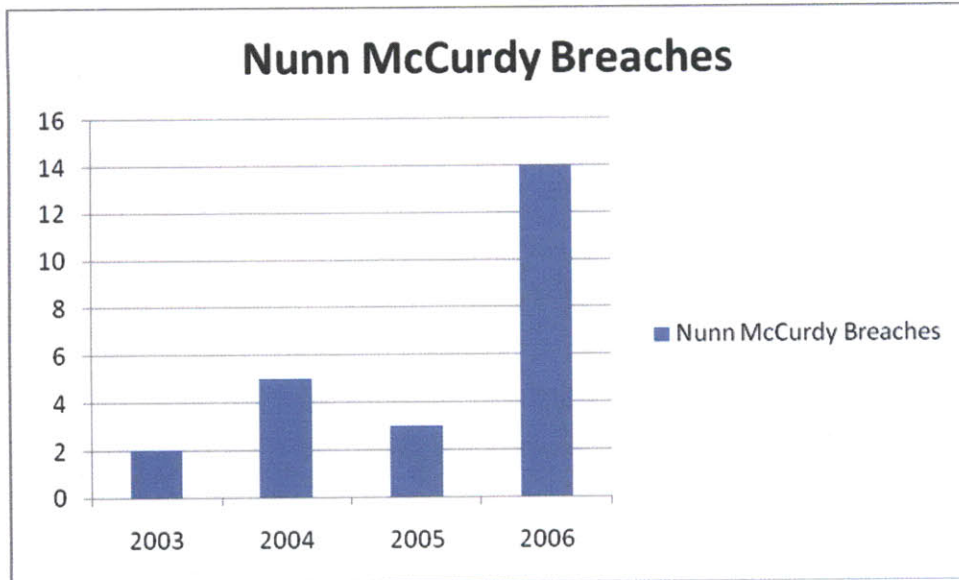


The PoPS score provides an assessment of the overall health of a program. The trend data indicates that the system is mature and it is used by the appropriate stakeholders. These stakeholders include the Program Executive Officers (PEOs), USAF Major Commands (MAJCOMs), System Program Offices (SPOs), Air Logistics Centers (ALCs) and contractors. The use of PoPS metric data is appropriate from an enterprise perspective. The system is a critical tool that the ACPO must utilize in order to execute its charter and achieve its strategic end state. To gain greater value from this metric, the MIT team determined that the ACPO will require additional data. To truly gain confidence in the PoPS evaluation data, it is necessary to obtain data which captures the validity, accuracy and completeness of the PoPS database. These additional pieces of data will make the PoPS system a more relevant and accepted tool upon which actionable decisions can confidently be established.

The Nunn-McCurdy Act requires DOD to notify Congress if a program's unit costs rises more than 15% above its baseline. If the program's unit costs were to rise by more than 25% above its baseline, the Secretary of Defense would then be required to "certify" to Congress that the program is essential to national security and is adequately managed (Nunn McCurdy, 2002). Failure to comply with the provisions of this Act could possibly result in program termination. Programs that breach the thresholds, especially the certification threshold, are subject to closer review by upper level management and to changes in management procedures.



**Figure 14: USAF Nunn-McCurdy Breaches**  
(Source: OMB Assessment, Air Force Acquisition Systems (10003214), 2006)



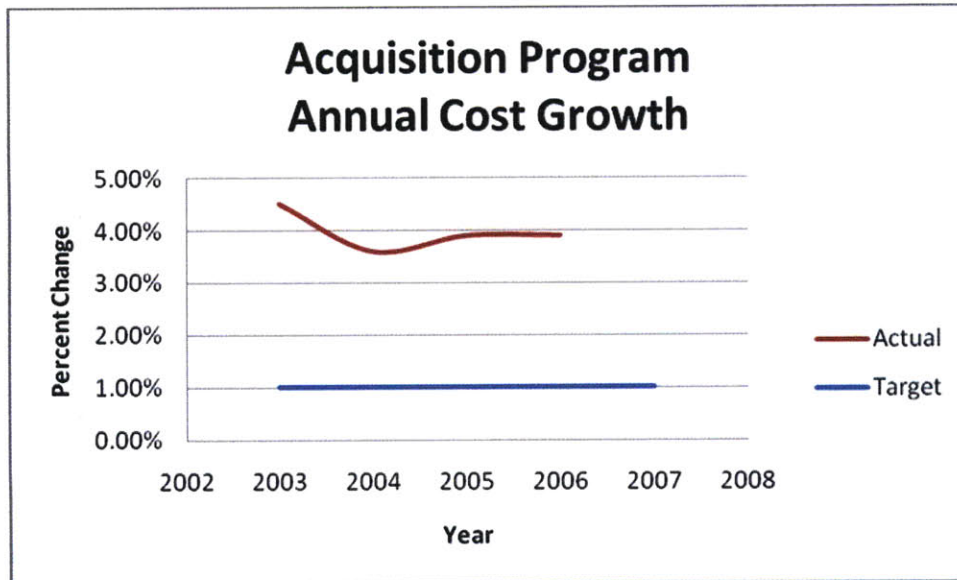
The trend data indicate a significant rise in this negative indicator. Since 2003, the USAF has experienced a 600% increase in the number of Nunn-McCurdy breaches. However, the trend data is not sufficient to determine if the ACPO actions have been deficient or have contributed to this troubling situation. Consequently, the ACPO would not be in a position to recommend adjustments to its processes.

While the use of this metric is appropriate from an enterprise perspective, the MIT team determines that this metric is of limited value. Although the metric ensures heightened visibility of a programmatic issue, its effectiveness is limited to a reactionary mode. As such, it would most likely be used to mitigate symptoms of the problem. The bureaucracy inherent in reporting this politically sensitive metric may delay the timely implementation of a solution to the problem's root cause. In addition, the metric is applied to individual programs and may mask problems with the overall acquisition portfolio. For example, it is possible to meet the metric target (0 Nunn-McCurdy breaches), but still have a portfolio that is significantly over budget. To gain greater value from this metric, the MIT team suggested that a similar threshold (i.e. 7%) could be applied to the entire portfolio. The use of such a sensitivity tool would allow decision makers to recognize the impact of multiple program overruns in situations where individual programs may not meet Nunn-McCurdy thresholds.

The annual cost growth metric applies to major acquisition programs, those costing more than \$300 million in development and/or \$2.2 billion in procurement (after allowing for inflation and quantity changes). The overall goal of the DOD and USAF is to keep year-to-year cost growth for major programs to 1% or less.



**Figure 15: USAF Program Cost Growth**  
(Source: OMB Assessment, Air Force Acquisition Systems (10003214), 2006)

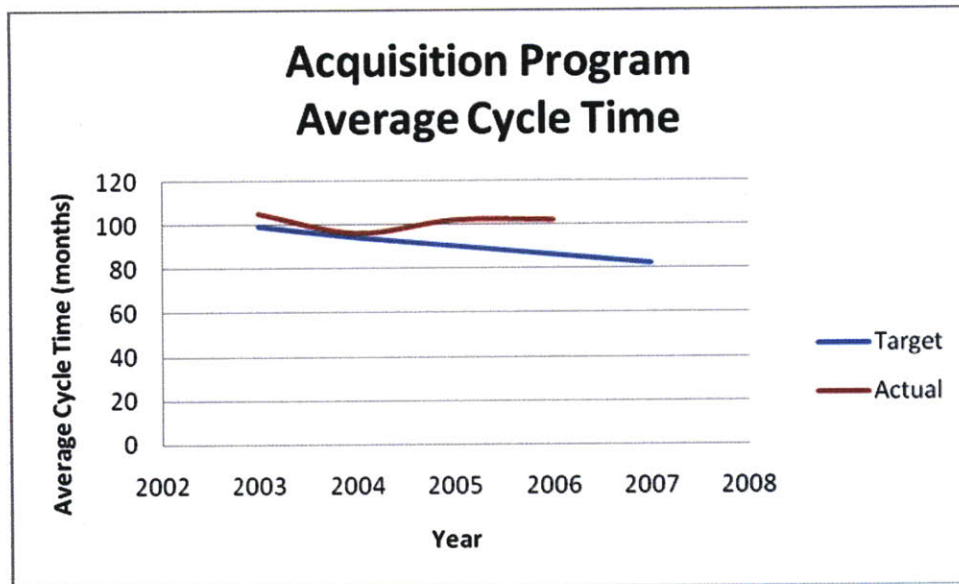


The trend data indicates that the metric target has not been met. USAF acquisition programs have experienced yearly cost overruns that are nearly 4 times greater than the acceptable threshold ceilings.

Once again, the MIT team determined that use of this metric is appropriate from an enterprise level. In order to strategically align the USAF acquisition system or re-engineer its processes, the ACPO must be able to determine the health of the system and validate the need for corrective actions. However, the MIT team believes that this data is not sufficient to determine if the ACPO actions have been deficient or have contributed to this troubling situation. Consequently, the ACPO would not be in a position to recommend adjustments to its processes. To gain greater value from this metric, the MIT team suggested that it would be necessary to determine a direct correlation between the performance measure and the ACPO strategic alignment and process re-engineering efforts. Doing so would provide direct linkage between the ACPO actions, its charter, and its value delivery processes.

The reduce average cycle time metric applies to major acquisition programs in the USAF acquisition system. It refers to the time it takes for a program to progress from inception (the start of development) to completion (end of production) and is a measure of the efficacy of the acquisition system.

**Figure 16: Program Average Cycle Time**  
 (Source: OMB Assessment, Air Force Acquisition Systems (10003214), 2006)



The trend data indicates an average cycle overrun of 9 months since 2003 and 14 months since 2005. The target is not being met and is exhibiting an accelerated rate of degradation.

The MIT team determined that this metric is an appropriate, enterprise-level indicator. Stakeholder analysis confirms that cycle time is a significant value item to every stakeholder in the enterprise from the taxpayer to Congress. However, according to the analysis of the MIT team, the impact of the ACPO on this metric is not directly evident from this information alone.

The MIT team determined that the analysis of the ACPO enterprise metrics revealed two fundamental issues. First, the enterprise is not meeting the strategic goals inherent in the use of these metrics. More importantly, the specific metrics employed by the ACPO do not provide a direct correlation between the organization's performance and the effectiveness of its actions. This suggests that the enterprise may require a new framework from which it can establish such a correlation and determine appropriate measures to enhance value delivery. A more relevant framework would establish a direct linkage of the ACPO metrics to its strategic alignment, process engineering/re-engineering and acquisition support efforts. As part of utilizing this framework, the ACPO staff would be required to review their specific actions in these arenas and continuously re-evaluate the efficacy and implementation of their recommendations. The enterprise would be able to measure itself against standards that support its strategic goals. The current set of metrics fails to reach that standard because it is loosely associated with those goals.

### ***X-matrix Evaluation and Analysis***

The X-matrix is an ESAT tool which can be used to assess the alignment of enterprise goals, metrics, processes and stakeholder values. With the use of this tool, the potential interactions between these attributes can be assessed. The grids in each corner of the matrix represent potential interactions between the rows and columns they connect (strategic objectives, enterprise metrics, enterprise processes and stakeholder values). Starting in the upper left quadrant and moving around the matrix in a counter-clockwise direction, the following questions are used to help fill in the matrix with either strong, weak, or no interaction categorizations.

- Is this strategic objective measured by this metric?
- Does this metric measure performance of this process?
- Does this process contribute to delivering this stakeholder value?
- Is this stakeholder value represented by this strategic objective?

ESAT deals primarily with enterprise-level processes. The MIT team used this guiding principle; therefore, the X-matrix analysis presents the enterprise-level processes that have been identified by the strategic plan and charter of the SAF/ACPO:

- Acquisition Reform Integration
- Strategic planning and re-alignment
- Process re-engineering
- Develop and Sustain Warfighting Systems (D&SWS)

The term process is used to denote a series of actions, events, etc... at several possible levels of detail. Work Processes are a set of specific actions/operations involved in accomplishing a defined scope of work by a defined set of employees (e.g. assemble sub-assembly A from 2 units of Part X1 and 3 units of Part Y14). Business Processes are a sequence of events, decisions, or activities involved in processing a transaction (e.g. receipt of customer order). Enterprise Processes are a set of strategic, high level, cross-functional activities, decisions and interfaces involved in creating and delivering value to one or more enterprise stakeholders. Using this construct, the MIT team decided to include all three of these processes in their analysis, since the ACPO is faced with the challenge of restructuring its internal processes while simultaneously attempting to fulfill its chartered requirements. It must be noted that the enterprise metrics used in the X-matrix are not designed to reveal progress in the ACPO internal processes area. However, the MIT team believed these actions were noteworthy and necessary in order to gain a complete understanding of the dynamics within the enterprise.

In addition to the original 4 metrics: Number of Nunn-McCurdy breaches, Annual Cost Growth, Average Cycle Time and PoPS score. The MIT team included five additional metrics in the X-matrix, which were identified by the enterprise as strong candidates for use as enterprise-level metrics. These metrics are:

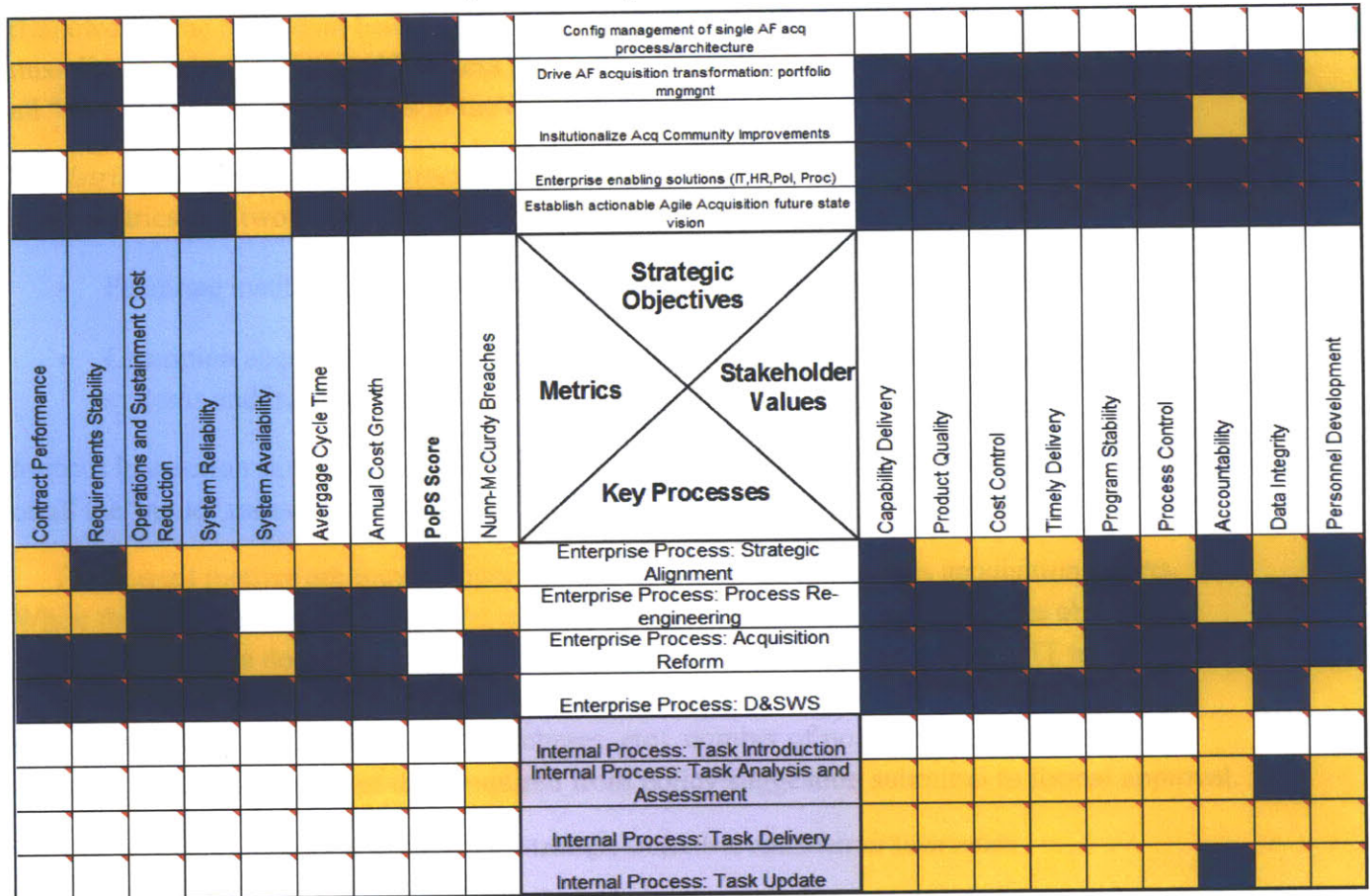
- “*System Availability*” refers to the percentage of acquisition systems/products available to the warfighter stakeholders. For aircraft, this translates into the number of aircraft available divided by the total number of aircraft in the inventory. This metric is user generated.
- “*System Reliability*” is an indicator of product quality and is tracked by such parameters as Mean Time Between Failure and Mean Time To Repair. As part of every acquisition effort a minimum level of reliability is specified based upon the intended use, desired level of robustness and operational environment of a specific system or product.
- The “*Operations and Sustainment (O&S) Cost Reduction*” metric is intended to be used as a gauge on the total ownership costs of a system. When used as a trend item, this metric may reveal insight on the quality of a fielded system and whether a user need is being appropriately met.
- The “*Requirements Stability*” metric seeks to assess the number and scope of contract changes. Significant changes in these areas may be indicative of larger, programmatic issues and have direct correlation to overall program health.
- The “*Contract Performance*” metric is a composite which reflects the status of such traditional indices as cost variance, variance at completion and schedule variance. The use of this metric may provide insight into overall program health and can possibly be used as a predictive tool in determining executability of an effort.

The MIT project team performed a thorough review of the Stakeholder Values of the ACPO enterprise. Many of the value target areas were common across all the stakeholders. In addition, the MIT team determined that some of the value target areas could be further decomposed into latent goals and desires of which the stakeholders may not be fully aware. Therefore, the value categories presented in the X-matrix were selected after thoughtful consideration of these two points (commonality and latency). As such, they represent an optimal blend of shared values and identification of associated values. For example, Cost Control is an element that nearly all stakeholders consider to be of critical importance. In addition, the Data Integrity category is an inherent need (and common assumption) of the stakeholder although its importance may not be readily apparent or clearly articulated.

Of all the elements presented in the X-matrix, the strategic objectives are the most clearly identified. They devolve directly from the ACPO charter and mission statement.



Figure 17: Completed X-matrix



Key: Blue = Strong Interactions, Yellow = Weak Interactions, White = None

Table 4: Summary of X-matrix Interaction Data

INTERACTIONS	STRONG	WEAK	NONE	TOTAL
Strategic Objectives and Metrics	16	14	15	45
Metrics and Key Processes	22	13	37	72
Key Processes and Stakeholder Values	28	36	8	72
Stakeholder Values and Strategic Objectives	34	2	0	36
<b>TOTAL</b>	<b>100</b>	<b>65</b>	<b>60</b>	<b>225</b>

A cursory review of the data shows 44% of the possible interactions are categorized as strong. Furthermore, “weak” and “none” interactions accounted for 29% and 27% of the remaining interactions, respectively. As a result of these interactions, the MIT team determined that the enterprise has established a moderately good foundation for its enterprise architecture. However, the relatively high number of “weak” and “none” interactions suggest more work is needed to

solidify the architecture. Based on the spread and allocation of values in the assessment framework, The MIT team believed that primary focus should be placed in the alignment (or mis-alignment) of the internal business processes. These four processes account for over 50% of all “weak” and “no” interactions in the enterprise.

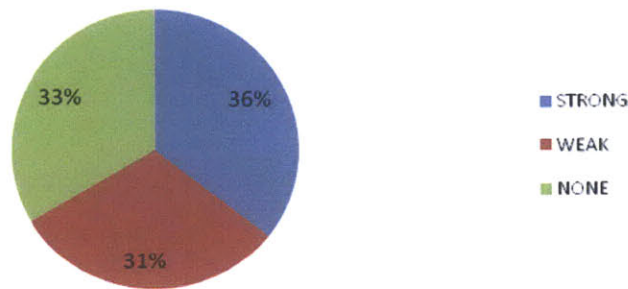
*Metrics and Strategic Objectives:* The analysis did not find any direct correlation between the set of metrics and two of the strategic objectives:

- Facilitate institutionalization of improvements across the acquisition community
- Champion acquisition enterprise enabling solutions in policy, process, information systems and human resources

Metrics interaction in these areas produced 15 out of a possible 45 “none” assessments and 25% of all the “none” measurements.

The current metrics are focused upon the health indices of the various acquisition efforts. While the trending of the data may be used with other arguments in support of the above objectives, the data do not have direct linkage to the strategic objectives. The MIT team suggested that more appropriate metrics for these areas may include data on funding for the specific target areas (i.e. training, IT purchases, etc), number of policy changes recommended and approved, and number of days required from policy suggestion submittal to formal approval.

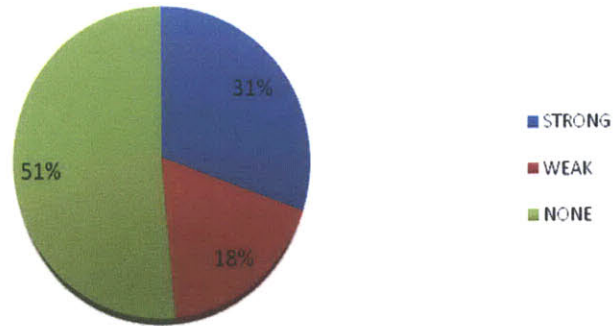
**Figure 18: Summary of Strategic Objectives and Metrics Interaction**



*Metrics and Key Processes:* The findings indicated the set of enterprise metrics successfully measure enterprise process effectiveness, with over 61% of these interactions appearing strong. Weak interactions account for less than 20% of the total number of interactions in this quadrant of the X-matrix. Specifically, more than half of those weak interactions are attributable to the strategic alignment and reengineering processes. The vast majority of the “none” interactions are attributed to internal processes.

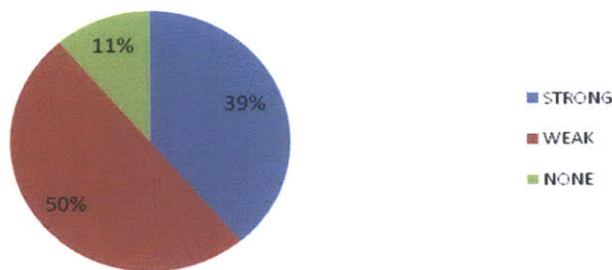


**Figure 19: Summary of Metrics and Key Processes Interaction**



*Key Processes and Stakeholder Values:* The MIT team found that the enterprise is inconsistent in this area, as nearly 40% of its processes strongly contribute to stakeholder value while 50% offer a weak correlation. These strong indicators suggest that adherence to these elements of the enterprise architecture should support the overall efforts to meet stakeholder expectations. The largest area of improvement would be to align the enterprise processes with a more timely delivery of enterprise products and services. The misalignment of proper support organizations and inaccurate input data used to create outputs (either actual product delivery or product delivery estimates) results in a product delivery delay. The MIT team concluded that this interaction could be improved with the proper support (such as suppliers accurately explaining their capability to produce “X” number of aircraft parts by a certain specified date) to the correct organizations at key points during the process.

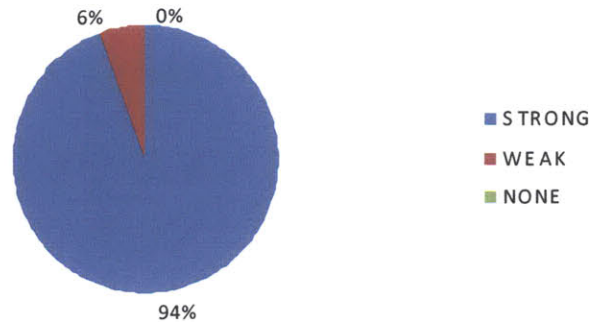
**Figure 20: Summary of Key Processes and Stakeholder Values Interaction**



*Stakeholder Values and Strategic Objectives:* Perhaps with the strongest interactions in the X-matrix analysis conducted by the MIT team, almost all the enterprise stakeholder values are strongly represented by the enterprise strategic objectives. This relationship means that the enterprise goals are currently aligned with what their customers deem important. This direct alignment is not a coincidence, since the key stakeholders assisted in determining the strategic objectives outlined in the SAF/ACPO charter – the charter reflects their values.



