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**Analysis of Contract Management Processes at Naval Sea
Systems Command (NAVSEA)**

29 January 2011

by

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Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the Federal Government.



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I. INTRODUCTION

A. BACKGROUND

On June 28, 2010, Ashton B. Carter, Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]), issued a memorandum titled *Better Buying Power: Mandate for Restoring Affordability and Productivity in Defense Spending* (Carter, 2010). In this memo, Mr. Carter issued guidance along with the objectives that he intended for agencies to accomplish. The tag line for this memo was “doing more without more” (Carter, 2010). Specifically, he wanted a 2–3% net annual growth in warfighting capabilities without any increase in budget.

The objectives of the guidance were focused on delivering to the warfighter ample capability for the current budget. Mr. Carter went on to list 16 specific practices that provide incentives for greater efficiency in industry as well as adopting government practices that encourage efficiency. Tables 1 and 2 list these practices.

Table 1. Incentives for Greater Efficiency in Industry
(Carter, 2010)

| Providing Incentives for Greater Efficiency in Industry: |
|---|
| 1. Leveraging Real Competition |
| 2. Using Proper Contract Type for Development and Procurement |
| 3. Using Proper Contract Type for Services |
| 4. Aligning Policy on Profit and Fee to Circumstance |
| 5. Sharing the Benefits of Cash Flow |
| 6. Targeting Non-Value-Added Costs |
| 7. Involving Dynamic Small Business in Defense |
| 8. Rewarding Excellent Suppliers |



Table 2. Mr. Carter’s Practices that Encourage Efficiency
(Carter, 2010)

| Adopting Government Practices that Encourage Efficiency: |
|---|
| 1. Adopting “Should-Cost” and “Will-Cost” Management |
| 2. Strengthening the Acquisition Workforce |
| 3. Improving Audits |
| 4. Mandating Affordability as a Requirement |
| 5. Stabilizing Production Rates |
| 6. Eliminating Redundancy Within Warfighting Portfolios |
| 7. Establishing Senior Managers for Procurement of Services |
| 8. Protecting the Technology Base |

The stability of the U.S. defense industrial output was quite different from the prevailing forecasts as the Cold War came to an end. The forecasts were that defense spending would fall sharply, with procurement budgets forecast to fall by as much as 70%. The central theme of the 1980s and 1990s was to adjust the defense industrial structure to predicted post-Cold War budgets. The defense procurement system, which was based on World War II, operated largely in a cost-plus-markup contracting framework. Contractors were encouraged to invest in costly infrastructure and capabilities and recoup their overhead costs through charges added to U.S. Department of Defense (DoD) contracts. If procurement budgets shrank, as expected, and the number of contractors remained stable, a company would have to set aside an increasing portion of its contracts to recoup its unchanged overhead costs. Thus, funds available for new systems would inevitably diminish sharply (Hamm, 2005).

As the Cold War ended in 1991, the DoD began a series of initiatives and reforms to downsize U.S. military forces. The late 1980s and the 1990s comprised a period of unprecedented rapid and fundamental change. “The end of the Cold War and the demise of the Soviet Union contributed to the emergence of policy and strategic environments involving new players, new capabilities, and new alignments—but ... no new rules” (Haass, 1995, p. 43).

Between 1989 and 2000, the acquisition workforce underwent a series of workforce reductions that ultimately slashed the workforce in half. Since 2000, the size of the acquisition workforce has remained relatively constant, but the size and complexity



of contract actions and obligations has increased by 89% (GAO, 2006). These workforce reductions had serious implications on the acquisition capabilities of the DoD. Primarily, the reduction in workforce created staffing imbalances. DoD organizations found that they had inadequate resources and staffing to meet workload requirements and were faced with the potential loss of highly specialized knowledge due to the impending retirement of many acquisition specialists over the next several years (GAO, 2006). This contract management paradox of a decreasing workforce and an increased workload as well as the ensuing acquisition workforce knowledge gap have been the source of political debate, GAO reports, and public scrutiny. Additionally, the reduction of the acquisition workforce prompted the notion that contracting and program management are not critical functions and should not be considered as a core competency. This perception has encouraged managers to shift scarce resources to what they perceive to be more critical contract processes (including active contract administration and pre-award work in preparation for new contracts) while taking resources away from processes perceived to be relatively unimportant, such as contract closeout (Kovak, 2008).

Mr. Carter (2010) challenged the DoD to look within itself for methods and ways to “do more without more.” Even though President Barak Obama announced on August 31, 2010, an end to combat operations in Iraq, the focus of existing funding is not diminished due to the continuing conflict in Afghanistan that will require more and more of already scarce resources. This leaves organizations, particularly those whose primary mission it is to support the weapon systems acquisition function, to seek methods that change and improve internal processes.

Naval Sea Systems Command (NAVSEA) is one such organization in the DoD enterprise whose contracting management practices, or, more specifically, whose improvement of these processes, will provide incentives for greater efficiency in industry while adopting government practices that encourage efficiency.

The research presented in this report employs an assessment method that DoD organizations may apply to their contracting processes to determine their current levels of process maturity and to provide a roadmap for process improvement. In this research, we applied the Contract Management Maturity Assessment Tool (CMMAT)—the survey



element of the Contract Management Maturity Model (CMMM)—to the contract management processes at the NAVSEA.

NAVSEA, located in Washington, DC, is the Navy’s premier organization for developing, testing, fielding, and supporting naval seaborne weapons systems. NAVSEA SEA 02, the Contracting Directorate, is charged with administering billions of dollars in contracts annually for the organization. NAVSEA’s goal is to build an affordable future fleet and to sustain today’s fleet efficiently and effectively and at optimal costs; however, the decreasing acquisition workforce and the increasing complexity and size of government contracts have made this goal difficult to achieve.

B. PURPOSE

The primary purpose of this research is to analyze the contracting processes utilized by NAVSEA. The goal of this analysis is to identify the current maturity level of each of the six phases of the contract management process, provide an evaluation of the current maturity level, and assess the contributing factors that led to the current maturity level of each contracting division. By applying the Contract Management Maturity Model (CMMM) in the form of an online survey, we were able to identify the current maturity level of each of the six phases of the contract management process: Procurement Planning, Solicitation Planning, Solicitation, Source Selection, Contract Administration, and Contract Closeout. In conjunction with the online survey, we conducted a site visit to NAVSEA headquarters to obtain background information as well as peer reviewed results for this research. The results of these background discussions provided invaluable insight into the contracting operations and allowed us to anticipate the results of the online survey based on information obtained during on-site discussions. The information gathered from the site visits, the survey results, the peer reviews, and the recommendations contained in this report provide the NAVSEA leadership with an unbiased assessment of the NAVSEA contracting process. This assessment also provides a tool to assist NAVSEA in optimizing its contracting processes so that it will use its scarce resources with the utmost efficiency.



C. RESEARCH QUESTIONS

The key element to improving contract management processes is an understanding of the organization's current capabilities. Before implementing process change, an organization should embark on a series of assessment efforts aimed at identifying the baseline maturity of current contracting processes. While the desired end state is obviously the highest achievable level of process maturity, the goal of this assessment is to ascertain the extent of real and/or perceived gaps to achieving such an end state. The purpose of this thesis project is to evaluate the contract management process currently in place at NAVSEA through the following research questions:

1. Primary Research Question

- a.** At what level of contract management maturity are the contracting processes at the NAVSEA Contracting Directorate?

2. Supplementary Research Questions

- a.** How can the results of the study be used for contract management process improvement at NAVSEA?
- b.** How are peer reviews being utilized within the key process areas to improve existing contract management processes?
- c.** How can the results from our analysis of critical success factors be implemented in process improvement at NAVSEA?

D. SCOPE AND ORGANIZATION

This research focuses on contracting process maturity and the factors that affect the current maturity level within NAVSEA. The overall assessment identifies the current maturity level of NAVSEA's contracting processes and provides the organization with a suggested roadmap for process improvement. Using online survey results, we evaluated the six contract management phases. We combined the results of our site visit with the results of the CMMM assessment and used these to ascertain the current level of maturity for NAVSEA and to provide a roadmap for improvement to the NAVSEA leadership for their consideration.

This report is organized into six chapters.

In Chapter I, Introduction, we provide the background, purpose, research



questions, methodology, and benefits and limitations of the research.

In Chapter II, Literature Review, we describe the evolution of process improvement theories used in the business world, the origins of the maturity model concept, and a background and overview of the CMMM.

In Chapter III, we provide an overview of the NAVSEA headquarters, Naval Sea Systems Command organization, and the metrics used to manage contracts.

In Chapter IV, we present the data we collected using the Contract Management Maturity Assessment Tool online survey. We also present the results of the online survey in the Contract Management Maturity Model and discuss the data that led to the results.

In Chapter V, we provide a summary, conclusion, and recommendations for further research.

E. METHODOLOGY

In this report, we evaluate the current maturity level of NAVSEA's contracting processes. The six phases of the contracting process are individually evaluated: Procurement Planning, Solicitation Planning, Solicitation, Source Selection, Contract Administration, and Contract Closeout. We administered online a standardized 61-question survey, the Contract Management Maturity Assessment Tool (CMMAT), to assess the contract management process maturity of NAVSEA. We used qualitative data gathered through this survey to assess the organization's current contract maturity level so that strengths, weaknesses, and consistencies could be measured across the NAVSEA organization. We used the data gathered during the site visit to evaluate the subsidiary research questions and to determine if there was a possible relationship to the results obtained from the survey. We evaluated these combined results, and they are presented in the form of recommendations that NAVSEA can use to foster internal organizational improvement.

F. BENEFITS OF THE RESEARCH

The results from this research can be used by NAVSEA leadership to identify the current maturity level of the NAVSEA organization as a whole as well as the current maturity level of each of the six phases of the contract management process. This



information can be used as a baseline and as an indicator of the type of training that is needed based on the maturity level of any of the six phases of the contract management process. The benefits of this research can also be extended throughout the Navy enterprise, such as to the Naval Air Systems Command (NAVAIR) and to the Commander Fleet and Industrial Center (COMFISC).

G. LIMITATIONS OF THE RESEARCH

The assessment results gained from this research are not based on any quantitative or statistical analysis. This research is based on the results of an online survey, qualitative and descriptive analysis and, as such, is only as accurate as the input received from participants. Not all personnel who were invited to participate in the online survey did so. We visited only one NAVSEA location during the conduct of this research; therefore, the data gathered during the site visit reflects only NAVSEA headquarters. However, given these limitations, this research will still provide valuable benefit to NAVSEA as well as to the Navy.

H. SUMMARY

In this chapter, we provided background information on the current economic and political conditions that affect government contracting and thus the NAVSEA organization. We also described the purpose of this report, the research questions we applied, the scope and organization of the project, and the research methodology we used. The next chapter, the literature review, will discuss the evolution of process improvement, the development of maturity models, and the assessment of contract management processes that led to the development of the CMMM.



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II. LITERATURE REVIEW

A. INTRODUCTION

This chapter provides a literature review on organizational assessments and the use of capability maturity models. This literature review is presented in four sections. The first section discusses organizational assessments. The second section discusses the various industry capability maturity models. The third section discusses the development of the Contract Management Maturity Model (CMMM). The fourth section discusses the six process areas associated with contract management. The final section discusses the maturity levels associated with the CMMM.

B. ORGANIZATIONAL ASSESSMENT

When an organization begins working toward a transformation, the first step is to determine how the organization is currently operating. Sometimes it is necessary for organizations to perform organizational assessments on themselves to determine their level of health. The Canadian International Development Agency (CIDA, 2006) defined organizational assessment as “the process for obtaining systematic information about the performance of an organization and the factors that affect performance of an organization in order to diagnose areas of possible investments for change and/or to demonstrate competence” (p. 4).

A proper organizational assessment can determine the strengths and weaknesses of the organization and can provide ideas for improving the weaknesses. For organizations to be successful and gain competitive advantage, they must continuously seek process improvement. Organizations must learn and understand what causes events to happen in a process, and then use this knowledge to reduce variation, remove the activities that contribute no value to the product or service produced, and improve overall customer approval (Bauer, Duffy, & Westcott, 2006, p. 80).

One way to determine how well an organization compares to others is to use a standardized process improvement model. This standardized process improvement, like the one Wysocki (2004) developed, assists in determining how well the organization performs critical process functions. Wysocki’s (2004) Process Improvement Lifecycle



Model, as seen in Figure 1, provides a guide for organizational process improvement. An initial assessment of an organization is essential for determining where it is, where it wants to go, how it plans on getting there, and, finally, how well it did getting there (Wysocki, 2004). Many organizations use a process improvement approach that incorporates assessing process maturity, and, thus, they are using maturity models to assess process maturity as a way to improve their processes. There are a multitude of maturity models available including the Software Engineering Institute’s Capability Maturity Model Integration (SEI-CMMI), the Project Management Process Maturity (PM)² Model, the Project Management Maturity Model (PMMM), the People Capability Maturity Model (P-CMM), and the Contract Management Maturity Model (CMMM; Garrett & Rendon, 2005a). Although these process improvement models have general similarities, they are uniquely tailored to their own specific functions.

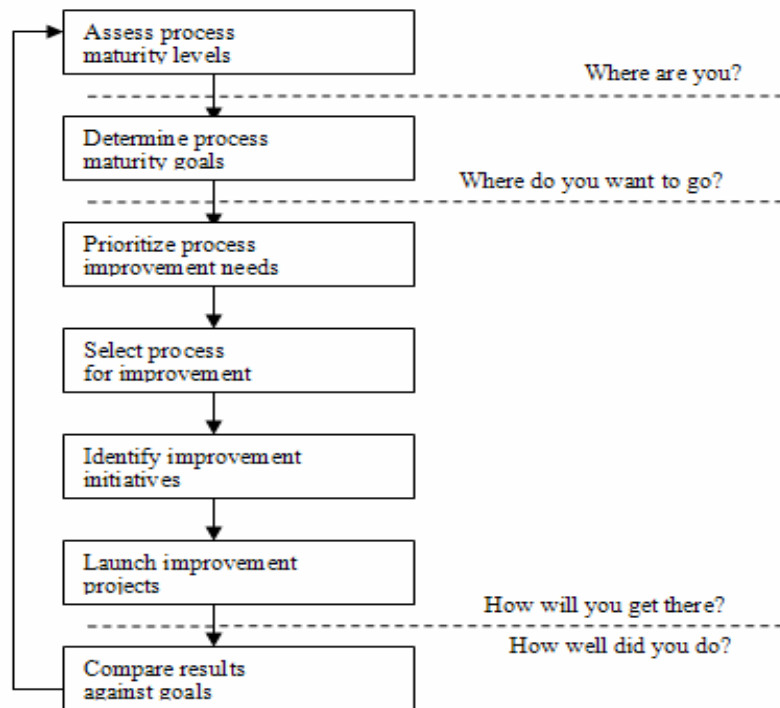


Figure 1. Process Improvement Life Cycle
(Wysocki, 2004)



In the next section, we will discuss the following maturity models, the Software Engineering Institute's Capability Maturity Model Integration (SEI-CMMI), the Project Management Process Maturity (PM)² Model, the Project Management Maturity Model (PMMM), the People Capability Maturity Model (P-CMM), and the Contract Management Maturity Model (CMMM; Garrett & Rendon, 2005a), and how they relate to their functional area.

C. MATURITY MODELS

For this research, we will define the capability maturity model (CMM) and its importance to the organization. The Software Engineering Institute (SEI, 2009) defined CMM as “a model that contains the essential elements of effective processes for one or more disciplines and describes an evolutionary improvement path from ad hoc, immature processes to disciplined, mature processes with improved quality and effectiveness” (p. 501). Ultimately, the CMM is designed to improve the processes within the organization; however, this process improvement can only be achieved through continuous self-assessment.

There are many different types of functional maturity models, and each maturity model is tailored to a specific organization. The goal for the organization is to sustain or increase its market share of the industry. In the case of government organizations, the goal is to improve their processes to ensure compliance with statutory requirements. Some of the functional maturity models include models for project management, knowledge management, software management, and people management. Most of these CMMs consist of a five-level maturity model, with each level building on the previous level of maturity (Garrett & Rendon, 2005a, p. 48). The common levels of the five-level maturity model reflect an evolutionary increase in maturity: the lowest level, ad hoc level, to the highest level in which processes are focused on continuous improvement and adoption of lessons learned and best practices (Garrett & Rendon, 2005a, p. 49). The following are some of the maturity models that will be examined in this section: the Software Engineering Institute's Capability Maturity Model Integration (SEI-CMMI), the Project Management Process Maturity (PM)² Model, the Project Management Maturity Model (PMMM), and the People Capability Maturity Model (P-CMM).



1. Software Engineering Institute's Capability Maturity Model Integration

The Capability Maturity Model Integration (CMMI) was developed by Carnegie Mellon's Software Engineering Institute (SEI). The model is based on a collection of best practices that help organizations improve their service-specific process areas. The first CMMI model was developed by a product team from industry, government, and the SEI for products and services covering the entire product life cycle (SEI, 2009, p. i). SEI has found several dimensions that an organization can focus on to improve its business. However, the three critical dimensions that organizations typically focus on are people, procedures and methods, and tools and equipment. The key idea to realize is the processes in the organization are what hold everything together, and they also allow an organization to address scalability and provide a way to incorporate knowledge of how to do things better (SEI, 2009, p. 4). Figure 2 is a graphical representation of how that process looks, including the three critical dimensions.

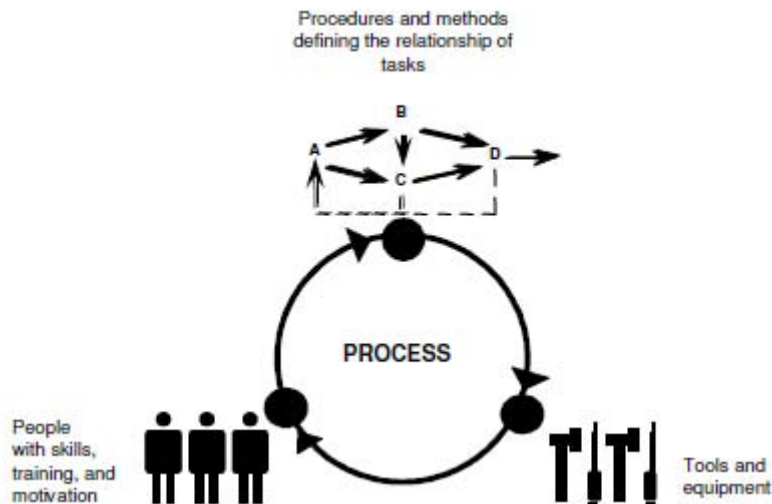


Figure 2. Three Critical Dimensions of SEI-CMMI
(SEI, 2009, p. 4)

The SEI-CMMI has five levels of maturity. The following list gives a brief description of each.