Figure 21: Summary of Stakeholder Values and Strategic Objectives Interaction



### *Lean Enterprise Self Assessment Tool (LESAT)*

The LESAT is a tool for executive self-assessment of the present state of “leanness” of an enterprise and its readiness to change. The LESAT facilitates self-assessment of an organization at the enterprise level and is intended to highlight key integrative practices at the uppermost levels of an enterprise. The LESAT survey is provided in Appendix B. The MIT team conducted a LESAT analysis on the ACPO and produced the following overall results:

Table 5: Overall LESAT Score

Current State - Overall LESAT Score			
	Mean	Variance	Range
Current	2.2	0.4	0.4

The two leaders of the ACPO enterprise completed the LESAT. For a majority of the LESAT, both leaders provided input for the various sections; however, there were inconsistencies and incompleteness in the assessment conducted by the MIT team. These discrepancies highlight the possibility of perceived differences in the context of the question by each respondent. In general, the results show that LESAT subsections I.A Enterprise Strategic Planning and I.G Focus on Continuous Improvement are the areas in the most need for improvement. These areas need to be improved in order to drive the enterprise towards lean success.

### *LESAT Section I (Leadership)*

Table 6: Section I – Lean Transformation / Leadership Score

Section I - Lean			
	Mean	Variance	Range
Current	2.1	0.5	0.5

The MIT team found that the ACPO recognizes that it currently does not utilize lean principles in delivering value to its stakeholders, nor does it have the proper leadership support to drive lean transformation. This section was the lowest scoring section for the enterprise, with a

mean current state of 2.1 and a mean desired state of 3.7. According to gap analysis conducted by the MIT team, the overall largest problems facing ACPO are contained in this section. They are subsections I.A Enterprise Strategic Planning and I.G Focus on Continuous Improvement (average gaps of 2.3 and 2.2, respectively).

*Section II (Life Cycle Processes)*

**Table 7: Section II – Life Cycle Processes**

<b>Section II - Life Cycle Processes</b>			
	<b>Mean</b>	<b>Variance</b>	<b>Range</b>
<b>Current</b>	<b>2.5</b>	<b>0.3</b>	<b>0.4</b>

This section was rated the highest for both its mean current state of 2.5 and mean future state of 4.0. In particular, the area where the ACPO leaders hope to drive the most change revolves around better defining customer requirements. Subsection II.B Requirements Definition has an average desired state of 4.3 with a mean gap of 2.0. The MIT team also noted that this section included the most incomplete data (e.g. No input was provided in subsections II.D thru II.F by one leader).

*Section III (Enabling Infrastructure)*

**Table 8: Section III – Enabling Infrastructure**

<b>Section III - Enabling Infrastructure</b>			
	<b>Mean</b>	<b>Variance</b>	<b>Range</b>
<b>Current</b>	<b>2.4</b>	<b>0.3</b>	<b>0.4</b>

Section III of the LESAT is broken down into two subsections: Lean Organizational Enablers and Lean Process Enablers. The MIT team found that while both leaders agree in terms of the enterprise’s desired states in these subsections, they believe the enterprise is currently performing at a higher lean level in their Lean Organizational Enablers than their Lean Process Behaviors. Subsection III.A Lean Organizational Enablers has an average desired state of 4.0 and an average gap of 1.2. Subsection III.B Lean Process Behaviors has an average desired state of 3.8 and an average gap of 2.0.

The LESAT tool also allowed the MIT team to assess areas where the enterprise has already embraced some aspect of lean integration. Only 4 of the 54 lean practices assessed exhibited lean enterprise integration. They are:

- I.D.4. Employee Empowerment
- I.D.5 Incentive Alignment
- II.A.4. Resource and Empower Program Development Efforts

- II.B.1 Establish a Requirements Definition Process to Optimize Lifecycle Value

***Enterprise Waste and Potential Improvements***

The MIT team’s initial findings of the LESAT supported their observations made from the stakeholder value analysis, metrics analysis and X-matrix. In addition, the LESAT provided additional information on waste. The respondents indicated deficiencies in several significant areas:

- Daily tasks and processes are not aligned with desired Strategic-level processes,
- Lack of internal, self assessment metrics,
- Senior management is not personally/actively involved in establishing a LEAN vision,
- No clear sense of what the future state should be,
- Not developing Lean structure or behavior,
- Not doing the things needed to ensure continuous improvement,
- Not incorporating downstream stakeholder values into products and processes.

Using all of the data obtained from the stakeholder value analysis, metrics analysis, X-matrix and LESAT, the MIT team formed several conclusions in the evaluation of waste and potential opportunities for improvement. The six broad categories of enterprise waste as defined in the ESAT Guide were used by the MIT team as a framework for this analysis. The categories are people, leadership, processes, suppliers, information flow and customers. The below table provides a summary of their results.

**Table 9: Enterprise Wastes and Potential Improvements**

<b>CATEGORY</b>	<b>WASTE</b>	<b>POTENTIAL IMPROVEMENTS</b>	<b>RECOMMENDATIONS</b>
<b>People</b>	<ul style="list-style-type: none"> <li>• No accountability in data accuracy</li> <li>• Untrained workforce cannot contribute</li> <li>• Data accuracy is not trusted and not high priority to workforce</li> </ul>	<ul style="list-style-type: none"> <li>• Establish accountability</li> <li>• Train workforce on data reporting methods</li> <li>• Educate workforce on the importance of data integrity</li> <li>• Educate leaders on the importance of data integrity</li> </ul>	<ul style="list-style-type: none"> <li>• ACPO staff increase</li> <li>• Training opportunities</li> <li>• Incentive programs</li> </ul>
<b>Leadership</b>	<ul style="list-style-type: none"> <li>• No motivation to establish lean vision</li> <li>• No clear sense of what the future state should be</li> <li>• Lack of internal, self assessment metrics</li> <li>• No lean structure development</li> <li>• No continuous improvement measures</li> </ul>	<ul style="list-style-type: none"> <li>• Involve leaders in establishing lean vision</li> <li>• Define future state</li> <li>• Establish internal, self assessment metrics</li> <li>• Develop lean structure and behavior</li> <li>• Ensure continuous improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Embed authority in support</li> <li>• Encourage innovation and risk taking</li> <li>• Communicate and update a clear vision of the lean future state</li> </ul>
<b>Processes</b>	<ul style="list-style-type: none"> <li>• Daily tasks and processes not aligned with desired strategic-level processes</li> </ul>	<ul style="list-style-type: none"> <li>• Task-strategy alignment</li> <li>• Incorporate stakeholder values into processes</li> </ul>	<ul style="list-style-type: none"> <li>• Periodic data review meetings</li> </ul>

	<ul style="list-style-type: none"> <li>• No incorporation of downstream stakeholder values into processes</li> <li>• Disagreement between SAF/AQ and PEO's on level of information provided for analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Improve capability to manage risk, cost, schedule, and performance</li> <li>• Establish requirements definition process to optimize lifecycle value in the data acquisition process</li> <li>• Optimize future requirements definition by incorporating closed loop processes</li> </ul>	
<b>Suppliers</b>	<ul style="list-style-type: none"> <li>• Inadequate data for efficient performance assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Identify required data for efficient performance assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Improve data provided by suppliers through training personnel in accuracy and consistency of supplier data</li> </ul>
<b>Information Flow</b>	<ul style="list-style-type: none"> <li>• Over-processing information (e.g. back-up charts)</li> <li>• Fractured information systems</li> </ul>	<ul style="list-style-type: none"> <li>• Establish clear requirements on information needed, desired, and not necessary to reduce over processing of information</li> <li>• Improve overall enterprise information flow</li> <li>• Optimize information flow for open and timely communications, with information exchanged when required</li> </ul>	<ul style="list-style-type: none"> <li>• Improve communications with data collection personnel</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>• Constant customer firefighting tasks take away from strategic planning and misuses resources</li> <li>• Possible structural inefficiency in the organization or its hierarchy</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce firefighting tasks</li> <li>• Correct structural inefficiency</li> <li>• Involve senior leaders in lean transformation</li> <li>• Establish lean vision</li> <li>• Establish incentive programs</li> <li>• Encourage innovation</li> </ul>	<ul style="list-style-type: none"> <li>• Educate customers on basic understanding of service provider and its capabilities through timely and creative marketing</li> </ul>

***Future State Vision***

For the most part, the work presented in this chapter describes ACPO's current state at the time of the study. As part of the ESAT methodology, the MIT team used this current state analysis and developed a future state vision of the ACPO enterprise. The vision is based on the six broad categories used to group and organize the various potential improvements to the ACPO enterprise previously identified. Again, these broad categories include: people, leadership, processes, suppliers, information flow and customers. The Lean Enterprise Vision for ACPO will be explained using these categories.

***People***

**Staff Increase:** The current ACPO staff consists of 3 military officers, 4 government civilians and 2 contractor personnel. As discovered in previous analysis, this staff has been overburdened with short-fuse tasks passed on to them from senior leaders. Although the ACPO's responses to these tasks have been valuable to the various stakeholders (i.e. OMB, Congress, SECAF, etc...),

the ACPO has not been able to devote the time required to fulfill its mission, which is to provide relevant information and recommendations to decision-makers on how to provide the “best value” for the investment in a portfolio of acquisition programs. The MIT team believed that the accomplishment of this mission requires: awareness and knowledge of each program, manageable chunks of the entire USAF portfolio of programs, ability to invest and divest, diversification and a thorough understanding of “best value.” The ACPO exists to coordinate with a myriad of organizations and impact the execution of a portfolio of programs valued in excess of \$40 billion. The MIT team discovered that as a direct result of its staffing size and emphasis placed on short-fuse tasks, the ACPO has been unable to initiate / institutionalize the strategic objectives outlined in its charter.

To address the issue of meeting strategic objectives while not detracting from the value provided to stakeholders, the MIT team’s Lean Enterprise Vision would include an increase of five personnel to the ACPO staff. The additional personnel would enable the ACPO to continue to provide value to its stakeholders on the short-fuse tasks while still having the flexibility to address their strategic objectives. The MIT team also considered the make-up of the staff in terms of civilian and military personnel. With this in mind, the Lean Enterprise Vision for the ACPO would consist of 35% civilian and 65% military. The office will be led by a civilian with a military member as his / her deputy. At the time of this study, the ACPO staff was not specialized in specific areas. If an individual is available, he / she would receive the next task in the queue despite its subject matter. In the Lean Enterprise Vision, the MIT team recommends that each staff member be assigned both a primary and secondary area of emphasis. For example, one staff member may be primarily responsible for jet assets while another is responsible for space assets. Each staff member will be assigned a secondary emphasis to ensure that there is redundancy within the enterprise to help facilitate leave, sick-leave and/or transfers.

Training: In the MIT Team’s Lean Enterprise Vision, personnel training prior to reporting to, and while serving duty in, the ACPO enterprise would be a priority. Pre-arrival training for new civilian and military staff members would be conducted on several topics to include: Lean methodology training with an emphasis on tools to facilitate continuous improvement, latest acquisitions policies and laws, refresher on program management tools and methods, and history of USAF acquisition programs and why the ACPO was developed. The purpose of this pre-arrival training is to ensure that all staff members fully understand the environment they are working in (including the various stakeholders), their mission and the tools that are available to them to bring about change. In addition to pre-arrival training, the Lean Enterprise Vision would include data management savvy personnel. All members of the ACPO staff would receive training on various database systems with specific emphasis on data integrity, management and validation. They would receive this training so that they can assist the various programs under their purview (their stakeholders) in ensuring the proper data is entered into the PoPS system in the appropriate manner. In addition, select members (preferably the database managers) within each USAF acquisition program would receive the same training. The MIT team determined



that this database training is imperative for the ACPO to provide the most value to their various stakeholders. This “training-the-trainer” approach would be utilized to promote change in the current culture...a shift to data standardization, accuracy and integrity.

Incentives: The MIT team found that there is no motivation to continue to perform at higher standards because the ACPO personnel (as well as other acquisition program personnel) do not have any reward and recognition programs, which would provide them a sense of accomplishment and purpose. This area of improvement was recognized due to its gap between its current and future state in the LESAT assessment. For example, LESAT analysis step 1.D.5, incentive alignment (rewarding the behavior you want), was rated on average a “2.5” in the current state, and hopes to rate as a “4” for the future state. The MIT team interpreted this gap as senior leaders are not properly rewarding good deliverable work and great performance by the ACPO and acquisition program personnel. Additionally, LESAT analysis step 1.D.6, innovation encouragement, was rated a “1” by both leaders in its current state, and also had a high desired state average ranking of “4”. In providing a recommended solution to this incentive issue, the MIT team referred to the book, Winning, by Jack Welch. The book states,

“There is hardly anything more frustrating than working hard, meeting or exceeding expectations, and discovering that it doesn’t matter to your company. You get nothing special, or you get what everyone else does. People need to get differentiated rewards and recognition to be motivated. And companies need to deliver both for retention. It’s that simple (Welch, 2005, p. 107).”

The MIT team concluded that the incentives should be in the form of military awards for the military personnel and financial bonuses for the civilians. Such a program should be implemented through the next five years, sooner rather than later.

### *Leadership*

Embed authority in support: The ACPO lacks the authority to compel satisfactory response rates or quality from the various USAF acquisition programs. Through its research, the MIT team believed that the missing ingredient is the lack of authority. Therefore, the ACPO Lean Enterprise Vision is one where the conspicuous and steadfast support of senior leadership provides the authority ACPO needs to compel necessary and sufficient responses from the enterprise stakeholders. Inherent in this authority is the establishment of recognized accountability; the stakeholders must be held accountable for not adequately supporting the transformative efforts of the ACPO. Additionally, the MIT team asserted that senior leaders must work to educate these reluctant stakeholders and inspire them to embrace the ideals and principles of Lean Thinking. Only then would these members be able to transition from unmotivated participants to proactive enablers.

Encourage judicious innovation and risk tasking: The ACPO operates in a highly sensitive political environment. In such an environment, a greater premium is placed on predictable and measured responses than on unknown and seemingly disruptive innovations. In spite of this

environment, it is incumbent upon the senior leaders to encourage creativity and tenacity in resolving the complex issues ACPO is chartered to manage. In the MIT team's Lean Enterprise Vision, staff workers would be encouraged to investigate the most promising solutions to the USAF's intricate dilemmas and not feel hindered by unknown or undefined political nuances.

Communicate and update a clear vision of the Lean Future State: To truly demonstrate a commitment to the principles and practices of Lean, senior leadership must remain tenacious. Lean seeks to control highly dynamic forces. As such, it is only natural that the initial roadmaps and goals be revisited and revalidated. Doing so, keeps the entire enterprise focused on attaining the strategic objectives, highlights the progress that has been achieved to date, and identifies those areas which may require increased emphasis. In the MIT team's Lean Enterprise Vision, senior leadership would provide regular heading checks (annual report, monthly memorandum, etc...) on the state of the enterprise, its challenges and its progress on the road to transformation.

### *Processes*

Periodic Data Review Meetings: The MIT team found that there is a lot of room for improvement regarding the data used to create the various acquisition portfolios as well as their portfolio health assessment. Some areas of enterprise waste include inadequate supplier data for an efficient performance assessment, disagreements between the SAF/AQ and PEO's level of information that should be provided to the ACPO in generating assessments and an overall lack of trust in the validity of the data. The MIT team believed that most of this waste could be minimized with the introduction of periodic data review meetings to discuss the validity of the data in its current state. These meetings could be conducted at various states throughout the value stream. One set of periodic reviews should occur as the ACPO generates their assessments for the tasks at hand. The objective of these meetings, perhaps quarterly, should be to ensure the data is both accurate and validated, based on to-be-determined scoring criteria. Later in the value stream, after the findings are delivered to stakeholders, the tasks would still need to be monitored to maintain that their data is always up-to-date. In the MIT team's analysis of ACPO's current state, this sort of reporting process was found to be sporadic, so a more structured reporting process with appropriate personnel is required. Reviews could occur annually to ensure accurate yearly data. Additionally, this review should also minimize the disagreements in the level of information provided to the ACPO in generating their assessments.

### *Suppliers*

Improve Data Provided by Suppliers: The ultimate goal of the ACPO is to provide data that allows for strategic planning for the portfolio of acquisition programs belonging to the USAF. Therefore, the MIT team believed it was critical to ensure the integrity of the data being provided by the suppliers throughout the USAF. The MIT team recommended that the personnel responsible for collecting this data receive training that would enable improved accuracy and consistency in the way they determine and rate metrics. In the Lean Enterprise Vision, only

specially trained and authorized personnel, who have completed the required training programs, would be allowed to perform this important data collection task.

### *Information Flow*

Improve Communications with Data Collection Personnel: The MIT team recommended that the data collection personnel be treated as an extended part of the ACPO team. A communications link should be established with the ACPO so that they can communicate any issues or concerns they may have regarding their data collection assignment. By seeing themselves as part of the ACPO team with an open communications links, there is greater opportunity to refine data collection issues that can lead to incremental improvements. Given the large scale of the USAF data collection effort relative to the ACPO staff size, it is unlikely this communication can be accomplished through simple voice communications. Therefore, the MIT team recommended alternate ways of communicating data collection policy and procedures. One recommendation is to setup an internal web server where questions and concerns can be freely communicated amongst the data collection personnel and the ACPO staff. The web server should highlight key topics, enable anyone to create forums for discussion of special interest, advertise best practices in the data collection effort and provide additional documentation and on-line refresher courses on data collection methodology and ways to rate and derive metrics, etc.

### *Customers*

Educate the customers: To truly understand and appreciate a service that is rendered, a customer should have a basic understanding of the service provider and its capabilities. Marketing is the means of transferring this knowledge and, according to the MIT team, it is a resource from which the ACPO can benefit. In its present state of development, the ACPO seeks to obtain data from the various acquisition organizations throughout the USAF. For those called upon to provide that needed information, the task represents a type of cost which they are being asked to bear. Furthermore, they may not truly understand what benefits they may receive from paying such a cost. Marketing is a form of communication. In this particular situation, it also represents an opportunity. In the Lean Enterprise Vision, the ACPO would use the marketing resources of the USAF to educate and inform all stakeholders of the enterprise's mission and the benefits that are obtained by supporting that mission. The MIT team found that the marketing resources available are significant:

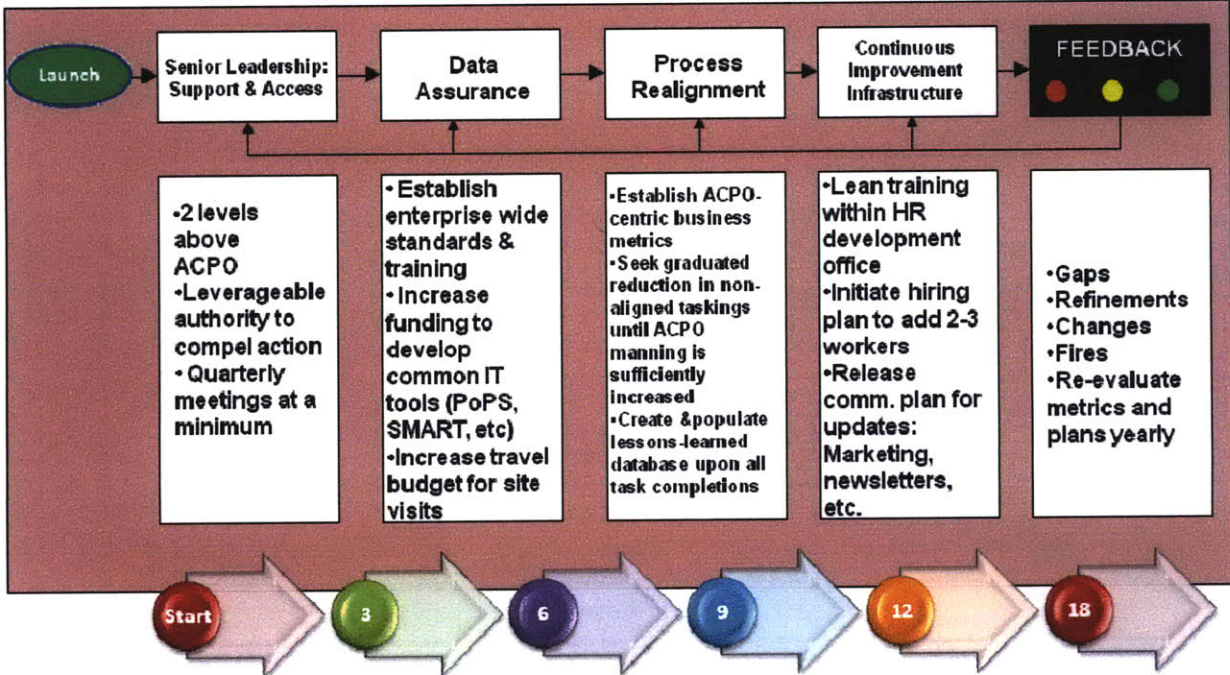
- Coordinate with Defense Acquisition University to include a description of ACPO in the fundamental classes on AF acquisitions,
- Share data on ACPO on the AF's electronic portal and community of practice website,
- Provide updates on ACPO successes to the AF Public Affairs office,
- Participate in professional associations or conferences to widen the network of potential supporters.

The ACPO operates in a rarefied environment. As such, there are many customers and stakeholders who simply do not know about the organization or its relevance. Through the use of timely and creative marketing, the MIT team believed that the ACPO may have the means to educate its customers and overcome one of its most troubling concerns.

**Transformation Plan**

The results of the ESAT analysis and subsequent description of the ACPO Future State provided the MIT team with the overarching guidance for the establishment of an actionable transformation plan, depicted in the below figure.

Figure 22: Transformation Plan



Time, months

The first step in turning the recommendations into actionable projects was to develop a prioritization scheme for the activities. The prioritization scheme is based the MIT team’s assessment of the most critical elements required to assist the ACPO in overcoming its present obstacles to Lean Integration and establishing the foundation for continuous, long-term improvement. With this construct in mine, the MIT team’s prioritized set of strategic focus areas consists of:

1. **Structural Realignment** (Senior Leadership Support and Access): Based on the results of the analysis, the ACPO requires the steadfast and committed support of the most senior level acquisition leaders. Equally as important is the requirement for regular access to these leaders and the transfer of authority form the leadership to the ACPO.

2. **Data Assurance:** The ACPO is chartered with leading efforts to reshape acquisition processes. In order to do this, they rely upon the collection of timely, accurate, and valid data from various organizations throughout the USAF. The data they have been receiving to date is of questionable quality. Key efforts in the Data Assurance strategic thrust will include the establishment of data standards and associated training of affected personnel and an increase in funding to develop and maintain those critical IT tools used to process the acquisition data the ACPO must analyze.
3. **Process Realignment:** This project area is focused upon ensuring the daily business tasks have direct linkage to strategic goals. This shift in execution will require an incremental approach because the tasks concern critical issues that must be managed. However, other options in handling some of these tasks should be pursued. Key efforts within this project area will include the creation of the ACPO centered business metrics and the establishment of a lessons-learned database. Key metrics for this strategic thrust area may include number of tasks issued or handled per week, quality level of submitted data, or timeliness of submitted data.
4. **Continuous Improvement Infrastructure:** This focus area is centered on establishing and developing those fundamental processes and infrastructure elements that will enable the enterprise to maintain an environment conducive to continuous improvement. The primary goal of the other three focus areas is on resolving the current issues and obstacles which are preventing the ACPO from being more proactive on its strategic level responsibilities. Once those issues are resolved, the enterprise must continue to seek ways to enhance value delivery to its customers.