- Level 1: Initial—The processes at this level are usually ad hoc and chaotic.



- Level 2: Managed—The project’s processes define a project strategy, create a project plan, and monitor and control the project to ensure the product or service is delivered as planned.
- Level 3: Defined—Service providers use defined processes for managing projects.
- Level 4: Quantitatively Managed—Service providers establish quantitative objectives for quality and process performance, and these quantitative objectives are used as criteria in managing processes.
- Level 5: Optimizing—An organization continually improves its processes based on a quantitative understanding of normal and expected interactions intrinsic in processes. (SEI, 2009, pp. 26–29)

2. Project Management Process Maturity (PM)² Model

The Project Management Process Maturity (PM)² Model was developed by Young Hoon Kwak and C. William Ibbs (2002). The (PM)² Model compares an organization’s relative project management level with those of other organizations and provides a systematic, regimented process to achieve higher levels of project management maturity (Kwak & Ibbs, 2002, p. 150). “The (PM)² Model aims to integrate previous PM practices, processes, and maturity models to improve PM effectiveness in the organization” (Kwak & Ibbs, 2002, p. 150). The model provides an evaluation of the organization’s current project management (PM) maturity level. Figure 3 provides the five levels of maturity for the (PM)² Model and illustrates five levels of maturity ranging from Ad-hoc to Continuous Learning.



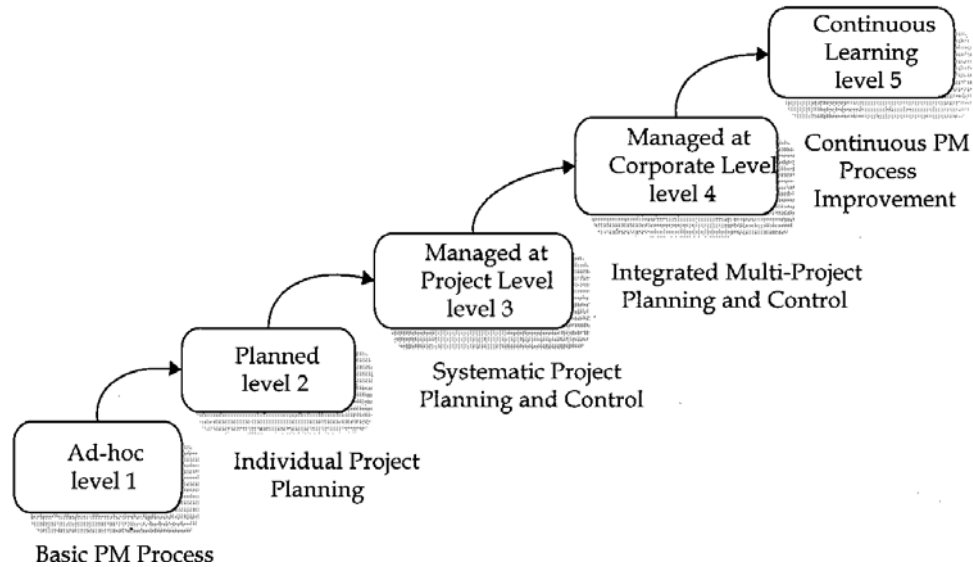


Figure 3. Project Management Process Maturity (PM)² Model
(Kwak & Ibbs, 2002, p. 152)

The (PM)² Model has five levels of maturity. The following list gives a brief description of each level.

- Level 1: Ad-hoc—Understand and establish basic project management processes.
- Level 2: Planned—Individual project planning.
- Level 3: Managed at Project Level—Systematic and structured project planning and control for individual projects.
- Level 4: Managed at Corporate Level—Planning and controlling multiple projects in a professional matter.
- Level 5: Continuous Learning—Innovative ideas to improve PM processes and practices. (Kwak & Ibbs, 2002, p. 152)

3. Project Management Maturity Model (PMMM)

The next maturity model is the Project Management Maturity Model (PMMM) created by Harold Kerzner (2001). There are online versions of this model that can diagnose the health of the organizational project management process. This online approach can identify strategic strengths and weaknesses and then create an action plan for improving PM efforts. The five levels of maturity in the PMMM are as follows:



- Level 1: Common Language—Evaluates the organization’s understanding of the fundamental concepts of PM.
- Level 2: Common Processes—Assesses how effectively the organization has achieved common processes for PM.
- Level 3: Singular Methodology—Evaluates the commitment of the organization and whether it has adopted a singular PM methodology.
- Level 4: Benchmarking—Determines to what degree the organization is using a structured approach to benchmarking.
- Level 5: Continuous Improvement—Determines if the organization has accepted continuous improvement, to include reaching an advanced state of PM maturity.

4. People Capability Maturity Model (P-CMM)

Finally, the People Capability Maturity Model (P-CMM) was also developed by Carnegie Mellon’s SEI. Curtis, Hefley, and Miller (2001, p. 3) described the P-CMM as a roadmap for implementing workforce practices that continuously improve the capacity of an organization’s workforce. This model is different from the others in that it deals with the workforce; the primary objective of the P-CMM is to improve the capacity of the workforce (Curtis et al., 2001, p. 4). Figure 4 graphically depicts the five maturity levels of P-CMM.

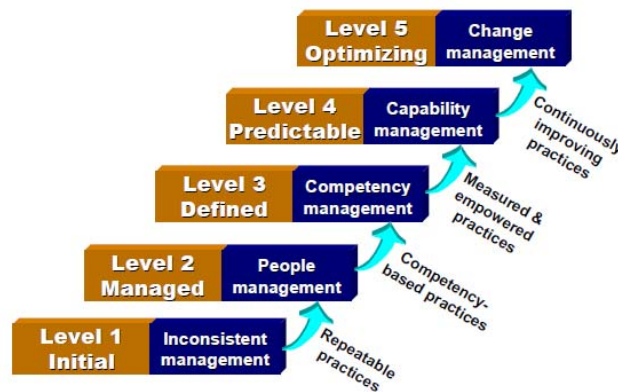


Figure 4. The Five Maturity Levels of the P-CMM
(Curtis et al., 2001, p. 18)



The five levels of maturity for the P-CMM along with a brief description of the level are as follows.

- Level 1: The Initial Level—Organizations at this level of maturity have difficulty retaining talented individuals, and they also have difficulty recruiting during talent shortages. Talent is important; however, workforce practices within the organization are ad hoc and inconsistent for the reason that the organization has not trained responsible individuals to perform the practices that are in place within the organization.
- Level 2: The Managed Level—The workforce practices implemented at this level focus on activities at the unit level. Managers need to take workforce activities as high-priority responsibilities of their job, and they must accept responsibility for the performance and development of those who perform the unit's work. The manager's attention at this level is on unit-level issues such as staffing, coordinating commitments, providing resources, managing performance, developing skills, and making compensation decisions. Building a foundation of solid workforce practices within each unit provides the bedrock for more sophisticated workforce practices at higher levels of maturity.
- Level 3: The Defined Level—At this maturity level, units identify critical skills then determine qualifications for open positions, evaluate training needs, and provide performance feedback.
- Level 4: The Predictable Level—The organization manages and takes advantage of the capability created by its framework of workforce competencies. At this level, the organization is able to manage its capability and performance quantitatively and to predict its capability for performing work because it can quantify the capability of its workforce.
- Level 5: The Optimizing Level—The entire organization is focused on continual improvement with these improvements being made to the capability of individuals and workgroups, to the performance of competency-based processes, and to workforce practices and activities. The organization uses the results of the quantitative management activities established at maturity Level 4 to steer improvements at this level. At this level, the organizations treat change management as an ordinary business process to be performed in an orderly way on a regular basis. (Curtis et al., 2001, pp. 17–27)

After describing several of the capability maturity models, it is clear that the main goal of these models is process improvement. In the next section, we will discuss the Contract Management Maturity Model that was used in our research of NAVSEA.



D. CONTRACT MANAGEMENT MATURITY MODEL (CMMM)

The research conducted for this project used the CMMM and the Contract Management Maturity Assessment Tool (CMMAT). The CMMM and the CMMAT were applied to the contracting activity at NAVSEA SEA 02. The CMMM and CMMAT assisted in determining the maturity level of the contract management processes and procedures of NAVSEA.

The following terms are used throughout this research and are defined here to improve understanding: contract, contract management, maturity, CMMM, and CMMAT. First, as Garrett (2007) wrote, a contract is “a relationship between two parties, such as a buyer and a seller, that is defined by an agreement about their respective rights and responsibilities” (p. 390). Second, contract management is “the art and science of managing a contractual agreement(s) throughout the contracting process” (Garrett, 2007, p. 390). Third, maturity “in this sense, refers to a measure of effectiveness or capability in a specific process” (Garrett & Rendon, 2005b, p. 48). Finally, CMMM is “a research-based model designed to enable a buying or selling organization to assess their contract management process capability, in comparison to benchmarked best practices,” and CMMAT is “a research-based survey tool composed of two 60-question surveys, one for buying organizations and one for selling organizations, to assess contract management capabilities” (Garrett & Rendon, 2005a, p. 270). The CMMM and the CMMAT are capable of analyzing from the perspective of both the buyer and seller side of the organization. In this research, NAVSEA was analyzed from the buyer’s perspective.