By utilizing the ESAT methodology, the MIT team was able to develop an ACPO Transformation Plan. This plan can be implemented at any time and has an expected impact horizon of 18 months. The MIT team chose this duration because it is long enough to ensure a reasonable period of time in which to initiate the various projects and short enough to ensure the overall effort remains a visible and insistent force. Imbedded within the framework of the plan are feedback opportunities (such as the quarterly review sessions) to allow for a review of progress to date and identify areas of deficiency.

#### ***Actionable Subprojects of Strategic Focus Areas***

The MIT team concluded that each of the four identified strategic focus areas above could be divided into actionable subprojects. For illustrative purposes, the strategic focus area of Data Assurance will be used. The Data Assurance strategic thrust would set into motion those actions that would enable standardization of data entry, processing and handling in such a way as to ensure the timely delivery of a quality data product to the ACPO. More importantly, this effort would create a more flexible and responsive environment that would support better investment decisions, greater accountability, increased management agility and improved reporting to stakeholders (i.e. Congress). The MIT team's breakdown of this Data Assurance into



subprojects is provided in the table below. In order to realize the overall goal of Data Assurance each of these subprojects must be completed.

**Table 10: Data Assurance Subprojects**

<b>Go-Do</b>	<b>Short-Term</b>	<b>Long-Term</b>
Identify & Notify Project Coordinators / Team	Data Standards Development	Data Assurance (Training)
Notify Stakeholders of Subproject Initiation	Publish Data Standards Policy	Hardware Upgrades (if required)
Track Subproject Status in Planning Tool	Develop Training Schedule	Software Upgrades (if required)
Provide Subproject Status to Stakeholders		

The MIT team used the following three subproject categories:

- (1) **Go-Do:** These subprojects are typically simple to accomplish in a short period of time. They may include task direction from a senior to a subordinate (i.e. direction to utilize an IN/OUT check-in status board for all office staff at the receptionist desk). These projects can typically be accomplished with existing enterprise resources.
- (2) **Short-Term:** Accomplishment of these projects will take a longer duration than the Go-Do projects. They will typically involve additional resources and may involve coordination with entities outside of the enterprise. Accomplishment of these projects may contribute to Long-Term projects.
- (3) **Long-Term:** Accomplishment of these projects will take long durations. These projects will require additional resources and coordination with entities outside of the enterprise.

The Go-Do subprojects are needed to hold individuals accountable for subproject completion, maintain proper relationships with stakeholders and ensure coordination with the overall ACPO Transformation Plan. The Short-Term and Long-Term subprojects have dependent relationships. For example, Training cannot take place until Data Standards Development and Publish Data Standards Policy have been completed. In a lesser manner, Training is also dependent on the completion of Develop Training Schedule. Hardware Upgrades and Software Upgrades may be required for some data managers based upon the requirements set forth in the newly published Data Standards Policy. Hardware Upgrades and Software Upgrades may also be interconnected (e.g. a data manager requires both upgrades).

For each subproject (Short-Term or Long-Term), project planning templates will typically be prepared. These templates collect useful information into a single location to help the project teams get started. The templates created by the MIT team for Data Assurance (Training) and Data Standards Development have been provided as examples in Appendix C.

### ***Key Issues***

While applying the ESAT methodology to a particular section of the USAF acquisitions enterprise, two primary issues were identified by the MIT team. First, the ACPO is not receiving steadfast and unambiguous support and commitment from the senior most leaders of the USAF acquisition hierarchy. Without this foundation of strength, the ACPO is unable to pursue its strategic objectives or fully pursue Lean integration. Second, the current daily business processes of the ACPO are not aligned with its strategic goals or stakeholder values. The enterprise operates in a rarefied environment which tasks the majority of its resources. As a result, the enterprise is performing at a less-than-optimal level.

The Transformation Plan establishes a process through which these issues can be resolved or mitigated. In addition, the plan initiates efforts capable of remedying a number of deficiencies, which are symptomatic of the two primary shortcomings. For example as part of this strategic effort, a revised set of daily business metrics and a new set of data entry/quality standards will be established. The MIT team constructed the initiatives outlined in the Transformation Plan in such a way that they are focused on providing the ACPO with an actionable approach to overcoming the obstacles hindering its ability to provide value to its stakeholders. In addition, the plan will also introduce the processes, mindset and infrastructure required for long-term, continuous improvement.

### ***Lessons Learned***

During the conduct of the ACPO lean enterprise analysis, the MIT team captured a number of lessons learned which may be used as vectors in future lean initiatives. These lessons learned are provided below.

- *Leadership is the impetus for successful lean integration.* This lesson is especially true in the case of the ACPO. The ACPO's charter states that it is intended to champion enterprise-enabling solutions and represent the USAF community with a single acquisition process, among others. However, the current ACPO leadership acknowledges that the proper lean leadership is not in place to help transform the enterprise to meet this charter. This fact was evident in the LESAT results, where the largest areas of improvement were found in lean transformation and leadership. The respondents acknowledge that the ACPO cannot begin to meet these strategic objectives without senior leadership support, and as such, an actionable project is in place to allow those senior leaders to embrace lean principles and help drive ACPO towards enterprise success. This action plan begins with training the leaders in lean principles. These same leaders will be involved in establishing the ACPO's lean vision and defining its future

state. They will help develop internal metrics to mark their individual progress towards lean. Finally, these senior leaders will then communicate and update a clear vision of the future state to the rest of the ACPO, and remain a strong, supportive role in the ACPO lean progress.

- *Lean does apply in a service enterprise.* The vast majority of the examples used in lean related literature revolve around the creation of a product, or something materialistic. With this in mind, can lean principles be applied to a service organization? The answer is an overwhelming, “Yes.” It doesn’t matter so much if an enterprise is producing a product or a service, so long as the enterprise is producing *value* for its stakeholders. If ACPO is supposed to act as the champion for overall USAF processes/architectures and acquisition efforts (i.e. a service enterprise), then the ACPO itself needs to be lean and apply lessons learned and best practices from its own transformation efforts to the USAF acquisitions community.
- *Production and productivity are not the same.* ACPO is currently focused on resolving a significant number of short-fused tasks from its senior leadership. While the ACPO executes on its daily tasks successfully, there is a significant amount of waste that is generated as it assesses and delivers task findings to key stakeholders. ACPO uses anywhere from one to all nine staff members solving these daily tasks; however, the ACPO does not take into account the unique skill sets of each employee in the department. The ACPO leaders do not utilize their staff for optimum productivity, as the effort must deliver value to be truly productive. Actionable projects are in place to improve upon this lesson learned. These include an initial increase in department headcount to alleviate some of the firefighting and provide training opportunities for employees in terms of lean thinking as well as data accuracy and assurance.
- *Great ideas are easy; making them actionable is laborious.* The MIT team has considered a number of project ideas and a proposed a transformation plan that will help drive lean principles in the ACPO. However, the implementation of these ideas will require time and patience, proper leadership support and resources, enterprise buy-in to the ideas and a lot of hard work. At some point, there will be pushback in one of these areas. To counter this pushback, the ACPO needs to consider obstacles and strategies for mitigation.

### **Conclusion**

Although the Coast Guard and USAF have different situations concerning their major system acquisitions organizations, strong similarities exist that make this study conducted by the MIT team relevant to the Coast Guard’s current situation. Like the USAF, the Coast Guard has recently instituted a reform plan (*Blueprint for Acquisition Reform*), which was a direct result of poor project performance in terms of cost overruns, schedule delays and, most importantly, stakeholder (i.e. Congress) pressure and direction. Both government acquisition organizations

are not the actual organizations manufacturing or producing products, they facilitate the acquisition / procurement of products. They are more or less service organizations as opposed to manufacturing organizations. One of the key lessons learned from the USAF study is that Lean principles and the ESAT methodology can be applied to service organizations. The focus of Lean and the ESAT methodology is on value. As long as the enterprise is responsible for providing value to its stakeholders, application of Lean principles and the ESAT methodology will be more than beneficial. Through its *Blueprint for Acquisition Reform*, the Coast Guard is generally attempting to provide better value to its stakeholders. Can the application of Lean principles and the ESAT methodology provide the Coast Guard with great insights on how to provide better value to its stakeholders now and in the future? The following chapters will conduct a detailed case study into the Coast Guard's current situation with system acquisitions to answer this question. Chapters Five and Six will provide Coast Guard background information. In Chapter Seven, Lean principles and some of the ESAT methodology will be applied to a Coast Guard acquisition project to determine the answer to the preceding question.

## CHAPTER FIVE

### United States Coast Guard – Now and Then

Before such devastating events as the terrorist attacks of September 11<sup>th</sup>, 2001 and Hurricane Katrina, not many Americans understood the role the Coast Guard plays in protecting our Nation and its people. As a result of the Coast Guard's outstanding efforts in evacuating people from Manhattan and saving the lives of 33,500 people in New Orleans, the Coast Guard took center stage in much of the news media. The story of this 43,000-people strong military, multi-mission maritime force was being heard. Many Americans did not know that, "For over two centuries, the U.S. Coast Guard has safeguarded our citizens, secured our maritime borders and served as a responsible steward of the world's oceans (Allen, 2007)."

#### *Coast Guard History*

In 1787, Alexander Hamilton, the first Secretary of Treasury, noted in Federalist Paper No. 12, "A few armed vessels, judiciously stationed at the entrances of our ports, might at small expense, be made useful sentinels of the laws (Coast Guard Publication 1, 2002)." Then, in 1790, the First Congress of the United States established the Revenue Marine, a small maritime law enforcement agency to assist in collecting the new nation's customs duties. This action by the First Congress is considered the birth of the modern day Coast Guard. For eight years, the Revenue Marine, later known as the Revenue Cutter Service, was our Nation's only naval force and was assigned military duties. Over time, the Service expanded as it was given additional responsibilities and either merged with or absorbed other federal agencies. Today's Coast Guard is an amalgamation of five formerly distinct Federal services. The following timeline reflects the establishment of those services and when they became part of what is now the United States Coast Guard, as well as key changes in its organizational structure.

#### Timeline of Coast Guard Organizational History

(Source: [http:// www.uscg.mil/history/faqs/when.asp](http://www.uscg.mil/history/faqs/when.asp))

- 7 August 1789: The service, eventually to be known as the U.S. Lighthouse Service, was established under the control of the Treasury Department (1 Stat. L., 53).
- 4 August 1790: Congress authorized the Secretary of the Treasury, Alexander Hamilton, to create a maritime service to enforce customs laws (1 Stat. L. 145, 175). Alternately known as the system of cutters, Revenue Service, and Revenue Marine this service would officially be named the Revenue Cutter Service (12 Stat. L., 639) in 1863. This service was placed under the control of the Treasury Department.
- 30 August 1852: Steamboat Act established Steamboat Inspection Service under the control of the Treasury Department (10 Stat. L., 1852).
- 18 June 1878: U.S. Life Saving Service established as a separate agency under the control of the Treasury Department (20 Stat. L., 163).



- 28 January 1915: President Woodrow Wilson signed into law the "Act to Create the Coast Guard," an act passed by Congress on 20 January, 1915 that combined the Life Saving Service and Revenue Cutter Service to form the Coast Guard (38 Stat. L., 800).
- 6 April 1917: With the declaration of war against Germany the Coast Guard was transferred by Executive Order to the control of the Navy Department.
- 28 August 1919: Coast Guard reverted to Treasury Department after President Wilson signed Executive Order 3160.
- 1 July 1939: Lighthouse Service became part of the Coast Guard (53 Stat. L., 1432).
- 1 November 1941: President Roosevelt's Executive Order 8929 transferred the Coast Guard to Navy Department control.
- 28 February 1942: Executive Order 9083 transferred Bureau of Marine Inspection temporarily to the Coast Guard under Navy Department control.
- 1 January 1946: In compliance with Executive Order 9666, the Coast Guard returned to Treasury Department control.
- April 1946: The Coast Guard created the Eastern, Western, and Pacific Area commands to coordinate cases that required the assets of more than one district.
- 16 July 1946: Pursuant to Executive Order 9083 and Reorganization Plan No. 3 the Bureau of Marine Inspection was abolished and became a permanent part of the Coast Guard under Treasury Department control.
- 1 April 1967: Executive Order 16781 transferred the Coast Guard from the Treasury Department to the newly formed Department of Transportation.
- 1 March 2003, the Coast Guard formally transferred from the Department of Transportation to the newly created Department of Homeland Security.
- 2004: To create unity of command in America's ports, better align field command structures, and improve Coast Guard operational effectiveness, Sector Commands will be created throughout the CG by integrating Groups, Marine Safety Offices (MSO), Vessel Traffic Services (VTS), and in some cases, Air Stations. Sector Commands were established by 2006.

As seen in the timeline, the Coast Guard is made up of a heritage of flexibility and willingness to accomplish a multi-mission portfolio requiring various skill sets and assets.

### ***Coast Guard Roles and Missions***

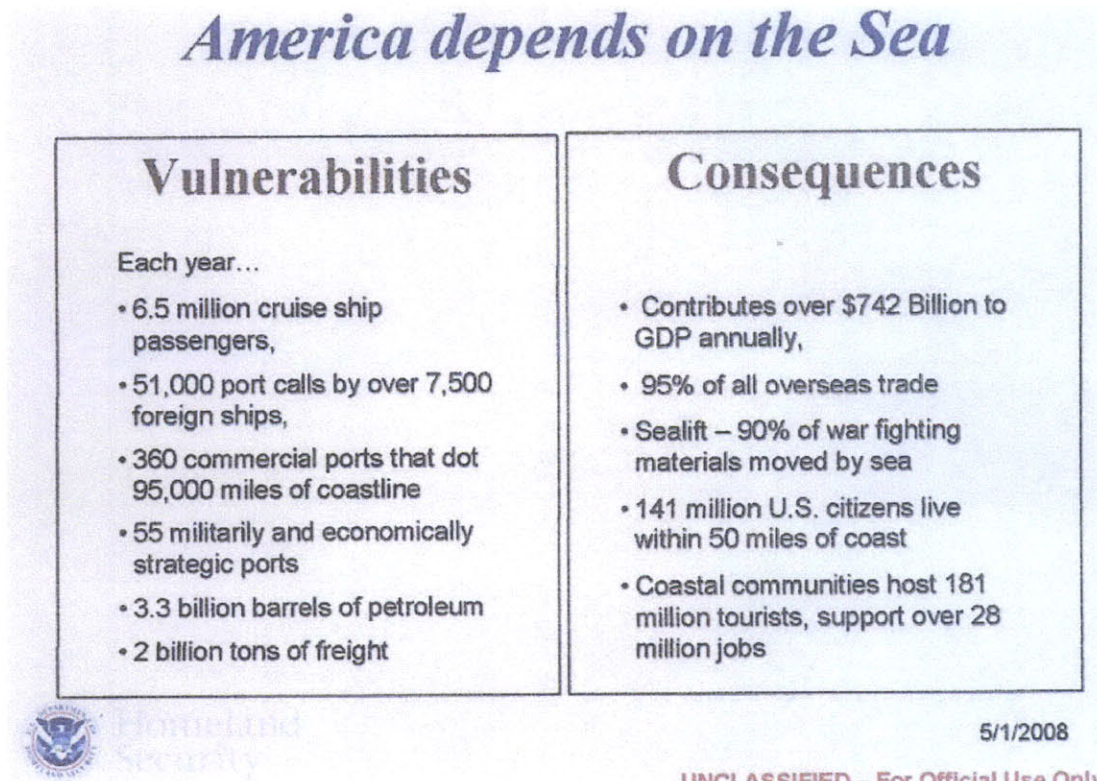
The Coast Guard of today is the principal Federal agency responsible for **maritime safety, security and stewardship**. These three roles are comprised of eleven statutorily mandated missions for the Coast Guard is to perform.

**Table 11: Roles and Missions**  
 (Source: Coast Guard 2008 Budget in Brief and Performance Report)

Safety <i>Saving Lives &amp; Protecting Property</i>	Security <i>Establishing &amp; Maintaining a Secure Maritime System while Facilitating its Use for the National Good</i>	Stewardship <i>Managing the Sustainable &amp; Effective Use of its Inland, Coastal and Ocean Waters &amp; Resources for the Future</i>
Search and Rescue Marine Safety	Ports, Waterways & Coastal Security Illegal Drug Interdiction Undocumented Migrant Interdiction Defense Readiness Other Law Enforcement	Marine Environmental Protection Living Marine Resources Aids to Navigation Ice Operations

Over the past two centuries, these roles and missions have somewhat evolved; however, the core of maritime safety, security and stewardship has remained the same. As in the past, America continues to depend on the sea for economic stability, resources, security and recreation.

**Figure 23: America Depends on the Sea**  
 (Source: U.S. Coast Guard)



The enduring roles of maritime safety, security and stewardship will remain well into the future as a result of the challenges and threats in the maritime domain. The challenges and threats that are shaping the strategic direction of the Coast Guard and our Nation include the following (Coast Guard Strategy for Maritime Safety, Security and Stewardship, 2007):

- (1) The increasing complexity and use of the U.S. Exclusive Economic Zone (EEZ): Advances in technology and changing environmental conditions are expanding the use of the maritime regions to meet the growing demands for commerce, energy, food, resources and recreation. These activities are associated with increased risks to mariners, communities and ecosystems and challenge existing maritime laws, treaties and regulations.
- (2) The growth of the global maritime supply system: Globalization has transformed maritime trade into the key link in the global supply chain that connects a worldwide network of interdependent economies.
- (3) The emergence of transnational threats: Transnational criminals, pirates, and terrorists seek to exploit the complexity of the maritime domain and the vulnerabilities of the global supply system.
- (4) The increasing scale of and potential for catastrophic incidents: Coastal regions and ports have become heavily developed and densely populated. Catastrophic incidents, whether caused by nature or by a weapon of mass destruction, will have enormous consequences in coastal areas.
- (5) The vastness, anonymity and limited governance of the global maritime domain: Legitimate uses and criminal threats are growing in a realm that spans the globe, has limited governance, and provides little transparency of activity (particularly for smaller vessels).

These challenges and threats to the maritime domain will propel the enduring roles of maritime safety, security and stewardship well into the future.

### ***Need for Assets***

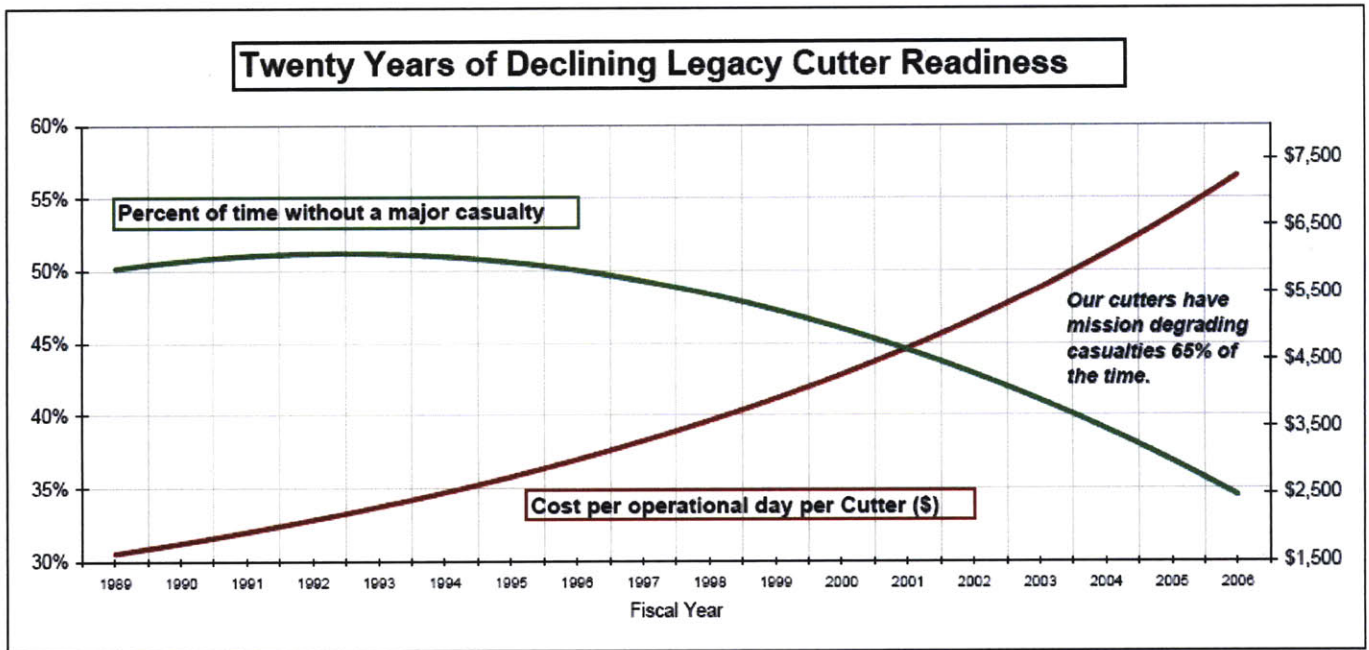
In order to save lives, protect the environment and defend the homeland, the Coast Guard must be positioned well into the future to answer America's call to duty. To remain *Semper Paratus*, or always ready, which is the Coast Guard's motto, and to execute its missions, the Coast Guard requires the right assets at the right time. However, Coast Guard assets and the supporting command and control infrastructure are based on antiquated systems that are quickly approaching the end of their service lives. The cost of maintaining and operating out-dated assets is continuing to increase. In addition, readiness reductions have resulted from system failures and unplanned corrective maintenance evolutions. Vital command and control infrastructure is also in critical need of renovation and repair.

“By the mid 1990s, most of our ships and aircraft were approaching the end of their service lives. Our cutter fleet was then, and remains, one of the oldest among the world’s naval fleets. Some of our cutters are old enough to be eligible for Social Security! In light of a looming block fleet obsolescence, it wasn’t sensible to attempt piecemeal, one-for-one replacement of each class of assets...we knew an innovative approach was required. And because maritime threats were evolving in the post-Cold War environment in which Deepwater was conceived, we knew expectations for maritime security were changing as well, so our asset mix would need to support these dynamic requirements (Allen, 2007).”

“The National Distress and Response System (NDRS) is the legacy communications component of USCG’s search and rescue program. However, the 30-year-old system has several deficiencies and is difficult to maintain, according to USCG officials. In September 2002, the USCG contracted with General Dynamics Decision Systems (General Dynamics) to modernize and replace the NDRS with a system called Rescue 21 (GAO-06-448T, 2006).”

The Coast Guard’s cutter fleet serves as an excellent example of the need to recapitalize is the aging assets. The fleet is the 37<sup>th</sup> oldest of 39 similar fleets worldwide with the average age of the major cutters at 40 years old (Coast Guard Office of Programs (CG-821)). Major cutters are Coast Guard vessels 65 feet in length or more. Many of these cutters are operating under unacceptable conditions. Major cutters are replete with major safety and habitability concerns and, on average, major cutters experience one engine room fire per two month patrol. In the long run, these conditions equate to deteriorating service to the American people.

**Figure 24: Coast Guard Fleet Declining Service**  
 (Source: Coast Guard Office of Programs (CG-821))



Two specific examples of this poor state of readiness are the Medium Endurance Cutters ACUSHNET and VALIANT. In December 2007, the ACUSHNET suffered a catastrophic



mechanical casualty that placed the cutter out of service for extensive repairs. ACHUSHNET lost a significant portion of the propulsion shaft and the attached propeller; cause unknown. This cutter has been in active service since 1944. Also in late 2007, it was determined that the VALIANT was operating under unsafe conditions due to severe hull corrosion. The 40 year-old VALIANT was sent to an emergency drydock for extensive repairs.