Rendon (2003) developed the Contract Management Maturity Model (CMMM) to fill a need in assessing an organization’s contract management process and in identifying process improvements.

CMMM and CMMAT have been previously applied to other organizations inside the DoD. The case study assessed in *Contract Management: Organizational Assessment Tools* (Garrett & Rendon, 2005a) was on the United States Air Force (USAF) Space and Missile Systems Center (SMC), located in Los Angeles Air Force Base, CA. Other CMMM applications include the 314th Contracting Squadron (Jackson, 2007), Naval Facilities Engineering Command (NAVFAC; Ludwig & Moore, 2006), Commander,



Fleet, and Industrial Supply Centers (COMFISCS; Bautista & Ward, 2009), United States Special Operations Command's (USSOCOM) Special Operations Acquisition and Logistics Directorate of Procurement (SOAL-K; Anglin & Good, 2009), U.S. Army Contracting Command National Capital Region Contracting Center (ACC-NCRCC or NCRCC; Jeffers, 2009), Naval Air Systems Command (NAVAIR) Patuxent River, MD (Kovack, 2008), and Air Force Material Command's (AFMC) Air Logistics Center (ALC) at Tinker AFB, OK (Nordin & Burton, 2007).

Garrett and Rendon (2005a) wrote that the CMMM creates a vision of excellence for the buying organizations, which focuses on the key areas of process improvement. CMMM provides its users with the framework or direction for improving their levels of performance (Garrett & Rendon, 2005a, p. 47). Garrett and Rendon (2005a, p. 47) also wrote that CMMM provides a visual tool to assist an organization in assessing the six key process areas that it must accomplish when buying products, services, and integrated solutions. The CMMM can be applied to organizations in either the public or private sectors. The maturity levels reflected in the model allow an organization to assess its current level of process capability for each of the six key process areas in its buying process (Garrett & Rendon, 2005a, p. 47). The CMMM consists of a six-phase contract management life cycle and five levels of contract management process maturity; these will be discussed next.

E. KEY PROCESS AREAS

Garrett (2007) developed a contract management model using a six-phase process that captures all the contract management activities beginning with the procurement planning process and concluding with the contract termination or contract closeout process (p. 221). Garrett's model provides an established baseline of the contract management process for buyers that could be expanded in developing the CMMM (p. 223).

The CMMM uses the six key process areas and the key practice activities from the buyer's perspective. The following are the six key process areas: (1) Procurement Planning, (2) Solicitation Planning, (3) Solicitation, (4) Source Selection, (5) Contract Administration, and (6) Contract Closeout. The contract management key process areas



for buying organizations are illustrated in Table 3. The CMMM focuses on the organization’s implementation of key practice activities within each of the six key process areas. The key practice activities reflect the tools, techniques, and proven best practices that leading organizations use in their contract management processes (Garrett & Rendon, 2005b, p. 52).

Table 3. CM Key Process Areas and Definitions, Buyer’s Perspective
(Garrett & Rendon, 2005a, p. 55)

| Key Process Area | Definition |
|----------------------------|---|
| 1. Procurement Planning | The process of identifying which business needs can be best met by procuring products or services outside the organization. This process involves determining whether to procure, how to procure, what to procure, and when to procure. |
| 2. Solicitation Planning | The process of preparing the documents needed to support the solicitation. This process involves documenting program requirements and identifying potential sources. |
| 3. Solicitation | The process of obtaining information (bids and proposals) from prospective sellers on how project needs can be met. |
| 4. Source Selection | The process of receiving bids or proposals and applying evaluation criteria to select a provider. |
| 5. Contract Administration | The process of ensuring that each party’s performance meets contractual requirements. |
| 6. Contract Closeout | The process of verifying that all administrative matters are concluded on a contract that is otherwise physically complete. This involves completing and settling the contract, including resolving any open items. |

1. Procurement Planning

The key practice activities of the Procurement Planning phase include determining the scope of work or description of the product to be procured, adequate resources, and effective market research for analyzing the types of products and services available in the marketplace. The Procurement Planning phase also “considers other program team areas such as funds availability, preliminary cost and schedule estimates, quality management plans, cash flow projections, work breakdown structures, risk management and manpower resources” (Garrett & Rendon, 2005b, p. 52).

2. Solicitation Planning



The key practice activities of the Solicitation Planning phase include the use of standard procurement forms and documents that will assist in the solicitation; these items include model contracts, item descriptions, terms and conditions, statements of work, work breakdown structures, and data item descriptions (Garrett & Rendon, 2005b, p. 53). The Solicitation Planning phase assists in preparing solicitations that “are structured to facilitate accurate and complete responses from prospective contractors” (Garrett & Rendon, 2005b, p. 53).

3. Solicitation

The key practice activities of the Solicitation phase include maintaining a qualified bidders list with information on prospective sellers, such as relevant experience and areas of expertise. The organization conducts market research and advertising to identify new sources of supplies and services. Also, the organization solicits inputs from the industry to be used in developing solicitations for certain types of procurements as part of the solicitation process (Garrett & Rendon, 2005b, p. 53). Another key practice activity within Solicitation is that the organization has begun the paperless process of issuing solicitations and receiving proposals (Garrett & Rendon, 2005b, p. 53).

4. Source Selection

The key practice activities of the Source Selection phase include using evaluation criteria and standards, and a weighting system to evaluate the proposals with the criteria focusing on management, technical, and price (Garrett & Rendon, 2005b, p. 53). The cost proposals are compared against the organization’s independent cost estimate during the proposal evaluation process. A team approach is used when conducting negotiations with potential contractors, and debriefings are provided to the successful and unsuccessful contractors (Garrett & Rendon, 2005b, pp. 53–54).



5. Contract Administration

The key practice activities of the Contract Administration phase include assigning contracts to individuals or teams for managing the post-award phase of the contract, which also includes those individuals or teams monitoring the contract for compliance with the terms and conditions of the contract (Garrett & Rendon, 2005b, p. 54). Finally, in the Contract Administration phase, activities have been established that indicate the organization has an established process for managing and controlling contract changes to cost, schedule, and performance requirements (Garrett & Rendon, 2005b, p. 54).

6. Contract Closeout

The key practice activities of the Contract Closeout phase include ensuring completion of work, completed documentation, financial resolution of issues, and ensuring of proper documentation of closed-out contracts. If the contract has been terminated, then the Contract Closeout phase would include the contract termination process in which there would either be a written or oral notification to terminate the contract due to cause or default. Finally, in this phase, the organization would maintain a lessons learned and best practices database for use in future projects and contracts (Garrett & Rendon, 2005b, p. 54).

Table 4, taken from Rendon (2010), provides the six key process areas, including the major activities, tools, and techniques for each process area. In this table, Rendon (2010) also included for training purposes the Federal Acquisition Regulation (FAR, 2008) reference that pertains to each individual process area. In the next section, we will discuss in detail the five maturity levels within the CMMM.



Table 4. Contract Management Phases
(Rendon, 2010)

| Contract Management Phase | Major Activities, Tools, Techniques | FAR Part |
|---------------------------------------|--|-------------------|
| Procurement Planning | Requirements Analysis | 7, 11 |
| | Acquisition Planning | 7 |
| | Stakeholder Analysis | 7 |
| | Market Research | 5, 7, 10 |
| | Outsource Analysis | 7 |
| | Business Case Analysis | 7 |
| Solicitation Planning | Determine Procurement Method | 12, 13, 14, 15 |
| | Document Competition Environment | 6 |
| | Determine Evaluation Strategy | 12, 13, 14, 15 |
| | Determine Contract Type/Incentive | 16 |
| | Determine Terms and Conditions | 12, 13, 14, 15 |
| | Develop Solicitation Documents | 12, 13, 14, 15 |
| Solicitation | Advertise Procurement Activities | 5 |
| | Conduct Conferences (pre-sol, pre-proposal) | 5, 12, 13, 14, 15 |
| | Amend solicitation documents as required | 12, 13, 14, 15 |
| Source Selection | Evaluate Proposals | 12, 13, 14, 15 |
| | Apply Evaluation Criteria | 12, 13, 14, 15 |
| | Negotiate contract terms | 12, 13, 14, 15 |
| | Select contractor | 12, 13, 14, 15 |
| | Manage Protests, Disputes and Appeals | 33 |
| | | |
| Contract Administration | Conduct conferences (post-award, pre-performance) | 42 |
| | Comply with terms and conditions | |
| | Manage GFP | 45 |
| | Monitor contractor's subcontract management (management of subcontractors) | 44 |
| | Monitor and measure contractor performance | 46 |
| | Manage contract change process | 43 |
| | Manage contractor payment process | 30, 31, 32 |
| Manage Protests, Disputes and Appeals | 33 | |
| Contract Close Out | Verify contract completion | 42 |
| | Verify contractor compliance | 42 |
| | Ensure contract completion documentation | 4 |
| | Make final payment | 42 |
| | Process contract terminations, if applicable | 49 |
| | Dispose of buyer-furnished property/equipment | 45 |
| | Process contract closeout procedures | 4 |

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F. MATURITY LEVELS

Garrett and Rendon (2005a) described the progression through the levels of the maturity models as follows:

The maturity models reviewed reflect an evolutionary increase in maturity from an ad-hoc level (Level 1), to a basic, disciplined process capability level (Level 2), to an institutionalized and repeatable processes level (Level 3), to a level characterized by processes integrated with other corporate processes resulting in synergistic corporate benefits (Level 4), and finally, to a level in which processes focused on continuous improvement and adoption of lessons learned and best practices (Level 5). (p. 49)

Garrett and Rendon's (2005a) findings led to the creation of a five-level maturity model using the levels of *ad hoc*, *basic*, *structured*, *integrated*, and *optimized* (p. 49). We further describe the five levels of CMMM from the lowest level of maturity to the highest level.