**Figure 25: Medium Endurance Cutters ACUSHNET and VALIANT**  
*(Source: U.S. Coast Guard)*



*World War II veteran, Cutter ACHUSHNET, is scheduled for decommissioning in FY2009 after 64 years of service.*



*Severe corrosion requiring emergency drydock of the 40 year old Cutter VALIANT*

In order to meet the emerging threats and growing demand for services, the Coast Guard has been committed to replacing its aging vessels and aircraft and their shoreside command and control infrastructure. Ultimately, the Coast Guard's ability to meet its enduring goals of maritime safety, security and stewardship depends upon the successful recapitalization of front



line assets and their supporting command and control infrastructure. For this reason, the current Commandant of the Coast Guard, Admiral Thad Allen, has made the reform of the major acquisition systems one of his top priorities. Now that the importance of acquiring new assets for the Coast Guard is understood, as well as the urgency placed on this issue by the Commandant of the Coast Guard, the following chapter will highlight problems with two critical Coast Guard acquisition projects and the steps that have been taken to resolve these problems.

## CHAPTER SIX

### Coast Guard Acquisition Reform

#### *Deepwater Project*

Perhaps, the largest and most significant acquisition project that the Coast Guard has ever undertaken is the upgrade and replacement of its Deepwater assets (i.e. cutters, fixed-wing aircraft and helicopters). In June 2002, the Coast Guard engaged in a contract with the Integrated Coast Guard Systems (ICGS), a business entity jointly owned by Lockheed Martin Corporation and Northrop Grumman Ship Systems, to identify and deliver the assets needed to meet the various requirements of the Coast Guard's mission portfolio. The theory behind ICGS is that they would take on the role of first-tier subcontractors and either provide Deepwater assets or award second-tier subcontracts to other companies to provide the assets. To deal with this critical project, the Coast Guard formed a stand-alone organization separate from its already formed acquisitions organization.

**Figure 26: First National Security Cutter and Long Range Aircraft Delivered by the Deepwater Project**  
(Source: U.S. Coast Guard)



Over the past seven to eight years, the Coast Guard's acquisitions approach to the Deepwater project has come under a great deal of scrutiny by the GAO and Congress. In particular, these concerns are best summarized in the GAO report, *Contract Management: Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight*, GAO-04-380. This report identifies three main areas—ensuring better program management and oversight, ensuring greater accountability on the part of the system integrator, and creating sufficient competition to help act as a control on costs. To address these concerns, eleven

specific recommendations were provided (GAO-04-380, 2004). Table 12 below provides a summary of these recommendations and their status as of June 2006.

**Table 12: GAO Recommendations for Deepwater Program**  
(Source: GAO-06-448T, 2006)

<b>Table 1: Status of GAO Recommendations to the U.S. Coast Guard Regarding Management of the Deepwater Program</b>		
<b>Areas of concern</b>	<b>Recommendations to the U.S. Coast Guard</b>	<b>Recommendation status</b>
Key components of management and oversight are not effectively implemented	Put in place a human capital plan to ensure adequate staffing of the Deepwater program	Implemented
	Improve integrated product teams responsible for managing the program by providing better training, approving charters, and improving systems for sharing information between teams	Partially implemented
	Provide field personnel with guidance and training on transitioning to new Deepwater assets	Partially implemented
Procedures for ensuring contractor accountability are inadequate	Develop measurable award fee criteria consistent with guidance from the Office of Federal Procurement Policy	Implemented <sup>a</sup>
	Provide for better input from Coast Guard technical representatives	Implemented
	Hold the system integrator accountable for improving effectiveness of the integrated product teams <sup>b</sup>	Implemented
	Establish a baseline for determining whether the acquisition approach is costing the government more than the tradition asset replacement approach	Will not be implemented
	Establish a time frame for putting steps in place to measure contractor's progress toward improving operational effectiveness	Partially implemented
	Establish criteria to determine when to adjust the project baseline and document the reasons for change	Partially implemented
Control of future costs through competition remains at risk because of weak oversight	For subcontracts over \$5 million awarded by the system integrator to the two major subcontractors, require notification to the Coast Guard about decision to perform the work in-house rather than contracting it out	Implemented <sup>a</sup>
	Develop a comprehensive plan for holding the system integrator accountable for ensuring adequate competition among suppliers	Partially implemented

Source: GAO analysis of Coast Guard data.

At the root of many, if not all, of the eleven recommendations are the four major issues identified by the GAO that deal with the Integrated Product Teams (IPTs), the Coast Guard's primary tool for managing the Deepwater project and overseeing contractor activities. These major issues are: (1) lack of timely charters to provide authority needed for decision making, (2) inadequate communication among team members, (3) high staff turnover, and (4) insufficient training (GAO Report 2004). Although these problems were enough to catalyze reform, they were not isolated to the Deepwater project. They were systemic to the Coast Guard's entire acquisitions organization.

### ***Rescue 21 Project***

Another example of these systemic problems is the Coast Guard's Rescue 21 project—the Coast Guard's effort to replace its antiquated command, control and communication infrastructure used primarily to monitor mariner distress calls, and coordinate search and rescue operations. The GAO described this project as one that continues to be of concern as the program has been plagued by numerous delays, technical problems, and cost overruns. Furthermore, the GAO stated the following:

These delays, technical problems, and cost overruns are the result of deficiencies in Coast Guard acquisition management and contractor oversight—deficiencies similar to those that we identified earlier in the Deepwater program. Such a pattern is of concern because it suggests that the Coast Guard has not translated the lessons learned from Deepwater to its overall acquisition management. In particular, deficiencies in the Rescue 21 program include common problems of acquisition management and oversight including ineffective project monitoring and risk management, poorly defined user requirements, unrealistic schedule and cost estimates developed by the contractor, and limited executive-level oversight. (GAO-06-448T, 2006)

As a direct result of these problems within the Rescue 21 project and potential future funding issues, the overall cost of the project has increased from \$710 million to \$1,066 million and instead of being fully implemented in 2006 it will be completed in 2017. These systemic problems in acquisition management and contractor oversight were clearly a call for action.

### *Answering the Call for Change*

Upon assuming the Office of Commandant of the Coast Guard in May 2006, Admiral Allen ordered a top-down review of the Coast Guard's acquisition structure and processes. Admiral Allen recognized that the Coast Guard performed procurement and acquisitions for basic services to major systems in a less than synergistic manner. He asserted, "Although often successful, the processes were not optimally aligned to ensure standardization, or to control cost or schedule (Blueprint, 2008)." In addition to this order, Admiral Allen issued Commandant Intent Action Orders (CIAO), which had a significant impact on the Coast Guard's acquisitions community. In particular, two of the ten CIAO's have a direct impact on the acquisitions structure and processes. The CIAO's and the top-down review of the Coast Guard's acquisitions system were direct results of past assessment reports conducted by the Coast Guard, U.S. Department of Homeland Security and the U.S. Government Accountability Office (GAO).

Admiral Allen directed CIAO #1, Acquisition Directorate and the Integrated Deepwater System Consolidation, because of what he described as, "...a patchwork of acquisition, system engineering, contracting, decision support, procurement, and maintenance logistical support programs...[that] resulted in inefficiencies within the acquisitions community and fragmented responsibility throughout the various directorates of the Coast Guard (Allen, Memo 16000)." Without being focused only on the acquisition of new systems, Admiral Allen directed CIAO #4, Logistics Organizational Alignment. In this order, Admiral Allen basically directed that the acquisitions and logistics processes be re-designed to ensure mission effectiveness while minimizing total ownership costs.



Figure 27: Summary of CIAO #1 and CIAO #4  
(Source: Coast Guard Modernization Brief, 2007)



## CIAO 1 - (ACQ) Acquisition Directorate and the Integrated Deepwater System Consolidation



The Coast Guard's Acquisition Directorate (G-A); Deepwater (G-D) staffs; the Office of Procurement Management (CG-85); Office of Research, Development, and Technical Management (CG-66); the Research and Development (R&D) Center; and the Head Contracting Authority (HCA) will be consolidated under the leadership of the Assistant Commandant for Acquisition (CG-9).

**End States:**

- Become a model for mid-size Federal Agency acquisition and procurement.
- Align with DHS procurement organization.
- Align with Coast Guard mission support organization.
- Improve efficiency of human capital.
- Execute more effective project management and acquisition governance.

**Projected Stand Up of CG-9:** 29 June 2007



## CIAO 4 - (LOG) Logistics Organizational Alignment



The Coast Guard will develop and implement a mission focused support structure. The proposed organization will be designed to support operational mission effectiveness at the lowest achievable costs, improve control and accountability, centralize control of depot maintenance and supply chain management, achieve and sustain Chief Financial Officer audit compliance, and better facilitate the ongoing logistics transformation to achieve the goals of the Logistics Transformation Program Integration Office (LTPIO).

**End States:**

- Bi-level maintenance w/more standardized procedures.
- Centralized supply chain management w/spending driven by maintenance requirements.
- Disciplined/standard Coast Guard-wide engineering and logistics business processes, modeled after our internal best practices currently in use in aviation.
- Strong configuration management processes, w/associated compliance inspections, to ensure all configurations are safe, effective, and supportable when installed.
- Reduce the number of financial and information systems.

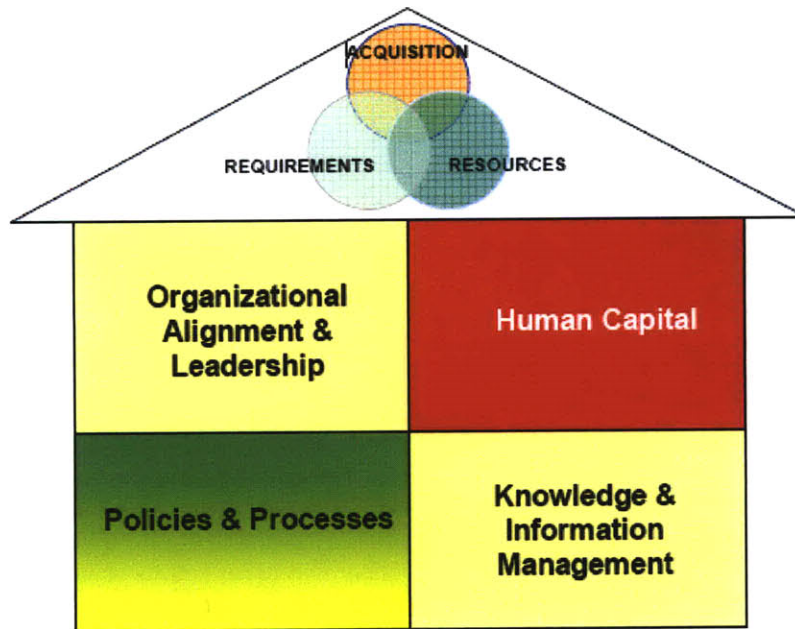
**Projected Full Operational Capability Timeline:** End of Fiscal Year 2010



**Blueprint for Acquisition Reform**

The Coast Guard’s *Blueprint for Acquisition Reform* is the result of the top-down review and CIAO’s directed by Admiral Allen. It represents the way forward in establishing the capability of the Coast Guard to acquire the right assets at the right time to ensure mission effectiveness. Rear Admiral (RADM) Blore, Assistant Commandant for Acquisition, is responsible for the realization of this blueprint. He referred to it as the capstone, strategic document which is intended to “...enhance the Coast Guard’s mission execution through effective and efficient acquisition and contracting activities, while working with other mission support directorates (CG-1, CG-4 and CG-6) to ensure robust life-cycle systems management (Blueprint, 2008).” The *Blueprint* consists of four individual plans: (1) Organizational Leadership and Alignment (CIAO #1), (2) Policies and Processes, (3) Human Capital and (4) Knowledge and Information Management. The Coast Guard has identified project management as the lynchpin for reform success. All four plans must positively influence the project manager’s ability to be the single point of authority for their programs and the strategic managers of their entire process. The project managers must be the semi-autonomous, trained, resourced, empowered and accountable leaders of their acquisition project.

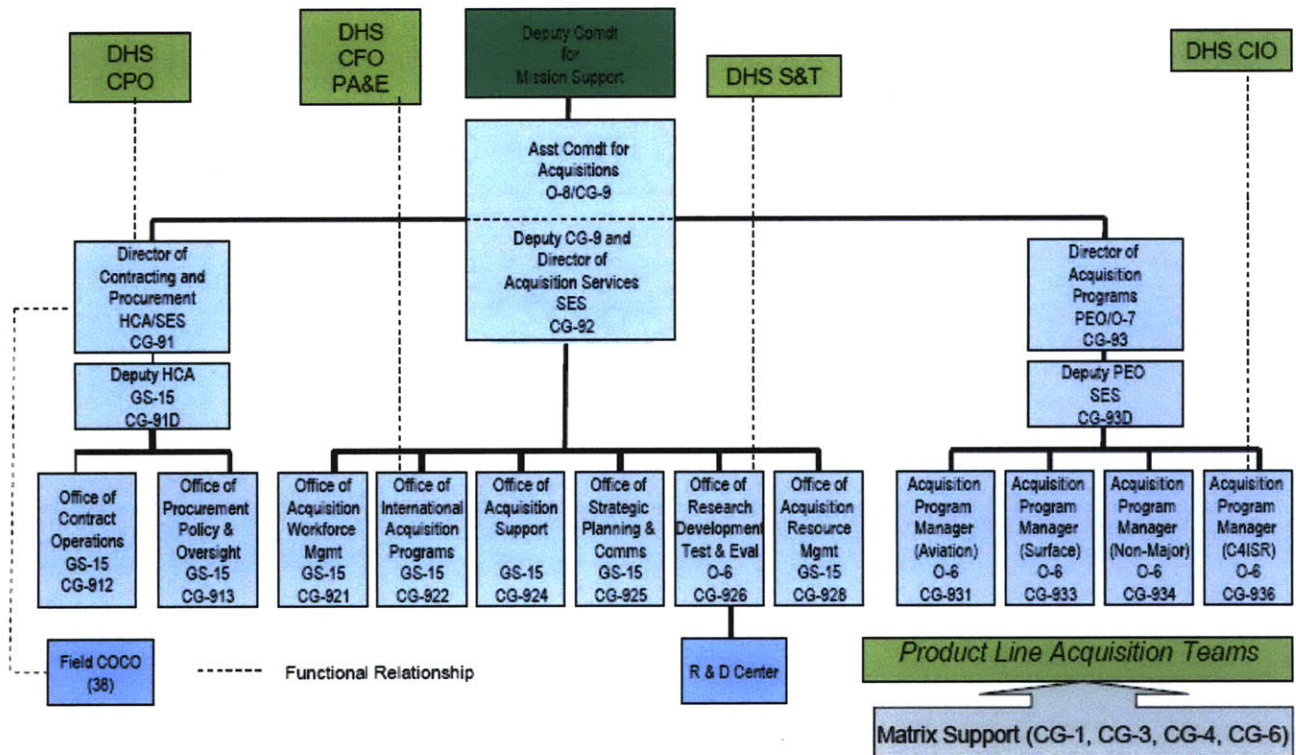
**Figure 28: Coast Guard Acquisition Reform Framework**  
(Source: *Blueprint for Acquisition Reform*)



The Organizational Alignment and Leadership Plan is aimed at providing one acquisition voice. Under this plan, the head of all contacting activity and the research and development organization will all be under the Acquisition Directorate’s umbrella. This plan centralizes acquisitions workforce, budget and financial management process. It establishes standardized policies for contracting and procurement. In addition, it establishes a product line acquisition and management organization to align with the future mission support changes directed in CIAO

#4. Figure 29 depicts the end state envisioned for the restructured Acquisition Directorate (CG-9).

**Figure 29: Coast Guard Acquisition Directorate Organization Chart**  
*(Source: Blueprint for Acquisition Reform)*



The Human Capital plan focuses on the recruitment, hiring and retention of an acquisitions workforce. It focuses on ensuring that CG-9 is staffed with qualified and experienced personnel. The plan addresses pay incentives, internship programs and a screening and selection process for project managers. The plan calls for a balance within the workforce of military and civilian personnel and lays the foundation for creating acquisition career paths. In addition, the plan addresses training and certification of all acquisitions personnel.

The Policies and Processes plan provides a framework for what the Coast Guard intends to achieve in the area of acquisitions policies and processes. Perhaps, the most critical part of this plan is the updating of the Major Systems Acquisition Manual, which will clearly define policies and processes. Focus on updating the manual will be placed on devising a more rigorous approach to identifying projects, ensuring proper accomplishment of Acquisition Program Management functions and aligning with DHS investment review policy.

The Knowledge and Information Management plan provides a framework illustrating how the Coast Guard intends to utilize lessons learned from past major system acquisitions, performance measurement, knowledge sharing, and knowledge management. As part of this plan, the Coast Guard will establish standard, meaningful metrics to assess a project's overall health. The plan will facilitate data-driven decision making and expand the use of modeling.




**Turning the Blueprint for Acquisition Reform into Action**

This *Blueprint for Acquisition Reform* was endorsed by Admiral Allen on July 9, 2007. At this point in time, the Coast Guard summarized its acquisitions problems in the below figure.

**Figure 30: Coast Guard Acquisitions Issues as of July 2007**  
(Source: U.S. Coast Guard)

<b>Blueprint for Acquisition Reform in the U. S. Coast Guard</b>		
<i>Phase I &amp; II Implementation Yields</i>		
Problem, Issue or Concern	Status Quo	New Model
<b>Aligned Acquisition Processes</b>	Yellow	Green
<b>Governance</b>	Yellow	Green
<b>R &amp; D Support of Acquisition</b>	Yellow	Green
<b>Standard PM Support Functions</b>	Yellow	Green
<b>Centralized Contracting Authority</b>	Yellow	Green
<b>Workforce Development &amp; Cert</b>	Red	Green
<b>Lifecycle Systems Management</b>	Red	Green
<b>Common Acquisition Doctrine</b>	Yellow	Green
<b>Decision Tools &amp; Internal Controls</b>	Red	Green

 Acquisition Directorate  
Blueprint for Acquisition Reform, Version 2.0 13 July 2007 20

On July 14, 2008, RADM Blore provided his annual status report on how his organization was progressing in completing the various sections of the *Blueprint*. He reported, “Since the stand-up of the single Acquisition Directorate on 13 July 2007, over 60 percent of the *Blueprint for Acquisition Reform*, Version 2.0 action items have been completed (Blueprint, 2008).” Today, the Acquisition Directorate continues to work at meeting the requirements set forth in the *Blueprint* and, RADM Blore will provide his next annual report sometime in July 2009. All indications show that the Coast Guard will have shown significant progress from July 2008 to July 2009.

On March 24, 2009, RADM Blore testified before the Subcommittee on Coast Guard and Maritime Transportation, U.S. House of Representatives, on Coast Guard acquisition policies and programs. While referring to the Coast Guard’s efforts for acquisition reform, RADM Blore stated, “It has not been easy. And reforms cannot be implemented overnight – it takes time to disentangle or close-out the existing [processes] prudently, while minimizing additional costs or schedule delays (Blore, 2009).” He provided several examples of how the Coast Guard’s acquisition reform efforts have led to success stories. In particular, many of these examples were aimed at the turn around performance of what used to be the Deepwater project and the Rescue 21 project.

The National Security Cutter project has had success. BERTHOLF was successfully delivered in August 2008, WAESCHE is on track for delivery late in 2009, and STRATTON remains on schedule for keel laying in summer 2009. The Coast Guard has already taken

delivery of seven HC-144 Ocean Sentry aircraft, with four more on order. During a normal training mission in January 2008, an HC-144A crew diverted and responded to the crash of two U.S. Air Force F-15 fighters in the Gulf of Mexico. The crew was able to quickly arrive on scene, locate a survivor using the aircraft's enhanced bubble search window, establish communications with potential Good Samaritan vessels in the area and coordinate the successful search and rescue response. The Coast Guard's Helicopter Interdiction Tactical Squadron (HITRON) began to receive delivery of the upgraded MH-65C helicopters. "So far in fiscal year 2009, the MH-65C has successfully interdicted 11 go-fasts, resulting in the seizure of more than six tons of cocaine and more than two tons of marijuana; having a combined estimated street value of more than \$178 million (Blore, 2009)." RADM Blore also referred to the successes of the Rescue 21 project, 19 of the 39 locations have been completed. On January 14, 2009, an 18-foot recreational fishing boat capsized with six men onboard in the frigid waters around the Hampton Roads, Virginia. Using the recently installed Rescue 21 system, with its improved direction finding capabilities, Coast Guard watchstanders were able to quickly pinpoint the vicinity where the mayday call originated using only the lone mayday transmission received. The Coast Guard was able to save four of the six fishermen, two died due to hypothermia.

RADM Blore concluded his testimony by stating,

Today, I am pleased to represent a wholly reformed acquisition organization, with processes and procedures in place to ensure successful program management and oversight. That statement does not imply that I do not expect there will be challenges ahead - there assuredly will be. But, it expresses my confidence that, by following the processes now in place and adhering to the cornerstones of successful acquisition, we will be able to meet and address those challenges successfully to facilitate delivery of assets and systems with capabilities to meet the mission needs of today and tomorrow (Blore, 2009).

### ***What Else Can Be Done***

The Coast Guard clearly has a need to fully repair its acquisitions organization and processes. Coast Guard leadership at the highest level have emphasized the importance of getting major system acquisitions right and they have provided the authority and support to revamp the acquisitions policies and processes. The *Blueprint for Acquisition Reform* appears to be a great tool in providing the necessary steps to create a much improved acquisitions organization. Since July 2007, the Acquisitions Directorate has placed a great deal of emphasis on accomplishing the multitude of action items outlined in the *Blueprint* and, as of the last status report, they have completed over 60% of the items. As previously mentioned, all indications show that the next status report due out in July 2009 will show significantly more progress. However, what happens after the *Blueprint* action items are 100% completed? Has emphasis on the *Blueprint* detracted from other key issues that are being overlooked? How can the success of the *Blueprint* completion be validated? What tools can be used to complement the *Blueprint* in emphasizing continuous improvement? Routine use of the tools provided in the Enterprise Strategic Analysis and Transformation (ESAT) methodology created by the Massachusetts Institute of Technology's Lean Advancement Initiative (MIT-LAI) can and should be utilized by the Coast Guard to answer such questions. In Chapter Seven, Lean enterprise principles and the ESAT methodology will be applied to a Coast Guard acquisition project to determine the answers to the preceding questions.

# CHAPTER SEVEN

## Rescue 21 Project

The USAF study of Chapter Four provided the important outcome that Lean principles and the ESAT methodology can apply to service enterprises. Chapter Four also ended with a question, “Can the application of Lean principles and the ESAT methodology provide the Coast Guard with great insights on how to provide better value to its stakeholders now and in the future?” To answer this question, the Coast Guard’s Rescue 21 project was selected as a representative enterprise within the newly re-organized Coast Guard’s Acquisitions Directorate. Although a complete ESAT assessment was not conducted on Rescue 21, key steps within the ESAT methodology were completed to assess the answer to this question. These steps include stakeholder, X-matrix and LESAT analyses.

### *What is Rescue 21*

The Rescue 21 project was initiated as a major acquisition project in 1995 when the Coast Guard was part of the Department of Transportation. At this point, the project was known as the National Distress and Response System Modernization Plan (NDRSMP). Its mission need statement included the following [select statutory references are provided as examples] (Post Implementation Review, 2009):

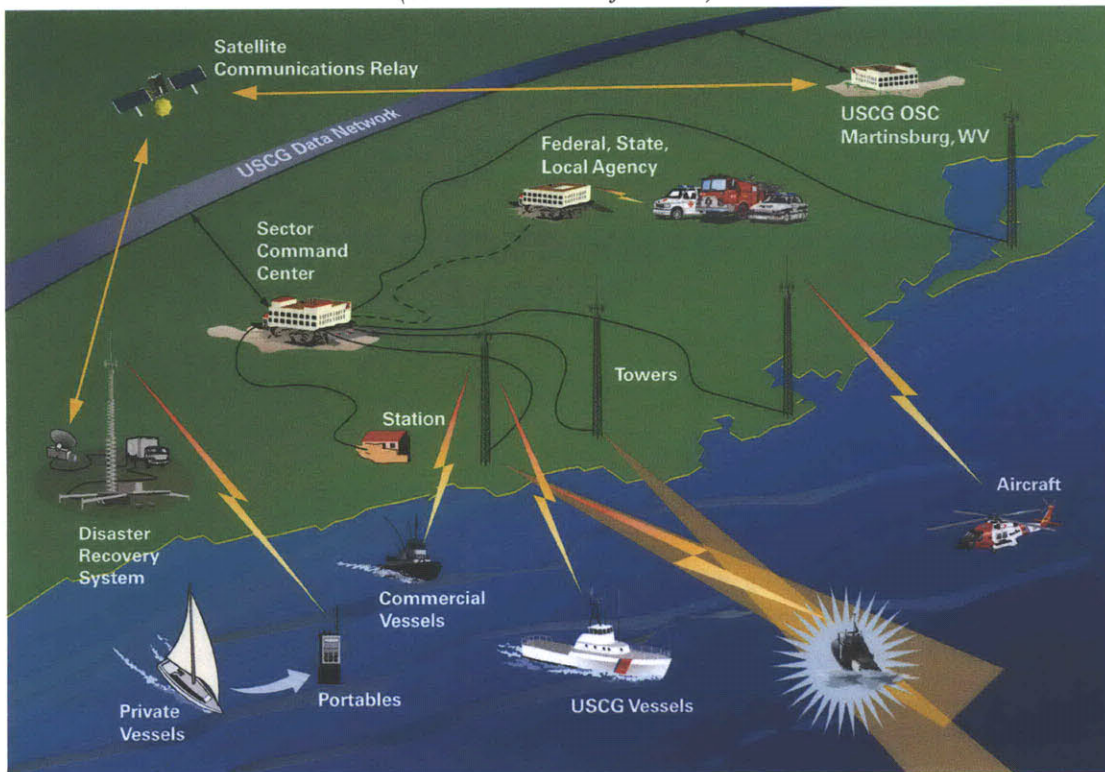
- The Coast Guard is responsible for maintaining an effective maritime search and rescue capability. To accomplish this and other missions, the Coast Guard needs to modernize the National Distress & Response System to support Sectors, Group/Air Stations and their respective assets’ operations.
- Specific statutory requirements include, for example: develop, establish, maintain and operate facilities for the promotion of SAR (14 USC 2); maintain radio transmitting and receiving stations (14 USC 93); assist federal and state agencies (14 USC 141); port security and coastal defense (14 USC 145); procure and maintain communications facilities, for assistance in observing, communicating and disseminating weather phenomena to NOAA and the public (14 USC 147); Bridge to Bridge Radiotelephone Act (33 USC 1201-1208).

Rescue 21 is an advanced command, control and communications system that is replacing the Coast Guard’s antiquated 1970’s era National Distress and Response System (NDRS), which was used to monitor international VHF-FM distress frequencies, coordinate search and rescue operations and communicate with commercial and recreational vessels. Rescue 21 will allow the Coast Guard to more efficiently and effectively perform all maritime safety, security and stewardship missions in the coastal zone. System characteristics include:



- Utilizes modern, dual mode (digital and analog) VHF and UHF communications, Reduces gaps in communications coverage that existed with the legacy NDRS,
- Incorporates direction-finding technology to more accurately locate the source of distress calls,
- Supports multiple simultaneous communications channels,
- Enhances distress call clarity,
- Provides recording and playback features,
- Increases coordination and interoperability with Federal, state, and local law enforcement and first responder agencies,
- Provides for the rapid restoration of critical communications following a disaster through the use of the system's organic, scalable Disaster Recovery (DR) capability,
- Provides Digital Selective Calling (DSC) capabilities necessary for U.S. compliance with the International Maritime Organization's Safety of Life at Sea (SOLAS) treaty for Global Maritime Distress and Safety System (GMDSS) Sea Area 1 requirements.

**Figure 31: Rescue 21 Notional Diagram**  
 (Source: Rescue 21 factsheet)



In November 2005, the Rescue 21 project formally entered the production and deployment phase with the production contractor, General Dynamics C4 Systems (GDC4S). By the end of Fiscal Year 2008, Rescue 21 has been deployed and is operational in sixteen of the 39 Coast Guard

Sectors, covering over 22,000 of the 95,000 miles of coastline. When fully deployed in 2017, Rescue 21 will provide coverage in all 39 Coast Guard Sectors throughout the coastal continental United States, overseas islands, Alaska, Great Lakes and along the Western Rivers. It is anticipated that the Rescue 21 system will have an expected life cycle of 16 years.

**Table 13: Comparison of Rescue 21 with NDRSMP**  
*(Source: U.S. Coast Guard)*

	Capabilities	Existing NDRS	Rescue 21
<b>Monitor distress calls</b>	Continuous, uninterrupted Channel 16 Guard	no	yes
	Channel 70 digital selective calling and direction finding	no	yes
	Communications coverage	Unknown; numerous gaps	90-98% coverage to 20 nautical miles from the shore
<b>Alert response assets</b>	Automatic vessel asset tracking	no	to be determined
	Data communications (between vessels and stations)	no	to be determined
<b>Coordinate response activities</b>	Public safety interoperability	no	yes
	Full coverage protected communications	no	yes
	Geographic display	no	yes
	Number of simultaneous communications channels	1	6

***Problems with the Rescue 21 Project***

As previously mentioned in Chapter Six, the GAO conducted an in depth study of the Coast Guard’s Rescue 21 project in 2006. One of the primary reasons why the GAO conducted this study was to “...assess the reasons for the significant cost overruns and implementation delays...(GAO-06-623, 2006)” The GAO noted that the estimated total acquisition cost for Rescue 21 increased from \$250 million in 1999 to \$710.5 million in 2005. In addition, the GAO determined that they did not agree with the Coast Guard’s 2005 estimate saying that it was not viable. The GAO believed that the total acquisition cost would be approximately \$872 million, unless critical changes were made to the project. Also, the GAO reported that obtaining full operating capability had been delayed from 2006 to 2011. As of January 2008, the Coast Guard has reported that the revised total acquisition cost for Rescue 21 is \$1,066 million with full operating capability achieved in 2017 (Papp Memo 4200, Feb 2008). The Coast Guard attributes these revised estimates to lack of out-year funding, unfunded Federal mandates and new requirements. Unfortunately, delayed deployment of the system means that Coast Guard Sectors will have to continue operating faulty legacy equipment, reducing the capability of the Coast Guard to respond to mariners in distress.

In their study, the GAO identified five key factors in Rescue 21 cost overruns and schedule delays.

**Table 14: Key Factors in Rescue 21 Cost Overruns and Schedule Delays**  
*(Source: GAO-06-623, 2006)*

<b>Key Factors in Rescue 21 Cost Overruns and Schedule Delays</b>	
Requirements management	USCG did not follow a rigorous requirements management process and testing revealed incomplete and poorly defined requirements.
Project monitoring	USCG did not effectively use earned value management data to measure performance and take corrective action on negative trends.
Risk management	USCG did not always effectively mitigate and communicate risks.
Contractor cost and schedule estimation and delivery	The contractor created a schedule that underestimated the time required to complete key tasks, and development took longer than planned, which led to delays in testing.
Executive-level oversight	USCG stated that it had an executive-level oversight process that included semiannual and key decision point reviews. However, there is no evidence that these reviews of Rescue 21 occurred before 2005.

Source: GAO.

As with all GAO reports, the agency being reported on has the opportunity to respond to the findings. In a response letter from the Department of Homeland Security to the GAO, the department noted, “The GAO draft report highlights five key factors that contributed to Rescue 21 cost overruns and schedule delays. As noted above, the Coast Guard agrees with GAO’s fourth factor regarding ‘Contractor Cost and Schedule Estimation and Delivery.’ However, the remaining key factors are not accurate in important aspects (GAO-06-623, 2006) ...” Although the Coast Guard does disagree with many of GAO’s findings, the Coast Guard completely agrees that it is responsible for managing the cost overruns and schedule delays in major system acquisitions. With this in mind, the Coast Guard initiated / completed several project management improvements to control cost and schedule. To this day, the Coast Guard is still providing information to the GAO to resolve their differences and address shortfalls.

***How to Answer Key Questions***

With its cost overruns and schedule delays, the Rescue 21 project serves as an example of inherent problems within the Coast Guard’s Acquisition Directorate. As previously mentioned in Chapter Six, the Coast Guard created its *Blueprint for Acquisition Reform* in response to such problems in 2006. In July of 2008, the Coast Guard reported that over 60 percent of the *Blueprint* had been completed. It is anticipated that significant progress towards completion will be evident in the next *Blueprint* update due in July 2009. Chapter Six ended with several important questions.

- What happens after the *Blueprint* action items are 100% completed?
- Has emphasis on the *Blueprint* detracted from other key issues that are being overlooked?
- How can the success of the *Blueprint* completion be validated?

- What tools can be used to complement the *Blueprint* in emphasizing continuous improvement?

Chapter Four demonstrated how the application of Lean principles and the ESAT methodology can provide beneficial insights to a service enterprise. Chapter Four also ended with a compelling question, “Can the application of Lean principles and the ESAT methodology provide the Coast Guard with great insights on how to provide better value to its stakeholders now and in the future?” By applying certain ESAT methodology steps (stakeholder, X-matrix and LESAT analyses) to Rescue 21, the answers to the questions from Chapters Four and Six can be determined.

### ***Stakeholder Analysis***

Before using the ESAT methodology tools to conduct a stakeholder analysis, a cursory review of who the Rescue 21 project considers to be its stakeholders was conducted. Part of this cursory review involved an interview with the project’s Assistant Project Manager. Another part consisted of a review of the Rescue 21 Post Implementation Review (PIR) approved in March 2009. The White House Office of Management and Budget (OMB) and the DHS have directed the Coast Guard to perform an Operational Analysis (OA) on all major system acquisition projects. This OA is to be conducted on an annual basis on parts of the project that have been deployed, are operational, or are in the maintenance / steady-state phase. As an initial review to set the baseline for follow-on OA’s, the Coast Guard conducts a PIR. The PIR for Rescue 21 has a section titled, Customer, User and Stakeholder Assessment Results. This section states the following:

The primary stakeholders of the Rescue 21 system are the project’s sponsor, the Coast Guard’s Office of C4IT and Sensor Capabilities (CG-761), the Coast Guard Assistant Commandant for Capabilities (CG-7), the Coast Guard Deputy Commandant for Operations (CG-DCO), and the Coast Guard Assistant Commandant for Acquisitions (CG-9). The primary users and customers of the Rescue 21 system include the Commanders and watch-standers at the various Coast Guard Sectors, Group/Air Stations, and Districts; the Department of Homeland Security; federal, state, and local first responder agencies; and the commercial and recreational boating communities ((Post Implementation Review, 2009).

With information from both the interview and PIR, Rescue 21 major stakeholders were determined. Then, both the Stakeholder Value Exchange and Stakeholder Value Comparison tools from the ESAT methodology were used.

**Table 15: Major Stakeholders of Rescue 21**

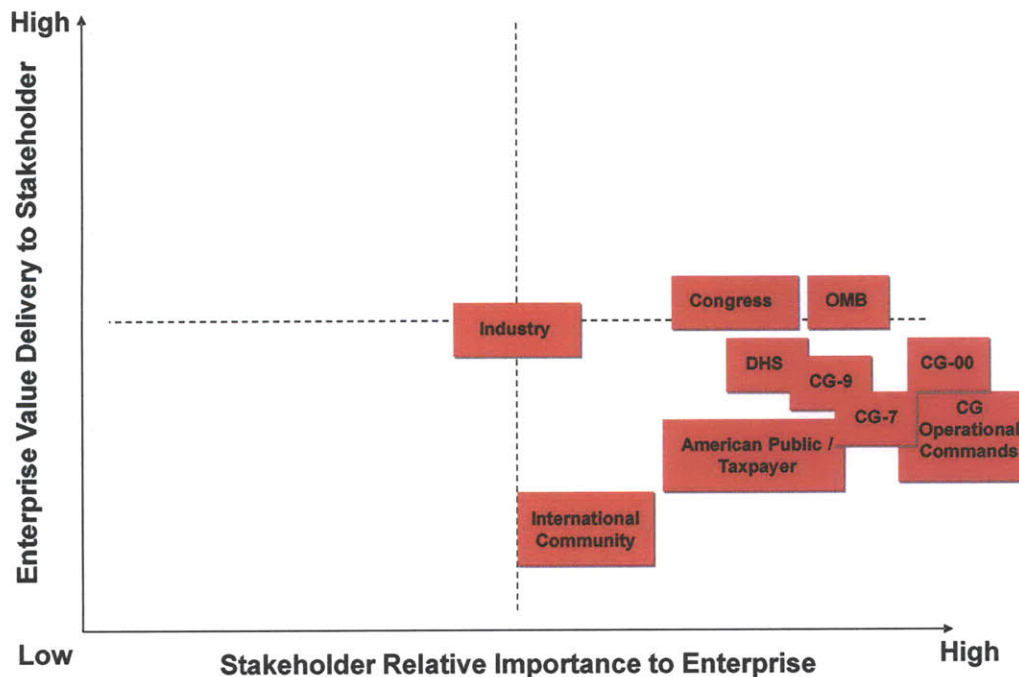
STAKEHOLDER	DESCRIPTION
Department of Homeland Security (DHS)	One of the primary purposes of the DHS is to ensure the safety and security of the U.S. and its people on the borders of the U.S., including coastal borders. For purposes of this study, the stakeholder, DHS, includes any offices within DHS that deal with programmatic budget issues, acquisitions and border security.
Office of the Commandant of the Coast Guard (CG-00)	The Office of the Commandant is charged with the overall responsibility for conducting the Coast Guard's roles and missions (maritime safety, security and stewardship). For purposes of this study, this stakeholder includes all Commandant and Chief of Staff elements dealing with programmatic budget issues and new acquisitions.
Assistant Commandant for Acquisitions (CG-9)	The mission of CG-9 is to acquire and deliver more capable, interoperable assets and systems that support Coast Guard operational forces in executing missions effectively and efficiently. For purposes of this study, this stakeholder includes Acquisition Directorate staff elements dealing with planning and resources and the Director of Acquisition Programs (CG-93), also referred to as the Program Executive Officer (PEO).
Assistant Commandant for Capabilities (CG-7)	As the project sponsor, the mission of CG-7 is to ensure that the men and women of the Coast Guard have the correct capabilities, at the right time, to effectively and efficiently carry out their responsibilities and duties. For purposes of this study, this stakeholder includes the sponsor's representative, Office of C4IT and Sensor Capabilities (CG-761).
Office of Management and Budget (OMB)	OMB controls the level resources (i.e. people and funding) requested from Congress for the Rescue 21 project.
Congress	As the purse-string holders, Congress will authorize and enact the level of resources (i.e. people and funding) for the Rescue 21 project.
Coast Guard Operational Commands	The men and women of the Coast Guard who will utilize the Rescue 21 system while conducting their jobs. For purposes of this study, this stakeholder includes, the Coast Guard Deputy Commandant for Operations (CG-DCO) & associated staff elements, Sectors/Groups/Air Stations, District Offices and other Federal, State and Local authorities.
Industry	The work accomplished by the Rescue 21 contractor (General Dynamics) and subcontractors will be evaluated by the Rescue 21 project staff. These evaluations can determine if the contractor is meeting cost projections, on schedule and producing quality assets according to specification.
International Community	Foreign commercial shipping companies and foreign boaters will gain assurance that the Coast Guard can monitor and provide safety and security for their vessels as they transit close to the U.S. borders. In addition, foreign coast guards and navies can learn from the Rescue 21 project and system on how to provide improved safety and security.
American Public / American Taxpayers	Americans will benefit from improved Coast Guard safety and security. Taxpayers influence Congress as to how money is being allocated. For purposes of this study, this stakeholder includes U.S. commercial shipping companies, fishermen and recreational.



The overall results of this stakeholder analysis show that almost all of the Rescue 21 stakeholders are of high relative importance to the enterprise and, the project is primarily delivering low value to the various stakeholders. Although the PIR data, described in the X-matrix analysis below, shows end-user satisfaction with the Rescue 21 system is high, it does not take into account the delay in delivering the system to various end-users. This delay in Rescue 21 full operating capability (from 2006 to 2017) means that many Coast Guard operational units will have to run and maintain the current, antiquated system. The PIR data simply shows that once an operational command receives the system, they are pleased with its performance. In addition to this schedule delay, increasing project costs also played a key role in the determination of whether or not the Rescue 21 project was providing high value delivery. For example, the American taxpayer, CG-00 and CG-9, are all in the quadrant for low value delivery from the project because the system's total acquisition cost has risen from \$710.5 million in 2005 to \$1,066 million estimated in 2008. Obviously, Congress and OMB are highly concerned with both cost increases and schedule delays; however, the Coast Guard successfully cooperated with the vast amount of inquires from both stakeholders and has convinced them to provide the necessary funding to implement the system. As a result, Congress and OMB are on the border of low and high value delivery.

Figure 32: Rescue 21 Stakeholder Value Comparison

### Stakeholder Value Comparison



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As the Rescue 21 project continues to deploy the system to operational commands and the total acquisition cost and schedule show signs of more stabilization, there is great potential that the Rescue 21 project’s value delivery to its stakeholders will improve.

The overall results provided above were taken from individual Stakeholder Value Exchange and Stakeholder Value Comparison tools. The below figures provide examples of how these tools were applied to the Rescue 21 project. The completed set of these tools for all stakeholders is provided in Appendix D.

**Figure 33: Rescue 21 Stakeholder Value Exchange**

### Department of Homeland Security (DHS) Value Exchange

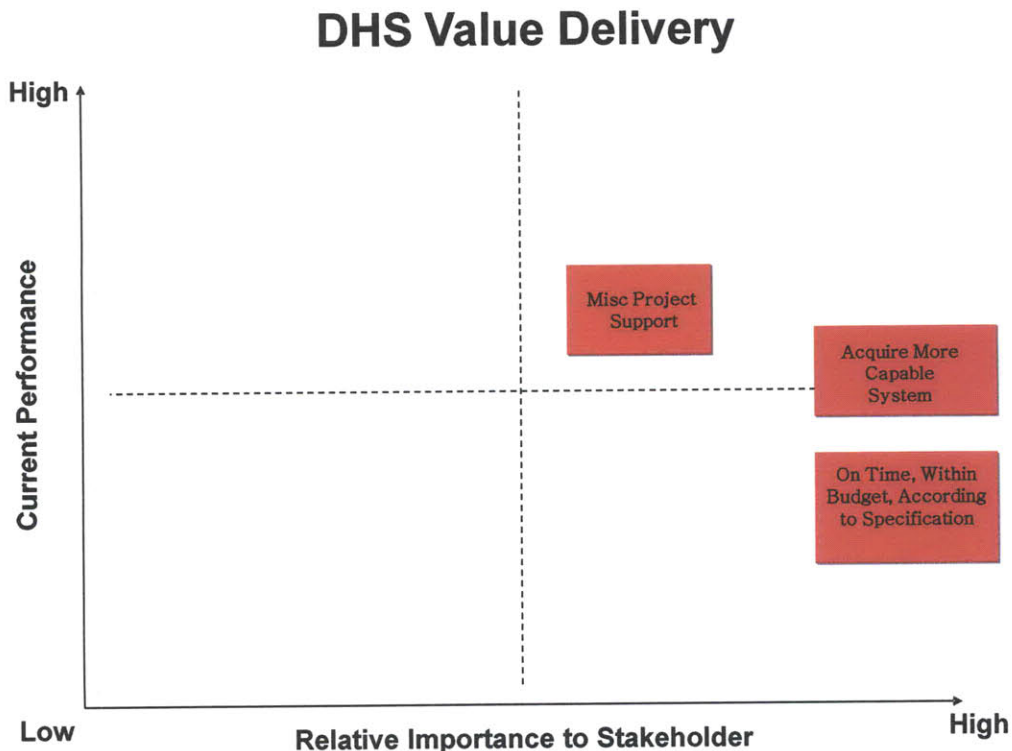
Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>• Support for miscellaneous projects (primarily data call research to answer Administration / Congressional questions)</li> <li>• Acquire and deliver a more capable, interoperable command, control and communications system for coastline borders of the U.S. that supports Coast Guard operational forces in executing missions effectively and efficiently.</li> <li>• Provide new, robust command, control and communications system on time, within cost, according to specification</li> </ul>	<p style="text-align: center;"><b><u>DHS</u></b></p> <ul style="list-style-type: none"> <li>• Any of the offices within DHS – particularly offices dealing with programmatic budget and new acquisition issues, as well as border security</li> </ul>	<ul style="list-style-type: none"> <li>• Support within the Administration and Congress for the acquisition project</li> <li>• Champion methodologies to other DHS agencies (acknowledgement of successful work)</li> <li>• Identify duplicative efforts for consolidation and mission alignment when it makes good sense or when economies of scale can be achieved.</li> <li>• Provide resources to improve acquisition management in support of the President’s Management Agenda.</li> <li>• Approval of the overall acquisition project budget</li> <li>• Overarching guidance and specific tasking</li> </ul>

## Coast Guard Operational Commands Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>Acquire and deliver a more capable, interoperable command, control and communications system that supports Coast Guard operational forces in executing missions effectively and efficiently.</li> <li>Provide new, robust command, control and communications system in a timely manner according to user needs</li> </ul>	<p><b>Operational Commands</b></p> <ul style="list-style-type: none"> <li>39 Coast Guard Sectors</li> <li>95,000 miles of coastline</li> <li>Coast Guard Deputy Commandant for Operations (CG-DCO) &amp; associated staff elements</li> <li>Group/Air Stations</li> <li>District Offices</li> <li>Other Federal, State and Local authorities</li> </ul>	<ul style="list-style-type: none"> <li>Field level needs and requirements</li> <li>Validation and verification of system</li> <li>Field level feedback on product</li> </ul>

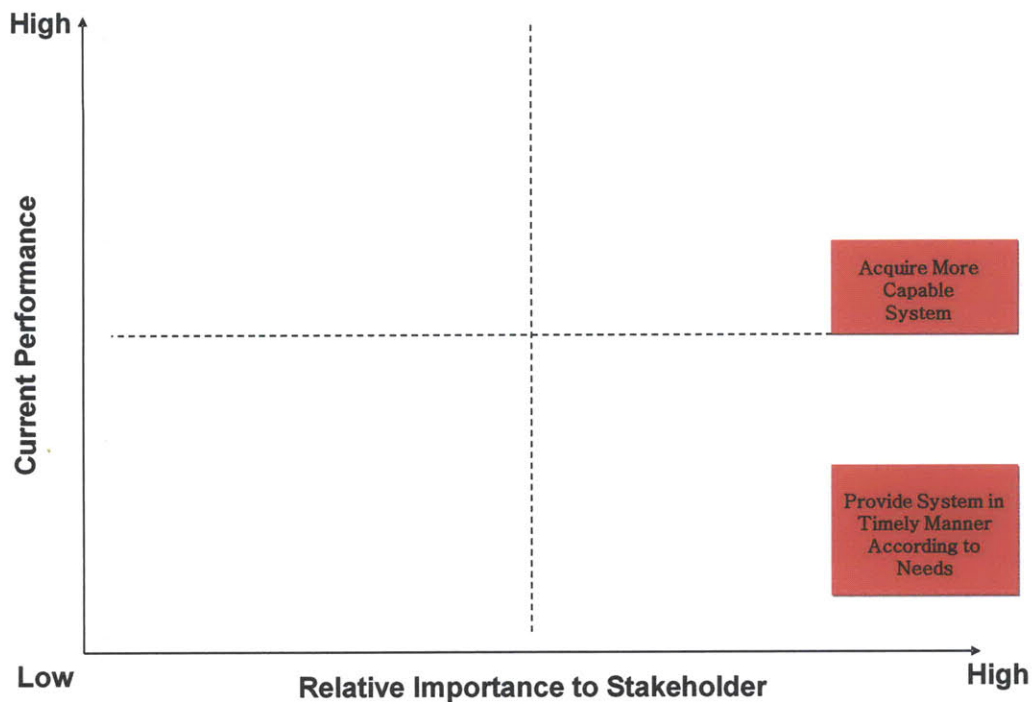
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Figure 34: Rescue 21 Stakeholder Value Comparison



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## CG Operational Commands Value Delivery



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### *X-matrix Analysis*

To conduct an X-matrix analysis, many steps were taken to determine what Strategic Objectives, Stakeholder Values, Key Processes and Metrics should be represented in the X-matrix. An extremely helpful document in the endeavor was the Coast Guard's Major Systems Acquisitions Manual (MSAM). This manual provided pertinent information on Strategic Objectives and Key Processes. Another useful document was the PIR, which provided information concerning the various Metrics used by the Rescue 21 project. Finally, the stakeholder analysis previously conducted laid the groundwork for Stakeholder Values.