1. Level 1—Ad Hoc

Level 1—Ad hoc maturity level is the lowest of the five maturity levels. An organization at this level of maturity acknowledges that contract management processes exist, yet the organization does not have an organization-wide set of contract management processes (Garrett & Rendon, 2005b, p. 50). At the ad hoc level, the organization does not have an organization-wide set of contract management processes; however, some processes do exist and are used within the organization on a random basis. Again, at this level, informal documentation of contract management processes may exist within the organization, but this documentation is used on a random basis. Finally, managers and contract managers are not held accountable for adhering to or complying with basic contract management processes (Garrett & Rendon, 2005b, p. 50).

2. Level 2—Basic

Level 2—Basic maturity level states that “some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers” (Garrett & Rendon, 2005a, p. 53). At the basic maturity level, some formal documentation has been developed for the contract management process. However, “the organization does not consider these



contract management processes or standards institutionalized throughout the entire organization,” and there is no policy requiring the consistent use of the processes (Garrett & Rendon, 2005b, p. 50).

3. Level 3—Structured

Level 3—Structured maturity level states that “contract management processes and standards are fully established, institutionalized, and mandated throughout the entire organization. Formal documentation has been developed for these contract management processes and standards, and some processes may even be automated” (Garrett & Rendon, 2005b, p. 50). Garrett and Rendon (2005b) stated that even though “contract management processes [at this level] are mandated, the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract” (p. 53). Finally, at this level, “senior management is involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents” (Garrett & Rendon, 2005b, p. 50).

4. Level 4—Integrated

Level 4—Integrated maturity level is the first maturity level in which “the procurement project’s end-user is an integral member of the procurement team” (Garrett & Rendon, 2005a, p. 53). At the integrated maturity level, “basic contract management processes are integrated with other organizational core processes such as cost control, schedule management, performance management, and systems engineering” (Garrett & Rendon, 2005a, p. 53). Most important, the organization’s management uses “efficiency and effectiveness metrics to make procurement-related decisions,” and they understand the procurement management process role and execute the process well (Garrett & Rendon, 2005a, p. 53).

5. Level 5—Optimized

Level 5—Optimized maturity level is the highest level of contract management maturity. At the optimized maturity level, the “contract management processes are evaluated periodically using efficiency and effectiveness metrics” and contract management process improvement efforts are implemented (Garrett & Rendon, 2005a, p. 53). Finally, the organization implements lessons learned and best practice programs to



improve the contract management processes, standards, and documentation, and streamlining initiatives are implemented in the procurement process (Garrett & Rendon, 2005a, p. 53).

The five levels of maturity—ad hoc, basic, structured, integrated, and optimized—including descriptions of each maturity level, are fully described in Table 5. This table will be used in conjunction with the results of the survey to determine the maturity of NAVSEA.



Table 5. Narrative of CMMM Levels of Maturity
(Garrett & Rendon, 2005a, p. 53)

Level 1—Ad Hoc

- The organization acknowledges that contract management processes exist, that these processes are accepted and practiced throughout various industries, and the organization’s management understands the benefit and value of using contract management processes.
- Although there are not any organization-wide established basic contract management processes, some established contract management processes exist and are used within the organization, but applied only on an ad hoc and sporadic basis to various contracts.
- Informal documentation of contract management processes may exist within the organization, but are used only on an ad hoc and sporadic basis on various contracts.
- Organizational managers and contract management personnel are not held accountable for adhering to, or complying with, any contract management process or standards.

Level 2—Basic

- Some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers.
- Some formal documentation has been developed for these established contract management processes and standards.
- The organization does not consider these contract management processes or standards established or institutionalized throughout the entire organization.
- There is no organizational policy requiring the consistent use of these contract management processes and standards other than on the required contracts.

Level 3—Structured

- Contract management processes and standards are fully established, institutionalized, and mandated throughout the entire organization.
- Formal documentation has been developed for these contract management processes and standards, and some processes may even be automated.
- Since these contract management processes are mandated, the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract, such as contracting strategy, contract type, terms and conditions, dollar value, and type of requirement (product or service).
- Senior management is involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents.

Level 4—Integrated

- The procurement project’s end-user customer is an integral member of the procurement team.
- Basic contract management processes are integrated with other organizational core processes such as cost control, schedule management, performance management, and systems engineering.
- Management uses efficiency and effectiveness metrics to make procurement-related decisions.
- Management understands its role in the procurement management process and executes the process well.

Level 5—Optimized

- Contract management processes are evaluated periodically using efficiency and effectiveness metrics.
- Continuous process improvement efforts are implemented to improve the contract management process.
- Lessons learned and best practice programs are implemented to improve the contract management processes, standards, and documentation.
- Procurement process streamlining initiatives are implemented as part of the process improvement program.



G. SUMMARY

In this chapter, we discussed the value of conducting organizational assessments in order to understand an organization's process strengths and weaknesses. We also discussed several different capability maturity models and maturity levels and included a brief description with each model. Finally, we discussed the CMMM and CMMAT and how these tools can effectively be used to assess an organization's strengths and weaknesses in the contract management process. This included the key process areas and the maturity levels, along with brief descriptions of each, associated with the CMMM. The next chapter will discuss NAVSEA and its procurement organization and why it was chosen for this research.



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III. NAVSEA

A. INTRODUCTION

In this chapter, we provide an overview of the Naval Sea Systems Command (NAVSEA) organization. We also provide a breakdown of the contracting organization within NAVSEA and describe the current metrics employed by NAVSEA for self-evaluation. Finally, the methodology used to select participants in the Contract Management Maturity Model Assessment Tool (CMMAT) survey is discussed.

1. NAVSEA Organization

The mission of NAVSEA is to develop, deliver, and maintain ships and systems on time and on cost for the United States Navy. The following is an overview of the NAVSEA organization:

The Naval Systems Command is comprised of command staff, headquarters directorates, affiliated Program Executive Offices (PEO) and numerous field activities. Together, they engineer, build, buy and maintain ships, submarines and combat systems that meet the Fleet's current and future operational requirements.

NAVSEA is the largest of the Navy's five system commands. With a fiscal year 2008 budget of \$24.8 billion, NAVSEA accounts for nearly one quarter of the Navy's entire budget.

With a force of 53,000 civilian, military and contract support personnel, NAVSEA engineers, builds, buys, and maintains the Navy's ships and submarines and their combat systems.

To accomplish this, NAVSEA manages 150 acquisition programs and manages foreign military sales cases that include billions of dollars in annual military sales to partner nations.

Today, the NAVSEA organization has 33 activities in 16 states. NAVSEA strives to be an efficient provider of defense resources for the nation, and it plays an important role in the Navy Enterprise. As a Provider Command, NAVSEA has the responsibility of directing resource sponsors into the proper mix of manpower and resources to properly equip the Fleet.

NAVSEA has the further responsibility of establishing and enforcing technical authority in combat system design and operation. These technical standards use the organization's technical expertise to ensure systems are engineered effectively, and that they operate safely and reliably. (Naval Sea Systems Command, 2010)



Figure 5 depicts how NAVSEA fits into the other naval activities.