Chapter one of the MSAM provides a general overview of the Coast Guard's Acquisitions Directorate (CG-9). The MSAM explains that CG-9 was formed to provide a single point of management for all major system acquisitions and to obtain capable, supportable, affordable and sustainable systems, products and services. Furthermore, the chapter provides the Directorate's Vision, Mission and Statement of Principles as follows:



**Figure 35: Coast Guard Acquisition’s Directorate Vision, Mission and Principles**  
 (Source: Commandant Instruction Manual 5000.10A)

**Vision**

The Coast Guard Acquisition Directorate empowers a workforce motivated by leadership, integrity, and teamwork to deliver the assets and systems that increase operational readiness, enhance mission performance and create a safer working environment.

**Mission**

Acquire and deliver more capable, interoperable assets and systems that support Coast Guard operational forces in executing missions effectively and efficiently.

**Statement of Principles**

**WORKFORCE** – We will develop and maintain a certified acquisition workforce by providing the training, resources and opportunities necessary to help our people succeed and maximize their individual potential.

**INTEGRITY** – We will conduct our business practices in accordance with acquisition regulations and the highest standards of ethics, integrity and professionalism.

**EXCELLENCE** - We will dedicate ourselves to technical excellence, supportability, cost consciousness, quality, innovation, and continuous improvement.

**EMPOWERMENT** - We will provide opportunities for our personnel to develop and use their leadership and decision making skills at all levels of the organization.

**CUSTOMER FOCUS** – We will provide the highest level of customer service possible, making it easy for our customers to work with us, anticipating, and responding promptly to their needs.

**TEAMWORK** – We will partner with our customers, industry and each other, leading the way to open and productive communications.

**LESSONS LEARNED** – We will learn from our mistakes, and apply the collective knowledge, experience and abilities of our workforce to improve the way we do business.

**BUSINESS PRACTICES** – We will standardize and continuously improve our core business processes to increase their effectiveness.

As part of CG-9, the Rescue 21 project is has the same Vision, Mission and Statement of Principles, which serve as the project’s strategic objectives in the X-matrix. The Workforce and Empowerment principles were not included in the X-matrix because they are more applicable to overall CG-9 enterprise. In addition to these items, the MSAM also provides “objectives.” Some of these “objectives” were also included in the X-matrix Strategic Objectives.

**Table 16: MSAM Objectives**  
 (Source: Commandant Instruction Manual 5000.10A)

Objectives
Reduce acquisition cycle time to field useable, affordable, sustainable, and technically mature segments in capability
Manage major acquisition projects using a systems engineering approach that optimizes total system performance and minimizes total ownership costs
Develop cost estimates that document realistic total ownership costs with sufficient



Objectives
accuracy and rigor to enhance our credibility with the Department, Congress and the American taxpayer
Develop major systems acquisition processes and procedures that are flexible, responsive, and allow Project Managers to exercise innovation and creativity to deliver systems, products, and services to our customers in a timely manner
Align Coast Guard major acquisition process with the DHS acquisition management policy established in DHS Acquisition Directive 102-01.

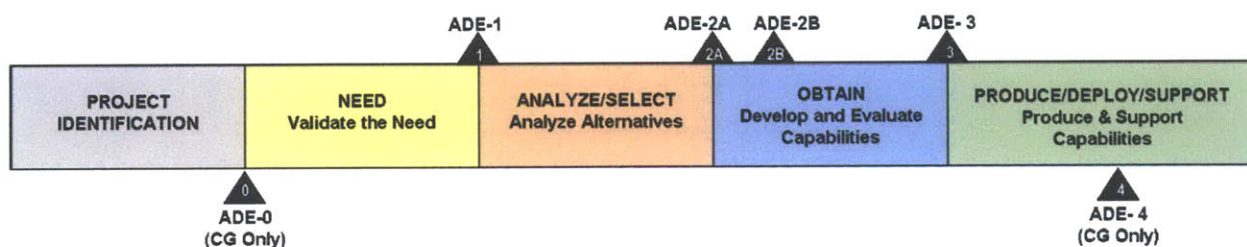
Stakeholder Values were obtained by reviewing the completed Stakeholder Value Exchange and Stakeholder Value Comparison templates and categorizing the various values expected from the Rescue 21 project.

**Table 17: Stakeholder Value Categories**

CATEGORY	STAKEHOLDER VALUE
End-User Needs	Acquire More Capable System; On Time, Within Budget, According to Specification; Coordination; Correct Assets to Perform Mission
Product Quality	On Time, Within Budget, According to Specification; Work Evaluation; Recommendation for Future Work;
Cost Control	On Time, Within Budget, According to Specification; Funding Efforts
Timely Delivery	On Time, Within Budget, According to Specification; Provide System in Timely Manner
Transparency / Accountability	Miscellaneous Project Support; Exchange Best Practices;
Policy / Regulation Adherence	Presidential and Congressional Directives, Departmental Policies
Return on Investment	Acquire More Capable System; Funding Efforts; ROI
Data Integrity	Data on Health of Project; Response to Questions;

An overview of the Coast Guard’s major systems acquisitions process is provided in the MSAM chapter two. In addition, all key sub-processes are also identified and described. The overall acquisition lifecycle is composed of five distinct acquisition phases: Project Identification; Need; Analyze/Select; Obtain; and Produce/Deploy/Support. The Rescue 21 project has ready been through the first three acquisition phases. As a result, the Key Processes used in the X-matrix reflect sub-processes of the Obtain and Produce/Deploy/Support phases.

**Figure 36: Coast Guard Major Systems Acquisition Process**  
 (Source: Commandant Instruction Manual 5000.10A)



During the Obtain phase, project test plans are implemented, essential systems engineering activities are performed and integrated logistics support is accomplished. In the Produce/Deploy/Support phase, segments of operational capability with established logistics support are produced and deployed. In addition, steady state support of the delivered capability occurs after the acquisition project has transitioned full support to the maintenance and sustainment community.

Review of the PIR resulted in the identification of 10 Metrics used by the Rescue 21 project. All of these metrics have been used in the X-matrix analysis. Some of the more interesting metrics will be discussed in this paragraph. The Rescue 21 project stresses its alignment with DHS Strategic Goals and Objectives and USCG Mission-Programs. Even though this metric appears to be static, the Rescue 21 project ensures that this is provided in many of their documents.

**Figure 37: Rescue 21 Alignment with Goals, Objectives and Missions**  
*(Source: Post Implementation Review, 2009)*

*DHS Strategic Goals and Objectives*

Awareness		Prevention			Protection		Response			Recovery	Service	
1.1	1.4	2.1	2.4	2.5	3.1	3.6	4.1	4.2	4.3	5.2	6.3	6.4
							*					

Note: Rescue 21 aligns under DHS Strategic Goal 4 “Strengthen Our Nation’s Preparedness and Emergency Response Capabilities” and, specifically, Objective 4.1 “Ensure Preparedness”

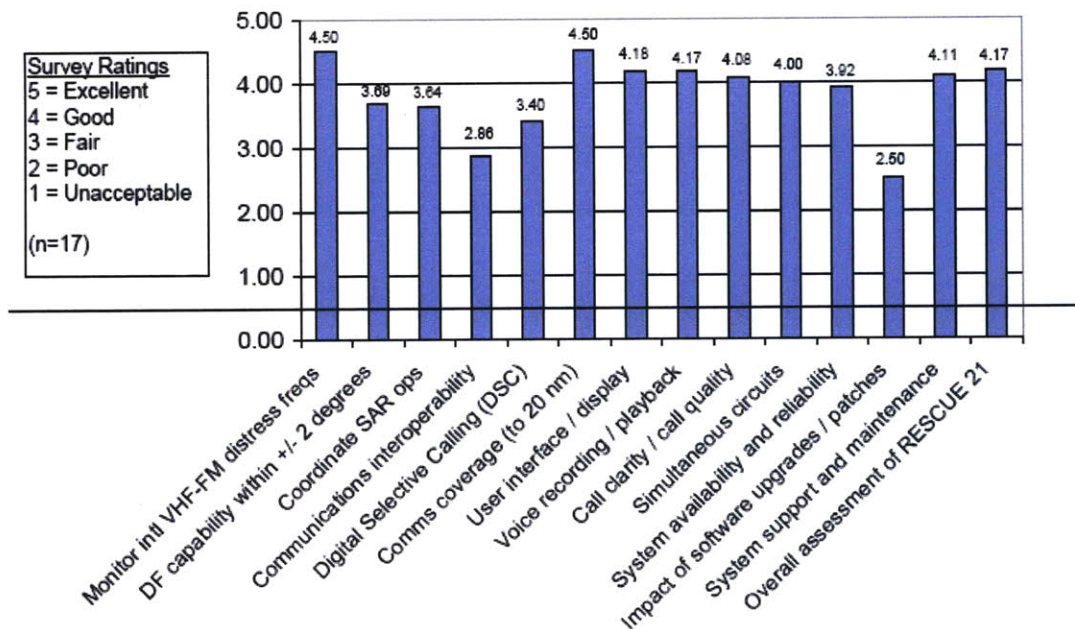
*USCG Mission-Programs*

Maritime Safety		Maritime Mobility		Protection of Natural Resources		Maritime Security				National Defense
Search & Rescue	Marine Safety	AtoN	Ice Ops	MEP	LMR	Drugs	Migrants	Other LE	PWCS	Defense Readiness
*	*							*		

The primary purpose of the PIR is to assess whether or not project deliverables are meeting end-user needs. To meet this purpose in the past, the Rescue 21 project has held a user conference and requested that attendees participate in a survey. Participants in the survey were asked to assess the various Rescue 21 system functions on a five point scale ranging from “excellent” to “unacceptable.” In addition, they were asked to provide detailed feedback on the functions listed in the survey and insight into the overall process of the installation, training, operations and maintenance aspects of Rescue 21. This survey is represented as one X-matrix Metric as Post Implementation Review Survey.



**Figure 38: 2008 Rescue 21 User's Conference Survey**  
 (Source: Post Implementation Review, 2009)



The Rescue 21 project practices active risk management with support from the production contractor, General Dynamics. As part of this active risk management, the Rescue 21 project identifies and assesses risks that may potentially impact the project's cost, schedule and performance goals. In addition, the Rescue 21 project develops and enacts detailed risk mitigation strategies and monitors these actions until closure is achieved. This active risk management effort is an iterative cycle.

**Table 18: Primary risks Monitored by Rescue 21 Project**  
 (Source: Post Implementation Review, 2009)

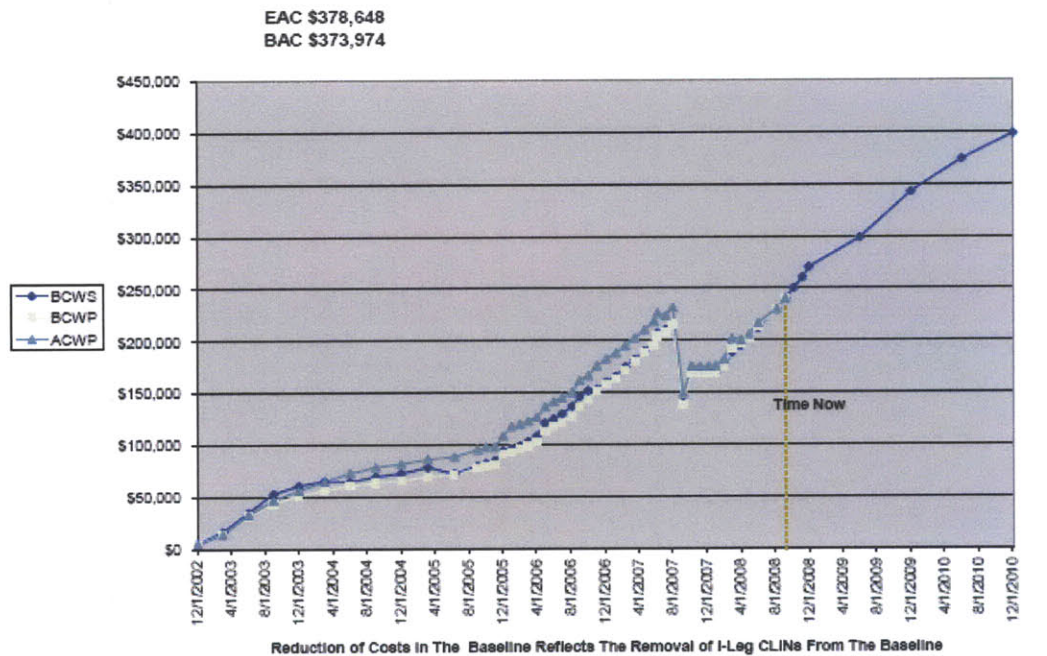
Primary Impact	ID	P	I	P*I	Rank	Trend	Description
Program	Project Staffing	1	4	4	Low	↓	Human Resources may be inadequate to meet Full Rate Production schedule requirements
Cost	O&M costs	3	4	12	Medium	↓	Projected system Operations and Maintenance (O&M) costs may be unaffordable
	Infrastructure Prep	5	4	20	High	↑	Uncertain infrastructure preparation costs may exceed current project budget profile
Schedule	RFF Re-plan	5	4	20	High	↔	RFF site selection, environmental approval, lease negotiation, construction process continues to be on project critical path.

Technical/ Performance	Conversion to DHS OneNet Impact	3	3	9	Medium	↔	Rescue 21 system performance and availability may be negatively impacted by transition from CGDN+ to DHS OneNet
	Sector Modifications	2	5	10	Medium	↔	Sector Command Center mods following Rescue 21 deployment will likely impact system configuration and logistics support
Operations and Maintenance	Life Cycle Management Organization	4	4	16	High	↔	Failure to fund and staff Rescue 21 Life Cycle Management Organization (LCMO) may impact transition, management, oversight, and logistics support of fielded Rescue 21 system

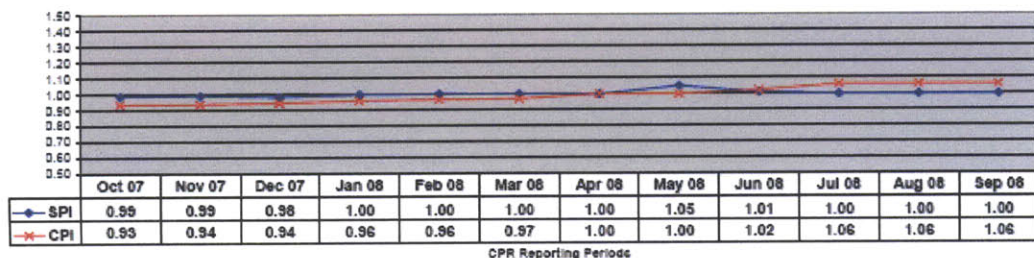
The Rescue 21 project uses Earned Value Management (EVM) data each month as a tool to help in the management and execution of the production contract. The below figure represents the trend lines of the contractor's EVM data.

**Figure 39: Earned Value Management Graphs**

(Source: Post Implementation Review, 2009)



**Cumulative CPI/SPI Trends-Total Contract**  
SPI = Schedule Performance Index and CPI = Cost Performance Index  
(Index of 1.00 = Par for SPI and CPI)

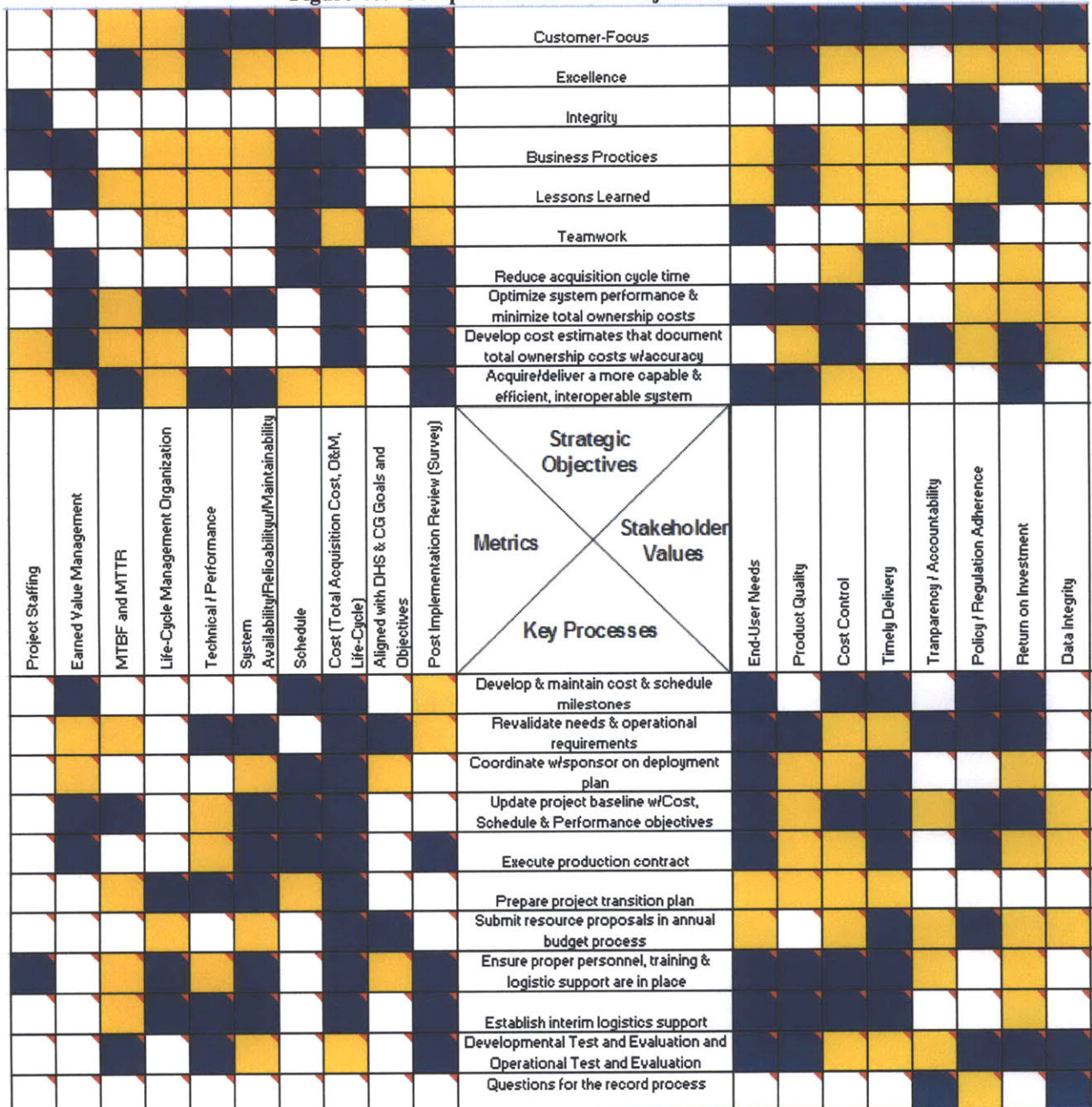




In addition to these metrics, the Rescue 21 project maintains metrics on schedule, total acquisition cost, system reliability, mean-time-between-failure (MTBF) and mean-time-to-repair (MTTR).

The completed X-matrix has a total of 378 possible interactions. Of these interactions, 37% were “strong,” 27% were “weak” and 36% showed no interaction at all. This 36% is problematic since it signifies that there is a great deal of misalignment among Strategic Objectives, Stakeholder Values, Key Processes and Metrics.

**Figure 40: Completed Rescue 21 Project X-Matrix**



Key: Blue = Strong Interactions, Yellow = Weak Interactions, White = None



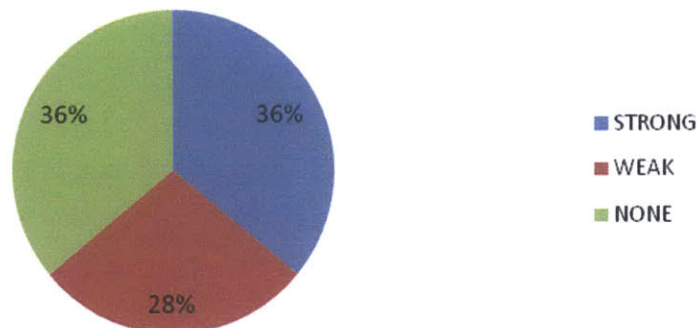
**Table 19: X-Matrix Data Summary**

INTERACTIONS	STRONG	WEAK	NONE	TOTAL
Strategic Objectives and Metrics	36	28	36	100
Metrics and Key Processes	38	19	53	110
Key Processes and Stakeholder Values	37	28	23	88
Stakeholder Values and Strategic Objectives	31	26	23	80
<b>TOTAL</b>	<b>142</b>	<b>101</b>	<b>135</b>	<b>378</b>

In general, it appears that the Rescue 21 project has a solid enterprise architecture foundation; however, the large percentages of “weak” and “none” interactions means that there is much room for improvement. The interactions among these four categories listed in the above table will be reviewed further in the following paragraphs.

*Strategic Objectives and Metrics:* This quadrant of the X-matrix contains the second largest percentage of “none” interactions with 36%. The strategic objective of Integrity shows the greatest misalignment with only two “strong” interactions and eight “none” interactions. This disparity signifies that eight of the metrics do not measure Integrity at all, and that other measures such as procurement or ethical violations should also be recorded. The strategic objective of Reduce Acquisition Cycle Time is the next greatest contributor to the “none” interactions with six. This disparity is significant since much of the low value exchange discovered in the stakeholder analysis is a direct result of not deploying the Rescue 21 system in a timely manner. The metric with the lowest level of interactions is Alignment with DHS and Coast Guard Goals and Objectives. This outcome was expected since, as described above, the metric is static. It applies once, but is important enough to the Rescue 21 enterprise to present it in many documents. The reason for this advertisement of the metric is to show the significance of the Rescue 21 system in achieving high level goals and objectives. Tying the system to these goals and objectives may prove to be beneficial while seeking additional resources.

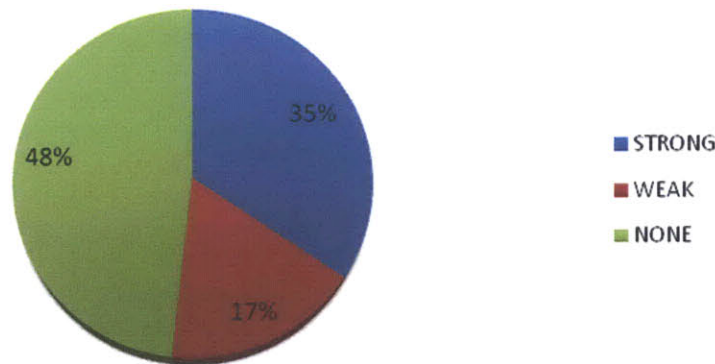
**Figure 41: Rescue 21 Strategic Objectives and Metrics Interaction**



*Metrics and Key Processes:* This quadrant of the X-matrix contains the largest percentage of “none” interactions with 48%. Additionally, the quadrant contains another 17% of “weak”

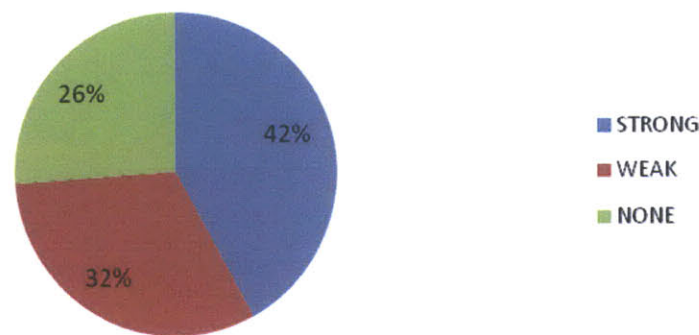
interactions. These percentages are significant because they depict a situation in which there are few metrics that measure the key processes being followed by the enterprise. The best example of this problem is the metric of People Staffing. With the exception of one “strong” interaction, the metric has all “none” interactions; therefore, this metric has little to do with the key processes. Similarly, the key process of Question for the Record Process has no metric interaction at all. Metrics such as total number of questions processed, time for question completion, etc...should be considered by the enterprise.

**Figure 42: Rescue 21 Metrics and Key Processes Interaction**



*Key Processes and Stakeholder Values:* This quadrant of the X-matrix contains the smallest percentage of “none” interactions with 26% and the largest percentage of “strong” interactions with 42%. Many of the key processes (i.e. Establish Interim Logistics Support; Ensure Proper Personnel, Training and Logistic Support are in Place; Coordinate with Sponsor on Deployment Plan; and Prepare Project Transition Plan) deal with the major issue discovered in the stakeholder value exchange analysis, timely delivery of the Rescue 21 system. This connection is a direct result of the Rescue 21 project being in the Produce/Deploy/Support phase acquisition process. Although the interactions exists and are relatively stronger than the other quadrants, the timely delivery issue is not accounted for in the X-matrix.

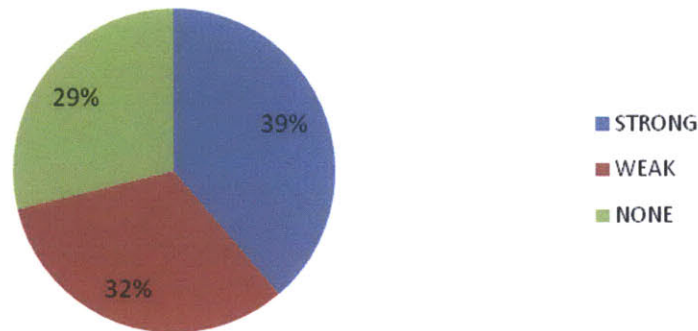
**Figure 43: Rescue 21 Key Processes and Stakeholder Values Interaction**



*Stakeholder Values and Strategic Objectives:* This quadrant of the X-matrix contains the second largest percentage of “strong” interactions with 39%. The most notable interaction is

between the strategic goal of Customer-Focus and the various stakeholder values. The Customer-Focus objective represents 100% of the stakeholder values with “strong” interactions. The reason for this connectivity is because the customer in this strategic objective can be any of the stakeholders – not necessarily the end-user of the Rescue 21 system. In addition, this quadrant contains the second least percentage of “none” interactions with 29%. This 29%, coupled with the 32% of “weak” interactions, means that there is clearly room for improvement in how strategic objectives represent stakeholder values.

**Figure 44: Rescue 21 Stakeholder Values and Strategic Objectives Interaction**



**LESAT Analysis**

The standard MIT-LAI LESAT survey was provided to five leaders within the Rescue 21 enterprise. These leaders included the Deputy Program Manger, Project Manager, Assistant Project Manager, Project Residence Office Commanding Officer and Executive Officer. Certain parts of the LESAT survey were slightly adjusted to reflect that the Rescue 21 project is a government entity vice a private enterprise. The completed LESAT survey produced the following overall results for the current and desired states.

**Table 20 : Rescue 21 Overall LESAT Survey Current State Results**

Current State - Overall LESAT Score											
	Mean			Variance			Range				
Current	2.3			1.0			2.4				

CURRENT STATE - LESAT Section Scores											
Section I - Lean				Section II - Life Cycle Processes				Section III - Enabling Infrastructure			
	Mean	Variance	Range		Mean	Variance	Range		Mean	Variance	Range
Current	2.4	1.2	2.5	Current	2.3	0.8	2.2	Current	2.0	1.0	2.4

**Table 21: Rescue 21 Overall LESAT Survey Desired State Results**

Desired State - Overall LESAT Score			
	Mean	Variance	Range
Desired	3.8	0.6	1.7



DESIRED STATE - LESAT Section Scores											
Section I - Lean				Section II - Life Cycle Processes				Section III - Enabling Infrastructure			
	Mean	Variance	Range		Mean	Variance	Range		Mean	Variance	Range
Desired	3.8	0.6	1.6	Desired	3.9	0.7	1.8	Desired	3.6	0.7	1.8

From these overall scores, cursory conclusions can be made. First, considering both range and variance, the Rescue 21 project leaders differ more in how they assess the current state of the enterprise than the desired state. Second, all three sections of the survey have a greater mean value for the desired state than the current state. The Rescue 21 project leadership recognizes a need for improvement. Further gap analysis of each section of the LESAT survey provides more specifics as to what areas are seen as requiring improvement. In the gap analysis, average values of the current and desired states will be utilized. In addition, only those areas with a gap of greater than or equal to 1.5 will be considered as areas for improvement.

### *Section I – Lean Transformation/Leadership*

In Section I of the survey, there were three subsections with average gaps greater than or equal to 1.5. These subsections are: I.C Focus on the Value Stream, I.D Develop Lean structure and Behavior and I.E create and refine Implementation Plan. Also, subsections I.C and I.D had the highest desired state averages of all the Lean practices in Section I of the survey, which essentially means that these two practices are of high importance to the Rescue 21 leaders in the desired state. This high desire is a good indication that the leadership desires to develop more in terms of being a Lean Enterprise. The subsection, I.C Focus on the Value Stream, may be an indication that the leadership realizes that they are, per the previous stakeholder analysis, providing low value to their stakeholders. Additional focus on this value stream, or exchange, would improve the value provided to stakeholders.

**Table 22: Section I – Lean Transformation/Leadership Averages**

	Section I Averages		
	Current	Desired	Gap
<b>I.A Enterprise strategic planning</b>	2.6	3.9	1.3
<b>I.B Adopt Lean Paradigm</b>	2.2	3.4	1.3
<b>I.C Focus on the Value Stream</b>	2.5	4.0	1.5
<b>I.D Develop lean Structure and Behavior</b>	2.6	4.1	1.5
<b>I.E Create and Refine Implementation Plan</b>	2.1	3.7	1.6
<b>I.F Implement Lean Initiatives</b>	2.3	3.7	1.4
<b>I.G Focus on Continuous Improvement</b>	2.1	3.3	1.2

*Section II – Life-Cycle Processes*

Of the six subsections covered in this section of the survey, four of them had gaps of 1.5 or greater. Each of these subsections received an average desired state greater than 4.0 – a positive sign that the leadership desires to do better in these areas. These subsections include: II.A Business Acquisition and Program Management, II.B Requirements Definition, II.C Develop Product and Process and II.F Distribute and Service Product. In order to draw conclusions from this information, it is important to take a more detailed look at the lean practices that make-up each subsection. For subsection II.A, a look at the Lean practices indicates that the leadership desires to improve the utilization of assets, capability to manage risk, cost, schedule and performance, and ability to leverage Lean principles. In subsection II.B, it can be surmised that the leadership desires to optimize life-cycle value and future requirements definition. In subsection II.C, the leadership shows a strong desire to incorporate stakeholder values into product development and processes. In subsection II.F, the leadership places great emphasis on delivering the product in a Lean fashion and enhancing the value of delivered products to stakeholders. All of these subsections allude to the recurring issue identified in the stakeholder value comparison analysis; the Rescue 21 project is providing low value to its stakeholders. It is a good sign that the leadership recognizes this shortfall and desires to improve.

**Table 23: Section II – Life-Cycle Processes Averages**

	<b>Section II Averages</b>		
	<b>Current</b>	<b>Desired</b>	<b>Gap</b>
<b>II.A. Business Acquisition and Program Management</b>	2.6	4.3	1.7
<b>II. B. Requirements Definition</b>	2.5	4.4	1.9
<b>II.C. Develop Product and Process</b>	2.7	4.3	1.6
<b>II.D. Supply Chain Management</b>	1.9	3.2	1.3
<b>II.E. Produce Product</b>	1.6	3.0	1.4
<b>II.F. Distribute and Service Product</b>	2.3	4.2	1.9

*Section III – Enabling Infrastructure*

Both of the subsections in this section of the survey have average gaps of 1.5 or greater; however, the desired state averages are 3.8 and 3.4. These lower averages indicate a lower relative importance to the leadership. For example; the desired state averages for the subsections in section II were 4.2 and greater, demonstrating a stronger desire for change. This information is interesting since it can be interpreted as the leadership does not have a strong desire to create, or enable, Lean processes. Perhaps, the leadership feels this way because they have already



come under heavy scrutiny by Congress and the GAO and, they feel that Lean processes will only increase the level of potential scrutiny in the future.

**Table 24: Section II – Enabling Infrastructure Averages**

	<b>Section III Averages</b>		
	<b>Current</b>	<b>Desired</b>	<b>Gap</b>
<b>III.A. Lean Organisational Enablers</b>	2.0	3.8	1.8
<b>III.B. Lean Process Enablers</b>	1.9	3.4	1.5

**Conclusion**

Recall that Chapter Four provided the important outcome that Lean principles and the ESAT methodology can apply to service enterprises. Also, recall that Chapter Four ended with a question, “Can the application of Lean principles and the ESAT methodology provide the Coast Guard with great insights on how to provide better value to its stakeholders now and in the future?” In this chapter, three key steps of the ESAT methodology, stakeholder, X-matrix and LESAT analyses, were applied to the Coast Guard’s Rescue 21 project in order to answer this question.

The stakeholder analysis revealed that the Rescue 21 project provides low value to its various stakeholders. This low value is a direct result of cost overruns and not being able to provide the system in a timely manner. The X-matrix analysis, with 63% of the potential interactions being “weak” or “none,” demonstrated that there is a great deal of misalignment among Strategic Objectives, Stakeholder Values, Key Processes and Metrics. In addition, the X-matrix showed that that the two quadrants with the largest percentages of “strong” interactions both involved stakeholder values. This fact means that the enterprise architecture has a good foundation to improve the value provided to stakeholders. Keeping with this theme, one of the most important insights gained from the LESAT analysis is that the Rescue 21 project leadership sees the value provided to stakeholders in the current state as low and they greatly desire to improve in this area. These findings help answer the question of Chapter Four.

.....By using the Rescue 21 project as a representative enterprise within the newly re-organized Coast Guard’s Acquisitions Directorate, it has been shown that Lean principles and the application of the ESAT methodology can provide the Coast Guard with great insights as to how to provide better value to its stakeholders. In response to the question that ended Chapter Four, “Can the application of Lean principles and the ESAT methodology provide the Coast Guard with great insights on how to provide better value to its stakeholders now and in the future,” the answer is, “Yes.”

# CHAPTER EIGHT

## Summary

“The American people expect the Coast Guard to respond to crises; to protect our natural resources and territorial interests; to provide for maritime homeland security; and to help defend the United States in time of war. The fundamental mission of the Coast Guard acquisition enterprise remains: to deliver the assets, systems and services that provide our customers (the operating forces) with the best means with which to execute their missions in the nation’s service.” - RADM Gary T. Blore, Assistant Commandant for Acquisition (CG-9 Fact Sheet, 2008)

Under the leadership of the Commandant of the Coast Guard, Admiral Allen, and Rear Admiral Blore, the Coast Guard has made significant improvements to the resources, policies and processes that make up its Acquisition Directorate. In fact, in the past two years, the Acquisition Directorate has had success in providing the right assets, enabling the men and women of the Coast Guard to perform their roles and missions. The Coast Guard’s *Blueprint for Acquisition Reform* has served as an excellent tool in outlining reforms to improve: Organizational Alignment and Leadership, Human Capital, Policies and Procedures, and Knowledge and Information Management. In written testimony to the Committee on Appropriations, U.S. House of Representatives, in April 2009, Admiral Allen stated, “With acquisition reform firmly taking root, the future of Coast Guard acquisition is bright. We have learned from the past, but our focus remains on the future. Reformed processes have already led to acquisition success, but I am confident our greatest successes lay ahead, if we remain committed to the foundational principles and acquisition cornerstones that have driven our reforms (Allen Testimony, 2009).”

It is this focus on the future of Coast Guard major system acquisitions that will be critical to the ability of Coast Guard men and women to perform their enduring roles and missions. Therefore, there are several questions, previously raised in Chapter Six, which readily come to mind:

- What happens after the *Blueprint* action items are 100% completed?
- Has emphasis on the *Blueprint* detracted from other key issues that are being overlooked?
- How can the success of the *Blueprint* completion be validated?
- What tools can be used to complement the *Blueprint* in emphasizing continuous improvement?

To answer these questions, a study conducted on an enterprise within the U.S. Air Force’s acquisition organization was presented. This study demonstrated that Lean Principles and the ESAT methodology can be applied to a service, more importantly, an enterprise involved in government major system acquisitions. This detailed study led to the underlying question, “Can the application of Lean principles and the ESAT methodology provide the Coast Guard with

great insights on how to provide better value to its stakeholders now and in the future?” As demonstrated in Chapter Seven, the answer is, “Yes.” During this time of reorganization within the Coast Guard’s Acquisitions Directorate, the Coast Guard would benefit from the application of these Lean principles and practices, transforming the directorate into a Lean Enterprise.

### ***Follow-on Work***

This overall study provides a solid foundation for further exploration into the impact of applying Lean principles and the ESAT methodology to the Coast Guard’s Acquisition Directorate. Follow-on work would include completing the full ESAT methodology on the Rescue 21 project. Perhaps, the most important part of this follow-on work would be the creation of an actionable transformation plan to address current and future value delivery issues. The action items within this transformation plan could be defined in general terms and applied to the Acquisition Directorate as a whole, serving as catalysts for recommended changes to resources, policies and procedures. Additionally, a direct comparison between the recommendations in the *Blueprint for Acquisitions Reform* and the results of the ESAT methodology could be conducted. The strengths of both methodologies could be combined to provide one optimal plan for the Coast Guard’s Acquisition Directorate to follow. In essence, a holistic enterprise architecting approach could be taken further improve the Coast Guard’s Acquisition Directorate’s ability to provide value to its stakeholders.

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# APPENDIX A

## Probability of Program Success (PoPS) Score System

(Source: U.S. Air Force)

Status	Score	Description
Green	80 to 100	Program is on track for providing originally scoped capability within budgeted cost and approved schedule and has addressed any supportability and lifecycle systems engineering issues; issues are minor in nature (resolvable at Program Manager (PM) level during normal execution).
Yellow	60 to <80	Program is on track for providing acceptable capability with acceptable deviations from budgeted cost and approved schedule and has addressed any supportability and lifecycle systems engineering issues; issues may be major but are solvable within normal acquisition processes (resolvable at PM/ Milestone Decision Authority (MDA) level without program re-baselining/restructuring).
Red	<60, or Existing "Killer Blows" at Level 2 metrics	<p>Acceptable* capability will NOT be provided, or will only be provided with unacceptable deviations from budgeted cost and approved schedule and has not addressed supportability and lifecycle systems engineering issues; issues are major and NOT solvable within normal acquisition processes (e.g., Program Restructure/Re-baseline Required).</p> <p>*Acceptable – Deviations from Originally-Scoped Capability, Program Schedule, and/or Program Cost that have been approved by the Sponsor (for capability) or the Milestone Decision Authority (MDA) (for Cost and Schedule).</p>
Killer Blow	KB	Action taken by a decision maker in the chain of command (or an "Advocacy" player) or occurrence of an event within any metric resulting in a program being non-executable until remedied – results in immediate "red" coloration of Overall PoPS metrics until remedied (e.g., zeroing of program budget by Congressional action, Nunn-McCurdy breaches, the need generated for a program re-baseline).

## APPENDIX B

### LESAT Enterprise Self-Assessment Tool (LESAT)

#### SECTION I SUMMARY SHEET - LEAN TRANSFORMATION/LEADERSHIP

Process Definition: Develop and deploy lean implementation plans throughout the enterprise leading to (1) long-term sustainability, (2) acquiring competitive advantage and (3) satisfaction of stakeholders.

NOTE: Areas highlighted in YELLOW reflect changes made to the survey prior to giving it to the Rescue 21 leadership. Changes were attended to make the particular areas more relevant to the Rescue 21 project.

ESAT Link	Lean Practice	Lean Characteristic	Capability Level	
			Current	Desired
I.A. Enterprise Strategic Planning	I.A.1 Integration of Lean in strategic planning process	Lean impacts growth, profitability and market penetration (impacts mission execution)		
	I.A.2 Focus on customer value	Customers (i.e. Sector Commands) pull value from enterprise value stream		
	I.A.3 Leveraging the extended enterprise	Value stream extends from customer through the enterprise to suppliers (or other stakeholders, i.e. American citizens).		
<i>Average</i>				
I.B. Adopt Lean Paradigm	I.B.1 Learning and education in "Lean" for enterprise leaders	"Unlearning" the old, learning the new		
	I.B.2 Senior management commitment	Senior management leading it personally		
	I.B.3 Lean enterprise vision	New mental model of the enterprise		
	I.B.4 A sense of urgency	The primary driving force for Lean		
<i>Average</i>				
I.C. Focus on the Value Stream	I.C.1 Understanding current value stream	How we now deliver value to customers		
	I.C.2 Enterprise flow	"Single piece flow" of materials and information provided to various stakeholders (i.e. Service men and women, Commands, Congress, Administration)		
	I.C.3 Designing future value stream	Value stream to meet the enterprise vision		
	I.C.4 Performance measures	Performance measures drive enterprise behavior		
<i>Average</i>				
I.D. Develop Lean Structure and Behavior	I.D.1 Enterprise organizational orientation	Organize to support value delivery		
	I.D.2 Relationships based on mutual trust	"Win-win" vs. "we-they" (with various Stakeholders including contractors)		

NOTE: Areas highlighted in YELLOW reflect changes made to the survey prior to giving it to the Rescue 21 leadership. Changes were attended to make the particular areas more relevant to the Rescue 21 project.

ESAT Link	Lean Practice	Lean Characteristic	Capability Level	
			Current	Desired
<b>I.D. Develop Lean Structure and Behavior</b>	I.D.3 Open and timely communications	Information exchanged when required		
	I.D.4 Employee empowerment	Decision-making at lowest possible level		
	I.D.5 Incentive alignment	Reward the behavior you want		
	I.D.6 Innovation encouragement	From risk aversion to risk rewarding		
	I.D.7 Lean change agents	The inspiration and drivers of change		
		<i>Average</i>		
<b>I.E. Create &amp; Refine Transformation Plan</b>	I.E.1 Enterprise-level Lean transformation plan	Charting the course across the extended enterprise		
	I.E.2 Commit resources for Lean improvements	Resource provision for lean		
	I.E.3 Provide education and training	Just-in-time learning (on processes, methods, metrics, etc...)		
		<i>Average</i>		
<b>I.F. Implement Lean Initiatives</b>	I.F.1 Development of detailed plans based on enterprise plan	Coordinating lean type of improvements		
	I.F.2 Tracking detailed implementation	Assessing actual outcomes against goals		
		<i>Average</i>		
<b>I.G. Focus on Continuous Improvement</b>	I.G.1 Structured continuous improvement processes	Uniformity in how we get better		
	I.G.2 Monitoring lean progress	Assessing progress toward achieving enterprise objectives		
	I.G.3 Nurturing the process	Assure executive level involvement		
	I.G.4 Capturing lessons learned	Ensuring that successes lead to more successes		
	I.G.5 Impacting enterprise strategic planning	Results lead to strategic opportunities		
		<i>Average</i>		



## SUMMARY SHEET - LESAT SECTION II

### Section II - Life-Cycle Processes

Definition: Implement Lean practices across life-cycle processes for defining customer requirements, designing products and processes, managing supply chains, producing the product, distributing product and services and providing post delivery support.

NOTE: Areas highlighted in YELLOW reflect changes made to the survey prior to giving it to the Rescue 21 leadership. Changes were attended to make the particular areas more relevant to the Rescue 21 project.

ESAT Link	Lean Practice	Lean Characteristic	Capability Level	
			Current	Desired
<b>II.A. Business Acquisition and Program Management</b>	II.A.1 Leverage Lean capability for business growth / improvement	Exploiting new business opportunities arising from lean enabled capabilities		
	II.A.2 Optimize the capability and utilization of assets	Lean enables business growth improved process efficiency through the redeployment optimal use of assets / resources (people, money)		
	II.A.3 Provide capability to manage risk, cost, schedule and performance	Success follows effective risk management		
	II.A.4 Allocate resources for program development / improvement efforts	Teaming for success		
<i>Average</i>				
<b>II.B. Requirements Definition</b>	II.B.1 Establish a requirements definition process to optimize lifecycle value	Stakeholder pull vs. technology/product push		
	II.B.2 Utilize data from the extended enterprise to optimize future requirement definitions	Closed loop processes are in place to capture operational performance data once system is deployed and fully operating		
<i>Average</i>				
<b>II.C. Develop Product and Process</b>	II.C.1 Incorporate customer value into design of products and processes	Understanding customer value allows continuous improvement of product and process		
	II.C.2 Incorporate downstream stakeholder values into products and processes	Understanding downstream stakeholders allows value to flow seamlessly to customer		
	II.C.3 Integrate product and process development	Breaking down of functional silos enables seamless communication and value flow		
<i>Average</i>				



NOTE: Areas highlighted in YELLOW reflect changes made to the survey prior to giving it to the Rescue 21 leadership. Changes were attended to make the particular areas more relevant to the Rescue 21 project.

ESAT Link	Lean Practice	Lean Characteristic	Capability Level	
			Current	Desired
II.D. Manage Supply Chain	II.D.1 Define and develop supplier (contractor) network	Core competencies aligned across supplier (contractor) network		
	II.D.2 Optimize network-wide performance achieve customer value	Partnering with key suppliers and optimizing processes to		
	II.D.3 Foster innovation and knowledge-sharing throughout the supplier network	Incentivizing innovation & technology transfer		
<i>Average</i>				
II.E. Produce Product	II.E.1 Utilize production knowledge and capabilities for competitive advantage	Strategic leveraging of manufacturing capability		
	II.E.2 Establish and maintain a Lean production system	Defect free production pulled by the customer		
<i>Average</i>				
II.F. Distribute and Service Product	II.F.1 Align sales and marketing to production	Matching demand and capabilities		
	II.F.2 Distribute product in Lean fashion	Right product, right quantity at the right time		
	II.F.3 Enhance value of delivered products and services to customers and the enterprise	Responding to the voice of the customer		
	II.F.4 Provide post delivery service, support and sustainability	Providing customer solutions		
<i>Average</i>				

## SUMMARY SHEET - LESAT SECTION III

### Section III - Enabling Infrastructure

Definition: To achieve a successful lean transformation, the enterprise infrastructure must support the implementation of Lean principles, practices and behavior.

NOTE: Areas highlighted in YELLOW reflect changes made to the survey prior to giving it to the Rescue 21 leadership. Changes were attended to make the particular areas more relevant to the Rescue 21 project.

ESAT Link	Lean Practice	Lean Characteristic	Capability Level	
			Current	Desired
III.A. Lean Organizational Enablers	III.A.1 Financial system supports Lean transformation	Lean requires appropriate financial data		
	III.A.2 Enterprise stakeholders pull required financial information	Data on demand		
	III.A.3 Promulgate the Learning Organization	Learning organizations create a flexible workforce		
	III.A.4 Enable the Lean enterprise with information systems and tools	Facilitate the flow of information and knowledge		
	III.A.5 Integration of environmental protection, health and safety into the business	"Cleaner, healthier, safer"		
		<b>Average</b>		
III.B. Lean Process Enablers	III.B.1 Process standardization	Strive for consistency and re-use		
	III.B.2 Common tools and systems	Assuring compatibility, reducing costs		
	III.B.3 Variation reduction	Reduce uncertainty by reducing variation		
		<b>Average</b>		

## APPENDIX C

### **Description: Data Assurance**

achieving timely access to accurate, authoritative, and reliable information supporting acquisition oversight, accountability, and decision making throughout the Air Force for effective and efficient delivery of warfighter capabilities.