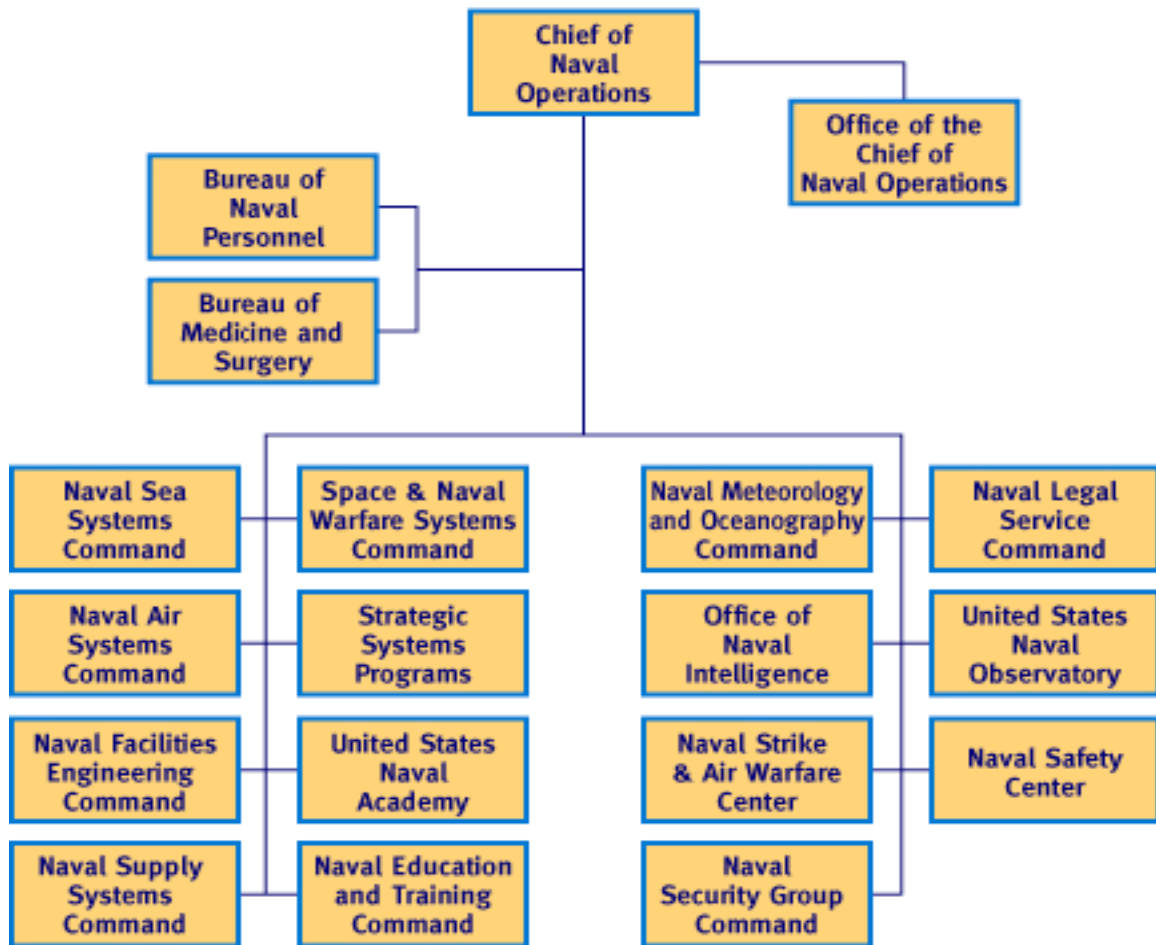


Figure 5. Chief of Naval Operations (CNO) Organizational Chart 2010
(NAVSEA, 2010)



The NAVSEA organizational chart is illustrated in Figure 6.

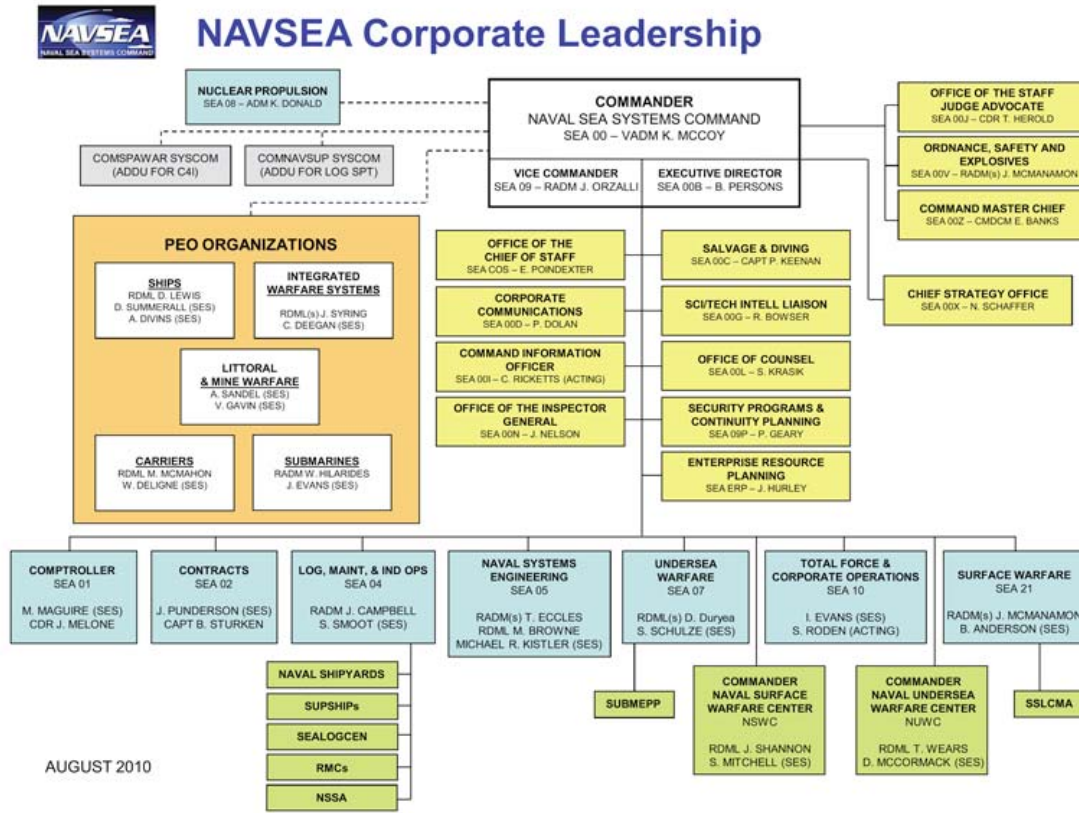


Figure 6. NAVSEA Corporate Leadership 2010
(NAVSEA, 2010)

NAVSEA consists of four shipyards, eight warfare centers, and four major shipbuilding locations around the United States. NAVSEA headquarters is located in the Washington Navy Yard, District of Columbia. The shipyards are located in Bremerton, WA; Portsmouth, VA; Kittery, ME; and Pearl Harbor, HA. The Warfare Centers are located in Dahlgren, VA; Keyport, WA; Carderock, MD; Port Hueneme, CA; Panama City, FL; Indian Head, MD; Crane, IN; and Newport, RI. The major shipbuilding centers are located in Bath, ME; Newport News, VA; Groton, CT; and Pascagoula, MS.

NAVSEA SEA 02 employs 1,158 people, both military and civilian, across the organization. In fiscal year 2009, 54,412 contracting actions were completed that obligated a total of \$29 billion throughout the organization. NAVSEA headquarters completed 5,947 of those contracting actions that obligated a total of \$21 billion in fiscal



- Modernization and conversion;
- Technical, industrial, and logistic support; and
- Other professional services, such as engineering, finance and program management.

The NAVSEA SEA 02 organizational chart is illustrated in Figure 8.

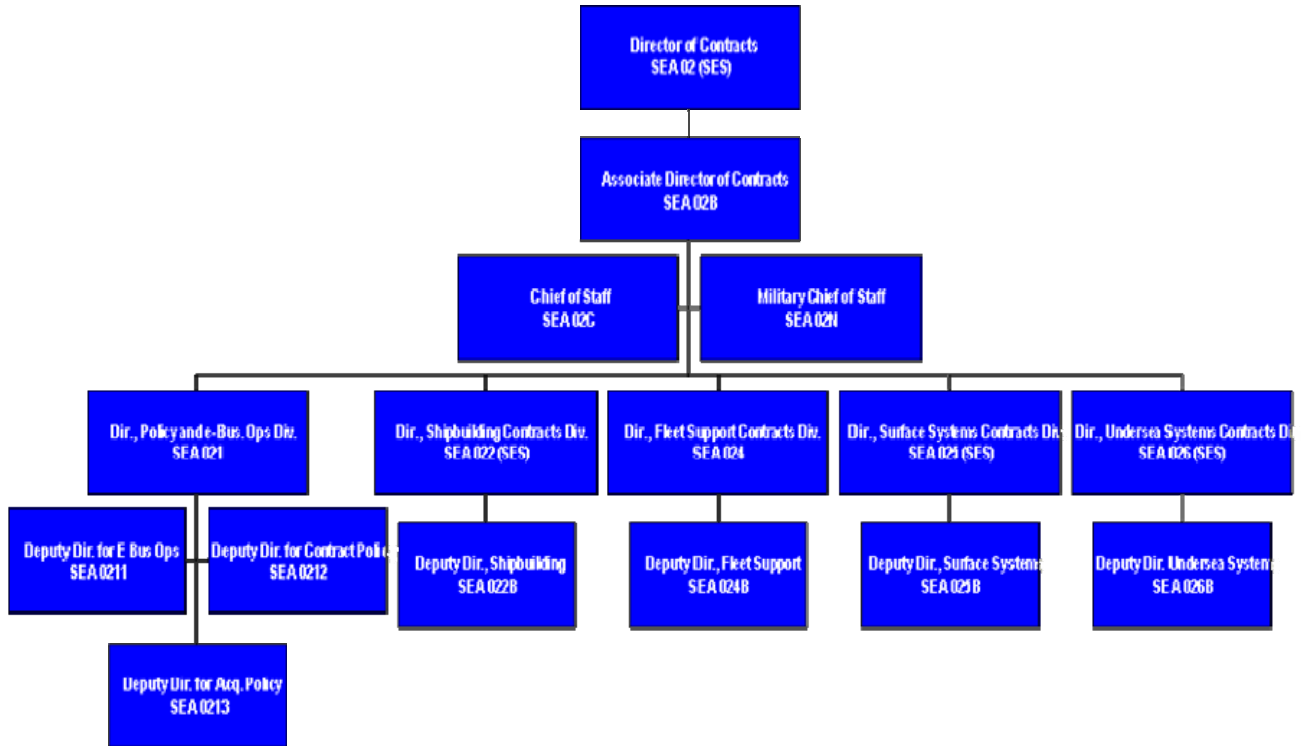


Figure 8. Contracts SEA 02 Organizational Chart 2010
(Shaver, 2010)

SEA 022 is the Shipbuilding division. The type of contracts that they typically deal with are cost-plus fixed fee (CPFF), cost-plus award fee (CPAF), and cost-plus incentive fee (CPIF).

SEA 024 is the Ship Repair division. The type of contracts that they typically deal with are CPFF and indefinite delivery, indefinite quantity (IDIQ) multi-ship/multi-option (MSMO).

SEA 025 is the Surface Systems division. This division procures everything from hardware using firm-fixed price (FFP) and fixed-plus incentive firm (FPIF) contracts to engineering services using CPFF, CPAF, and CPIF contracts.



SEA 026 is the Submarine Systems division. This division procures everything from hardware using firm-fixed price (FFP) and fixed-plus incentive firm (FPIF) contracts to engineering services using CPFF, CPAF, and CPIF contracts.

3. NAVSEA Procurement Process and Metrics

NAVSEA SEA 02 uses an electronic milestone procurement system, which is a web-based procurement scheduling and tracking tool. The Program Office identifies a requirement; the contract specialist develops a plan and forwards the schedule to the procuring contracting officer (PCO); and then the PCO reviews it and forwards it to the branch head for approval. The branch head then forwards it to the cognizant program manager or deputy program manager for approval. Once the plan is approved, SEA 02 inputs actual dates and cause of schedule variance information, if required. The milestone system has a Dashboard feature that provides management insight and directs management's attention to troubled procurements. The system requires SEA 02 to input causes of delay when process nodes are missed. This feature facilitates acquisition team efforts to identify and eliminate systemic sources of delay on future procurements. If a date is missed, then a variance report must be submitted detailing what happened and why the date was missed. The Program Office and the cognizant SEA 02 department meet quarterly to review the status of in-process procurements (Diamantopoulos, 2010).

Criticality Ratings

When establishing milestones, the acquisition team shall establish a detailed milestone plan of all work to which the customer assigns a criticality rating of three or higher. The criteria for assigning criticality ratings are as follows:

CR1 (Critical): Items if not accomplished within an acceptable window of time will have a major impact on an acquisition milestone, production schedule, or material deployment.

CR2 (High): Items if not accomplished within an acceptable window of time will significantly increase the risk of a major impact on an acquisition milestone, production schedule, or material deployment.

CR3 (Medium): Items if not accomplished within an acceptable window of time will significantly increase the risk of a difficult, but manageable impact on an acquisition milestone, production schedule, or material deployment.



CR4 (Low): Routine items to be completed according to standard turnaround times or as negotiated with the customer.

In addition to these critical ratings or milestones, NAVSEA also conducts peer reviews on its contracting actions at different phases of the contracting life cycle. These peer reviews are used to ensure compliance with Defense Procurement Acquisition Policy (DPAP). More discussion on NAVSEA's peer reviews and analysis of peer reviewed results will be discussed in Chapter IV.

4. Why Select NAVSEA for this Research?

NAVSEA was selected for this research project because NAVSEA SEA 02 is considered in the Navy as the largest procurement organization in the Department of Defense. NAVSEA SEA 02 not only procures simple acquisitions but also s procures extremely complex systems. NAVSEA represented a great opportunity to access an organization that operates at the highest complexity of contract acquisitions and that evaluates the maturity of the contracting processes. We compare these results against the current metrics and processes to find recommendations for process improvements.

5. Contract Management Maturity Assessment Tool (CMMAT) Participant Selection

Participants in the CMMAT survey were selected on the basis of Defense Acquisition Workforce Improvement Act (DAWIA) certification level. The prerequisite for contracting officers to participate in this survey was that they be at least Level II DAWIA certified. This applied to all NAVSEA locations at which the survey was administered.

6. Summary

This chapter discussed the NAVSEA organization and included where NAVSEA fits among the other System Commands, NAVSEA's corporate leadership, NAVSEA's contracting competency for fiscal year 2009, the NAVSEA SEA 02 organization, the NAVSEA procurement process and metrics, the reasons why NAVSEA was selected for this research, and CMMAT participant selection. The next chapter will discuss the findings, results, and recommendations of this research.



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IV. ASSESSMENT RESULTS AND PROCESS IMPROVEMENT RECOMMENDATIONS

A. INTRODUCTION

The previous chapter discussed the NAVSEA organization and the types of supplies and services it produces as well as its contracting process. This chapter will discuss the results of the CMMM assessment. In this chapter, we present the results of the CMMAT survey from the four divisions within the NAVSEA headquarters organization, a description of findings, recommendations on contract management process improvements, and a discussion of the relationship between the peer reviews and the results of the CMMAT. We conclude the chapter with critical factors that NAVSEA has identified as important in contract management. The following sections will present the results of the CMMAT survey: NAVSEA division's SEA 022, SEA 024, SEA 025, and SEA 026.

B. SELECTION OF STUDY PARTICIPANTS

The CMMM is specifically designed to focus on an organization's key contract management process areas and activities to provide baseline assessment of process maturity (Garrett & Rendon, 2005b). A key tenet of CMMM is that it is a qualitative study utilizing a purposeful sampling strategy. Due to the absence of quantitative data, statistical analysis was not used in analyzing the results. This research relied heavily on the standardized selective qualitative information from the survey participants. The selection of targeted study participants minimized the effects of potential bias and optimized the quality of collected data. The participants had to be fully qualified contracting officers. They had to have attained a DAWIA Level II or higher in contracting. Adherence to these strict requirements minimized bias in the responses and established the required professional competence from the respondents.

The importance of selecting respondents with DAWIA Level II or higher certification established the level of experience and served as a basis in the assumption that this group of contracting personnel was the most knowledgeable of the organization's contract management processes. The study did not intend to measure the



respondent's individual knowledge of contract management principles; rather, it assumed that the respondents, through the DAWIA certification process, understood the organization's contract management processes and gained sufficient training, experience, and education to complete the CMMAT survey.

C. ADMINISTRATION OF THE CMMAT ASSESSMENT

This study used the CMMAT survey for buyers at the NAVSEA headquarters in Washington, DC. The six key process areas are Procurement Planning, Solicitation Planning, Solicitation, Source Selection, Contract Administration, and Contract Closeout. The CMMAT uses a 5-point Likert scale to score the responses from 0–5, with the corresponding scores being *don't know* (0), *never* (1), *seldom* (2), *sometimes* (3), *usually* (4), and *always* (5). The mean score for each question in each of the six key process areas was summed to determine the total process score in that key process area. The maturity of the specific key process area was based on the accumulated overall score.

The CMMAT was administered using an online survey, which was determined to be more efficient than administering manual surveys. The survey was deployed to NAVSEA on August 25, 2010, and closed on October 8, 2010, which was the official completion date for the survey as well.

The survey was voluntary and was disseminated to all NAVSEA headquarters divisions that perform contracting actions and activities. NAVSEA in Washington, DC, has four divisions that actively perform contracting actions, and the number of respondents varied across the four divisions based on the number of eligible personnel who met the two requirements: DAWIA Level II or III and Contracting Warrant. The total number of personnel at NAVSEA headquarters eligible to take the survey was 112 and the number of respondents was 62, making a response rate of 55%. The number of respondents by divisions is as follows:

- SEA 022 (Shipbuilding): 16.
- SEA 024 (Fleet Support): 9.
- SEA 025 (Surface Systems): 21.
- SEA 026 (Undersea Systems): 16.



The next section will analyze the results of the CMMAT assessment of the NAVSEA online survey.

D. RESULTS OF THE CMMAT

This section will provide the analysis of the results of the CMMAT for each of the four divisions within NAVSEA. This section will also provide an analysis of the contract management process maturity of NAVSEA division SEA 022, SEA 024, SEA 025, and SEA 026.

1. SEA 022 (Shipbuilding)

SEA 022 (Shipbuilding) completed 16 CMMAT surveys. The results from the SEA 022 division are provided in Table 6. Within Table 6 are the number of individuals who were at the DAWIA contracting certification Level II or III, the work experience of the individuals who participated in the survey, and the maturity score and maturity level of the CM key process areas.

Table 6. SEA 022 CMMAT Survey Response Results

| SEA 022 | | | |
|---------------------------------------|---|------------------------------|----------------|
| DAWIA | | WORK EXPERIENCE | |
| Level II | 8 | Entry (3 years or less) | 7 |
| Level III | 8 | Junior (4 to 8 years) | 3 |
| | | Intermediate (9 to 13 years) | 0 |
| | | Mid-level (14 to 18 years) | 0 |
| | | Senior (19 years & above) | 6 |
| CONTRACT MANAGEMENT KEY PROCESS AREAS | | | |
| Key Process Area | | Maturity Score | Maturity Level |
| Procurement Planning | | 35.69 | Basic |
| Solicitation Planning | | 35.71 | Basic |
| Solicitation | | 33.57 | Basic |
| Source Selection | | 38.00 | Basic |
| Contract Administration | | 33.92 | Basic |
| Contract Closeout | | 15.92 | Ad hoc |

Based on the survey results of the NAVSEA CMMAT online survey, SEA 022 (Shipbuilding) was rated as basic maturity in the areas of Procurement Planning, Solicitation Planning, Solicitation, Source Selection, and Contract Administration. A basic maturity level indicates that NAVSEA has “some basic contract management



processes and standard operating procedures have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers” (Garrett & Rendon, 2005a, p. 53). At the basic maturity level, some formal documentation has been developed for the contract management process. However, “the organization does not consider these contract management processes or standards institutionalized throughout the entire organization,” and there is no policy requiring the consistent use of the processes (Garrett & Rendon, 2005b, p. 50).