### **Impact**

#### **On Stakeholders:**

*Benefits: a more flexible responsive environment that supports better investment decisions, greater accountability, increased management agility, and improved reporting to Congress. In short Data Assurance will enable the most judicious investment of the taxpayer's money and assure the focus is kept on the parameters most critical to the warfighter.*

#### **On Strategic Objectives:**

*SAFIACPO is chartered to lead, manage, integrate and expedite AF acquisition transformation. This requires access to valid and timely data. The Data Assurance initiative directly supports this primary strategic objective.*

#### **On Current Processes:**

*The DA initiative will increase the level of accountability that is placed upon the principals who provide data to SAFIACPO. It will require that these participants be actively engaged in the process and conform to the standards that the new process will require.*

### **Resources Required:**

Estimate the resources required to further investigate and implement this opportunity. What time, money, people, etc. is required?

*Training cost (web-based): \$750 per person—Total acquisition personnel: 600*

*Training material cost: \$3,000,000 (Upgrade investments: \$5M)*

*Travel budget for data and system validation: \$1M*

*Total cost=\$3,450,000*

*Utilizing existing Defense Acquisition University personnel and courses*

### **Expected Outcomes:**

What are the expected benefits to the enterprise after implementing this improvement? What should include target values for measurable outcomes.

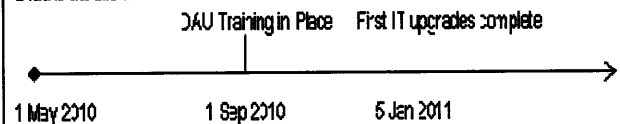
*Data reliability in excess of 99%*

*Data completeness in excess of 90%*

*Data access 24 hours per day*

### **Timeline:**

What is the timeline for further investigation and implementation? What is the start date and the duration?



### **Buy-in Required**

**Owner: Deputy Assistant Secretary for Acquisition Integration**

**Sponsor (if required): Assistant Secretary of the Air Force for Acquisitions (SAFIAQ)**

**Description: Data Standards Development**

This is a subproject of the Data Assurance project. This subproject creates data standards for all data collected and analyzed in the SAF/IAQ enterprise. These data standards will be documented and formalized in AF policy. In addition, any software changes that must be made to allow for data standardization will be made by this subproject. Data standards must comply with military specifications, AF policy and /or industry standards. Deliverables include: policy document and software changes (if required).

**Impact**

**On Stakeholders:**

*Standardized data will the data entry process by removing any ambiguity. It will improve the accuracy and reliability of all data collected. The end result will be improved information to be used in assessing the health of any acquisition program. This ability will be a benefit to nearly all stakeholders with the exception of end-user stakeholders.*

**On Strategic Objectives:**

*SAFACPO is chartered to lead, manage, integrate and expedite AF acquisition transformation. This requires access to valid and timely data. The Data Standards Development subproject directly supports this primary strategic objective.*

**On Current Processes:**

*Data standardization will yield improved data integrity/ reliability/ accuracy. With improved data, better assessments of AF acquisition programs can be made to assist in decision making processes.*

**Resources Required:**

Estimate the resources required to further investigate and implement this opportunity. What time, money, people, etc. is required?

- 1 Data Standardization Managers / 6 months / \$6,000**
- 2 Instructional Technologists / 6 months / \$12,000**
- 1 Software Engineer / as needed / \$3,000**

*Note: Time periods are not for full time work. They reflect duration of subproject.*

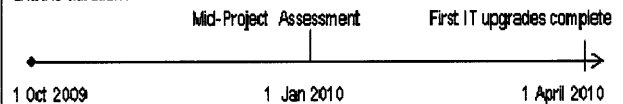
**Expected Outcomes:**

What are the expected benefits to the enterprise after implementing this improvement? This should include target values for measurable outcomes.

- Data reliability in excess of 99%**
- Data completeness in excess of 99%**
- Data access 24 hours per day**

**Timeline:**

What is the timeline for further investigation and implementation? What is the start date and the duration?



**Buy-in Required**

**Owner: Deputy Assistant Secretary for Acquisition Integration**

**Sponsor (if required): Assistant Secretary of the Air Force for Acquisitions (SAF/IAQ) / All acquisition program managers (PEOs) / data managers**



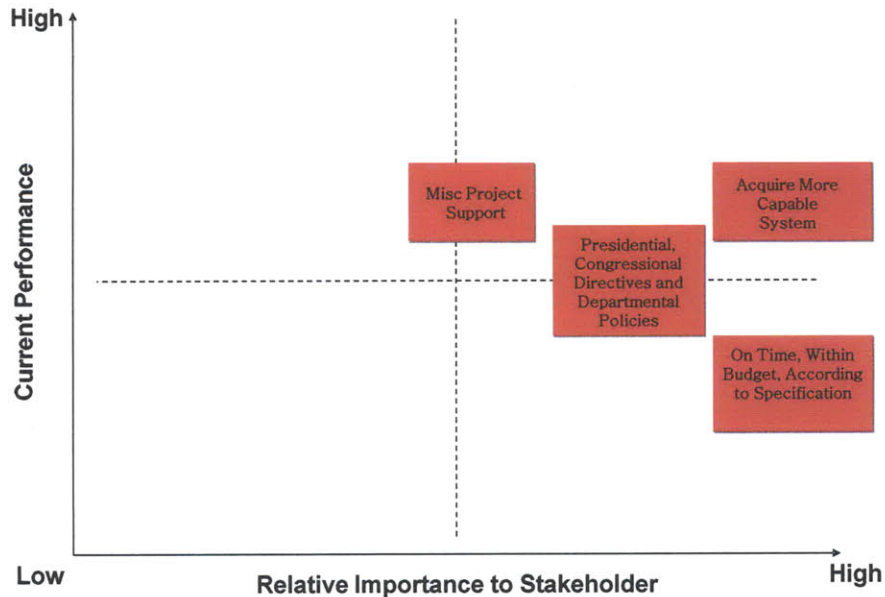
# APPENDIX D

## Office of the Commandant of the Coast Guard (CG-00) Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>• Support for miscellaneous projects (primarily data call research to answer Administration / Congressional questions)</li> <li>• Acquire and deliver a more capable, interoperable command, control and communications system for coastline borders of the U.S. that supports Coast Guard operational forces in executing missions effectively and efficiently.</li> <li>• Provide new, robust command, control and communications system on time, within cost, according to specification</li> <li>• Assurance that Congressional / Presidential Directives, Federal Acquisition Regulations and CG / DHS policies are being followed</li> </ul>	<p><b>Commandant (CG-00) / Chief of Staff (CG-01)</b></p> <ul style="list-style-type: none"> <li>• All Commandant and Chief of Staff elements – particularly those offices dealing with programmatic budget and new acquisition issues</li> </ul>	<ul style="list-style-type: none"> <li>• Support within the Administration and Congress for the acquisition project</li> <li>• Champion methodologies to DHS agencies (acknowledgement of successful work)</li> <li>• Identify duplicative efforts for consolidation and mission alignment when it makes good sense or when economies of scale can be achieved</li> <li>• Provide resources to improve acquisition management in support of the President's Management Agenda</li> <li>• Approval of the overall acquisition project budget</li> <li>• Overarching guidance and specific tasking</li> </ul>

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### CG-00 Value Delivery



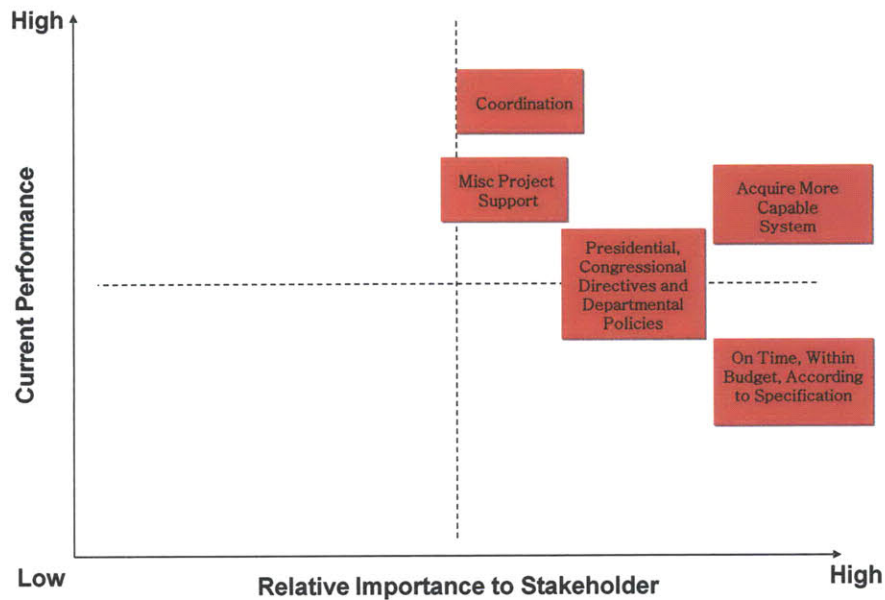
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## Assistant Commandant for Acquisitions (CG-9) Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>Support for miscellaneous projects (primarily data call research to answer Commandant / Administration / Congressional questions)</li> <li>Acquire and deliver a more capable, interoperable command, control and communications system for coastline borders of the U.S. that supports Coast Guard operational forces in executing missions effectively and efficiently.</li> <li>Provide new, robust command, control and communications system on time, within cost, according to specification</li> <li>Provide coordination among various Coast Guard headquarters and field units to ensure that the correct product is being delivered</li> <li>Assurance that Congressional / Presidential Directives, Federal Acquisition Regulations and CG / DHS policies are being followed</li> </ul>	<p><b>Assistant Commandant</b></p> <ul style="list-style-type: none"> <li>Acquisition Directorate staff elements dealing with planning and resources</li> <li>Includes the Director of Acquisition Programs (CG-93), also referred to as the Program Executive Officer (PEO)</li> </ul>	<ul style="list-style-type: none"> <li>Support within the Coast Guard, Administration and Congress for the acquisition project</li> <li>Champion methodologies throughout the Coast Guard and to DHS agencies (acknowledgement of successful work)</li> <li>Identify duplicative efforts for consolidation and mission alignment when it makes good sense or when economies of scale can be achieved</li> <li>Obtain resources to improve acquisition management</li> <li>Approval of the overall acquisition project budget</li> <li>Overarching guidance and specific tasking</li> </ul>

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## CG-9 Value Delivery



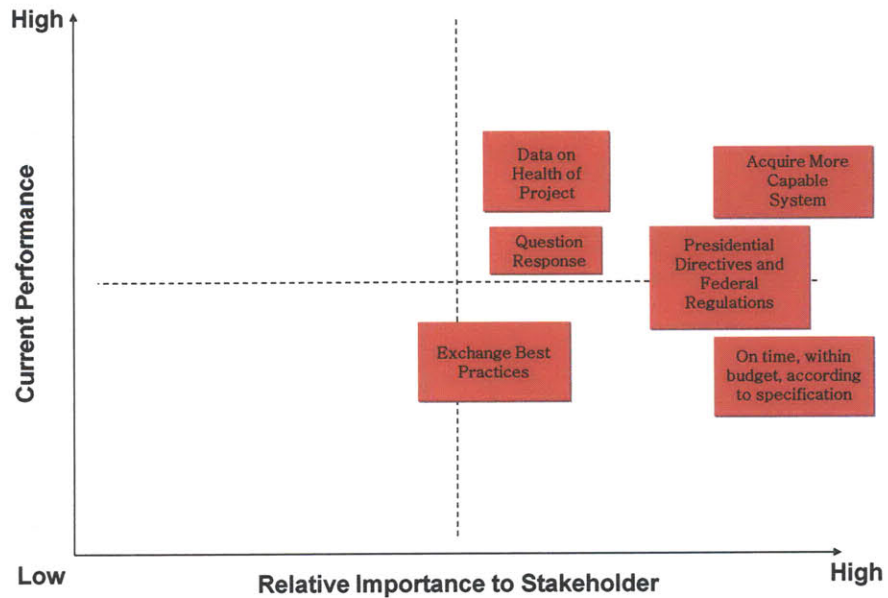
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## Office of Management and Budget (OMB) Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>Indirectly provide data on health of the acquisition project in terms of total acquisition cost, schedule and capability</li> <li>Indirect assurance that Presidential Directives and Federal Acquisition Regulations are being followed</li> <li>Indirect responses to Administration / Congressional questions</li> <li>Exchange of project best practices</li> <li>Acquire and deliver a more capable, interoperable command, control and communications system for coastline borders of the U.S. that supports Coast Guard operational forces in executing missions effectively and efficiently.</li> <li>Provide new, robust command, control and communications system on time, within cost, according to specification</li> </ul>	<p><b>OMB</b></p> <ul style="list-style-type: none"> <li>Program reviewer for Coast Guard acquisition programs</li> <li>Director of OMB</li> <li>Budget Coordinators</li> </ul>	<ul style="list-style-type: none"> <li>Administrative support of the acquisition project's budget request in Congress and within the Administration</li> <li>Assessment of the acquisition project in the President's Budget and Performance Plan</li> <li>Exchange of Government best practices</li> </ul>

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## OMB Value Delivery



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### Assistant Commandant for Capabilities (CG-7) Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>Acquire and deliver a more capable, interoperable command, control and communications system that supports Coast Guard operational forces in executing missions effectively and efficiently.</li> <li>Provide new, robust command, control and communications system in a timely manner according to user needs</li> </ul>	<p><b>Assistant Commandant</b></p> <ul style="list-style-type: none"> <li>Program / project sponsor</li> <li>Sponsor's representative Office of C4IT and Sensor Capabilities (CG-761)</li> </ul>	<ul style="list-style-type: none"> <li>Field level needs and requirements</li> <li>Validation and verification of system</li> <li>Field level feedback on product</li> <li>Support within the Coast Guard and DHS for resources (i.e. funding)</li> <li>Identify duplicative efforts for consolidation and mission alignment when it makes good sense or when economies of scale can be achieved</li> </ul>

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### CG-7 Value Delivery



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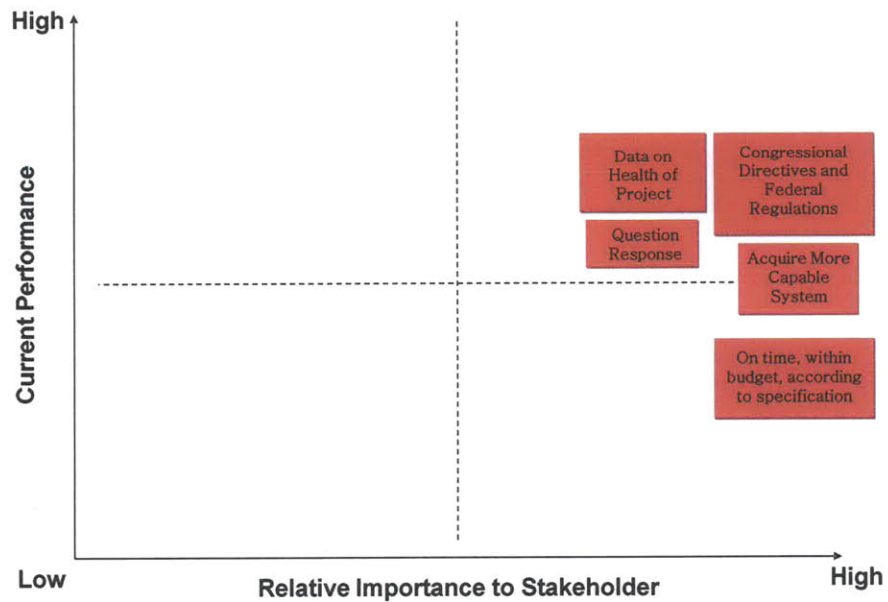


## Congress Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>• Indirectly provide data on health of the acquisition project in terms of total acquisition cost, schedule and capability</li> <li>• Indirect assurance that Congressional and Federal Acquisition Regulations are being followed</li> <li>• Indirect responses to Administration / Congressional questions</li> <li>• Acquire and deliver a more capable, interoperable command, control and communications system for coastline borders of the U.S. that supports Coast Guard operational forces in executing missions effectively and efficiently.</li> <li>• Provide new, robust command, control and communications system on time, within cost, according to specification</li> </ul>	<p style="text-align: center;"><b>Congress</b></p> <ul style="list-style-type: none"> <li>• Appropriations Committees / Subcommittees</li> <li>• Authorization Committees / Subcommittees</li> <li>• Individual Senators and/or Representatives whose constituents are impacted by the project (i.e. boating public in Florida)</li> </ul>	<ul style="list-style-type: none"> <li>• Acquisition project appropriations</li> <li>• Acquisition project authorization</li> <li>• Supplemental appropriations</li> <li>• Persuasion of Administration officials to support project</li> </ul>

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## Congress Value Delivery



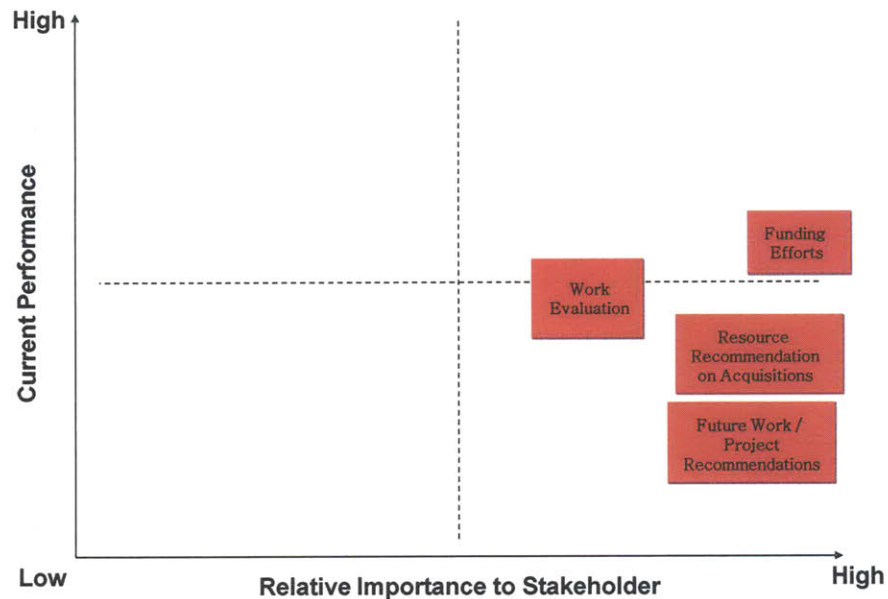
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## Industry Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>• Work evaluation to determine if a contractor is meeting cost projections, on schedule and producing quality assets according to specification.</li> <li>• Recommendations on increasing resources for certain aspects of the acquisition project</li> <li>• Future work / project recommendations (employment) based on contractor performance and technical expertise</li> <li>• Appropriate funding for efforts</li> </ul>	<p style="text-align: center;"><b>Industry</b></p> <ul style="list-style-type: none"> <li>• General Dynamics</li> <li>• Subcontractors</li> </ul>	<ul style="list-style-type: none"> <li>• Finished product delivered on time, within budget, according to specification</li> </ul>

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## Industry Value Delivery



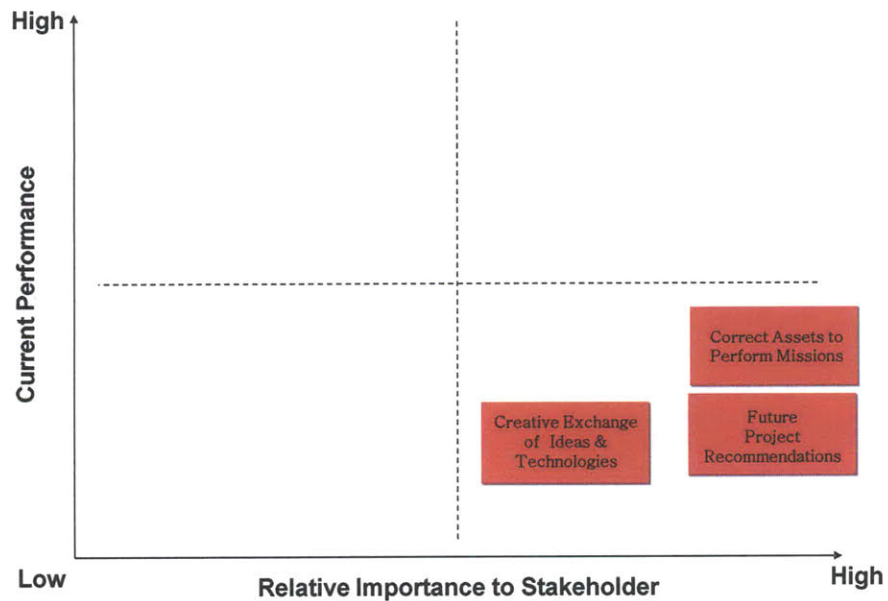
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## International Community Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>• Assurance that Coast Guard operational forces have the correct assets to execute its missions effectively and efficiently</li> <li>• International companies (i.e. subcontractors) may receive future project recommendations (employment) based on performance and technical expertise</li> <li>• Creative exchange of ideas and technologies</li> </ul>	<p style="text-align: center;"><b><u>International Community</u></b></p> <ul style="list-style-type: none"> <li>• Allies (i.e. Canadian Coast Guard)</li> <li>• Foreign boaters</li> <li>• Foreign commercial shipping companies</li> </ul>	<ul style="list-style-type: none"> <li>• International companies (subcontractors) provide finished product on time, within budget, according to specification</li> <li>• Creative exchange of ideas and technologies</li> </ul>

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## International Community Value Delivery



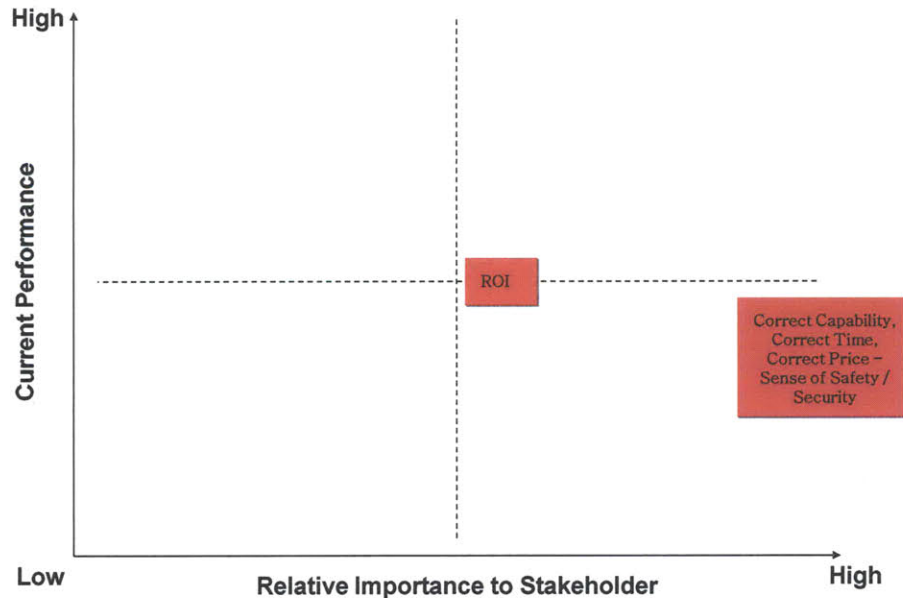
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## American Public / Taxpayer Value Exchange

Value Expected from the Enterprise	Stakeholders	Value Contributed to the Enterprise
<ul style="list-style-type: none"> <li>Assurance that the Coast Guard has the correct systems capability at the correct time for the correct price - yielding a stronger sense of safety and security</li> <li>Return On Investment (ROI)</li> </ul>	<p style="text-align: center;"><b><u>American Public / Taxpayer</u></b></p> <ul style="list-style-type: none"> <li>All U.S. citizens</li> <li>U.S. public boaters</li> <li>U.S. commercial shipping companies</li> </ul>	<ul style="list-style-type: none"> <li>Positive influence on political leaders to fund acquisition project</li> </ul>

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## American Public / Taxpayer Value Delivery



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