The Contract Closeout phase for SEA 022 (Shipbuilding) was assessed at the ad hoc maturity level. Ad hoc is the lowest maturity level and “the organization at this initial level of maturity acknowledges that contract management processes exist; that the processes are accepted and practiced throughout various industries” (Garrett & Rendon, 2005b, p. 50). The organization does not have an organization-wide set of contract management processes. However, the processes do exist and are only used within the organization on a random basis. Again, at this level, informal documentation of contract management processes may exist within the organization, but this documentation is used on a random basis. Finally, managers and contract managers are not held accountable for adhering to or complying with basic contract management processes (Garrett & Rendon, 2005b, p. 50). SEA 022 CMMM assessment results are illustrated in Figure 9.



| CONTRACT MANAGEMENT MATURITY MODEL [©] | | | | | | |
|---|----------------------|-----------------------|--------------|------------------|----------------|-------------------|
| MATURITY LEVEL | PROCUREMENT PLANNING | SOLICITATION PLANNING | SOLICITATION | SOURCE SELECTION | CONTRACT ADMIN | CONTRACT CLOSEOUT |
| 5 OPTIMIZED | | | | | | |
| 4 INTEGRATED | | | | | | |
| 3 STRUCTURED | | | | | | |
| 2 BASIC | 22 | 22 | 22 | 22 | 22 | |
| 1 AD HOC | | | | | | 22 |
| SEA 022 <i>n</i> = 16 | | | | | | |

Figure 9. SEA 022 CMMM Assessment Results

2. SEA 024 (Fleet Support)

SEA 024 (Fleet Support) completed nine CMMAT surveys. The results from the SEA 024 division are provided in Table 7. Within Table 7 are the number of individuals who were at DAWIA contracting certification Level II or III, the work experience of the individuals who participated in the survey, and the maturity score and maturity level of the CM key process areas.



Table 7. SEA 024 CMMAT Survey Response Results

| SEA 024 | | | |
|---------------------------------------|---|------------------------------|----------------|
| DAWIA | | WORK EXPERIENCE | |
| Level II | 2 | Entry (3 years or less) | 1 |
| Level III | 7 | Junior (4 to 8 years) | 0 |
| | | Intermediate (9 to 13 years) | 1 |
| | | Mid-level (14 to 18 years) | 3 |
| | | Senior (19 years & above) | 4 |
| CONTRACT MANAGEMENT KEY PROCESS AREAS | | | |
| Key Process Area | | Maturity Score | Maturity Level |
| Procurement Planning | | 42.67 | Integrated |
| Solicitation Planning | | 44.44 | Integrated |
| Solicitation | | 41.78 | Structured |
| Source Selection | | 49.56 | Integrated |
| Contract Administration | | 39.22 | Basic |
| Contract Closeout | | 24.22 | Ad hoc |

Based on the survey results of the NAVSEA CMMAT online survey, SEA 024 (Fleet Support) was rated as integrated maturity in the areas of Procurement Planning, Solicitation Planning, and Source Selection. Integrated maturity is the first maturity level in which “the procurement project’s end-user is an integral member of the procurement team” (Garrett & Rendon, 2005a, p. 53). At the integrated maturity level, “basic contract management processes are integrated with other organizational core processes such as cost control, schedule management, performance management, and systems engineering” (Garrett & Rendon, 2005a, p. 53). Most important, the organization’s management uses “efficiency and effectiveness metrics to make procurement-related decisions,” and they understand the procurement management process role and execute the process well (Garrett & Rendon, 2005a, p. 53).

The Solicitation phase for SEA 024 (Fleet Support) was assessed as structured maturity level, which states, “contract management processes and standards are fully established, institutionalized, and mandated throughout the entire organization. Formal documentation has been developed for these contract management processes and standards, and some processes may even be automated” (Garrett & Rendon, 2005b, p.



50). Also, at the structured maturity level, the “contract management processes are mandated, the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract” (Garrett & Rendon, 2005a, p. 53). Finally, at this level, “senior management is involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents” (Garrett & Rendon, 2005b, p. 50).

SEA 024 (Fleet Support) was assessed as basic maturity level in the area of Contract Administration. Basic maturity level indicates that NAVSEA has “some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers” (Garrett & Rendon, 2005a, p. 53). At the basic maturity level, some formal documentation has been developed for the contract management process. However, “the organization does not consider these contract management processes or standards institutionalized throughout the entire organization,” and there is no policy requiring the consistent use of the processes (Garrett & Rendon, 2005b, p. 50).

Finally, Contract Closeout for SEA 024 (Fleet Support) was assessed as ad hoc maturity level. Ad hoc is the lowest maturity level, and “the organization at this initial level of maturity acknowledges that contract management processes exist; that the processes are accepted and practiced throughout various industries” (Garrett & Rendon, 2005b, p. 50). The organization does not have an organization-wide set of contract management processes; however, the processes do exist and are used within the organization on a random basis. Again, at this level, informal documentation of contract management processes may exist within the organization, but this documentation is used on a random basis. Finally, managers and contract managers are not held accountable for adhering to or complying with basic contract management processes (Garrett & Rendon, 2005b, p. 50). SEA 024 CMMM assessment results are illustrated in Figure 10.



| CONTRACT MANAGEMENT MATURITY MODEL [©] | | | | | | |
|---|----------------------|-----------------------|--------------|------------------|----------------|-------------------|
| MATURITY LEVEL | PROCUREMENT PLANNING | SOLICITATION PLANNING | SOLICITATION | SOURCE SELECTION | CONTRACT ADMIN | CONTRACT CLOSEOUT |
| 5 OPTIMIZED | | | | | | |
| 4 INTEGRATED | 24 | 24 | | 24 | | |
| 3 STRUCTURED | | | 24 | | | |
| 2 BASIC | | | | | 24 | |
| 1 AD HOC | | | | | | 24 |
| SEA 024 n = 9 | | | | | | |

Figure 10. SEA 024 CMMM Assessment Results

3. SEA 025 (Surface Systems)

SEA 025 (Surface Systems) completed 21 CMMAT surveys. The results from the SEA 025 division are provided in Table 8. Within Table 8 are the number of individuals who were at DAWIA contracting certification Level II or III, the work experience of the individuals who participated in the survey, and the maturity score and maturity level of the CM key process areas.



Table 8. SEA 025 CMMAT Survey Response Results

| SEA 025 | | | |
|---------------------------------------|----|------------------------------|----------------|
| DAWIA | | WORK EXPERIENCE | |
| Level II | 6 | Entry (3 years or less) | 4 |
| Level III | 15 | Junior (4 to 8 years) | 6 |
| | | Intermediate (9 to 13 years) | 2 |
| | | Mid-level (14 to 18 years) | 0 |
| | | Senior (19 years & above) | 9 |
| CONTRACT MANAGEMENT KEY PROCESS AREAS | | | |
| Key Process Area | | Maturity Score | Maturity Level |
| Procurement Planning | | 38.24 | Structured |
| Solicitation Planning | | 39.35 | Structured |
| Solicitation | | 34.11 | Basic |
| Source Selection | | 44.32 | Structured |
| Contract Administration | | 34.11 | Basic |
| Contract Closeout | | 24.05 | Ad hoc |

Based on the survey results of the NAVSEA CMMAT online survey, SEA 025 (Surface Systems) was rated as structured maturity level in the areas of Procurement Planning, Solicitation Planning, and Source Selection. Structured maturity level states that “contract management processes and standards are fully established, institutionalized, and mandated throughout the entire organization. Formal documentation has been developed for these contract management processes and standards, and some processes may even be automated” (Garrett & Rendon, 2005b, p. 50). Also, with structured maturity level, the “contract management processes are mandated, the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract” (Garrett & Rendon, 2005a, p. 53). Finally, at this level, “senior management is involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents” (Garrett & Rendon, 2005b, p. 50).

SEA 025 (Surface Systems) was assessed as basic maturity level in the areas of Solicitation and Contract Administration. Basic maturity level indicates that NAVSEA has “some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-



visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers” (Garrett & Rendon, 2005a, p. 53). At the basic maturity level, some formal documentation has been developed for the contract management process.

However, “the organization does not consider these contract management processes or standards institutionalized throughout the entire organization,” and there is no policy requiring the consistent use of the processes (Garrett & Rendon, 2005b, p. 50).

Finally, Contract Closeout for SEA 025 (Surface Systems) was assessed at ad hoc maturity level. Ad hoc is the lowest maturity level and “the organization at this initial level of maturity acknowledges that contract management processes exist; that the processes are accepted and practiced throughout various industries” (Garrett & Rendon, 2005b, p. 50). The organization does not have an organization-wide set of contract management processes; however, the processes do exist and are used within the organization on a random basis. Again, at this level, informal documentation of contract management processes may exist within the organization, but this documentation is used on a random basis. Finally, managers and contract managers are not held accountable for adhering to or complying with basic contract management processes (Garrett & Rendon, 2005b, p. 50). SEA 025 CMMM assessment results are illustrated in Figure 11.



| CONTRACT MANAGEMENT MATURITY MODEL [©] | | | | | | |
|---|----------------------|-----------------------|--------------|------------------|----------------|-------------------|
| MATURITY LEVEL | PROCUREMENT PLANNING | SOLICITATION PLANNING | SOLICITATION | SOURCE SELECTION | CONTRACT ADMIN | CONTRACT CLOSEOUT |
| 5 OPTIMIZED | | | | | | |
| 4 INTEGRATED | | | | | | |
| 3 STRUCTURED | 25 | 25 | | 25 | | |
| 2 BASIC | | | 25 | | 25 | |
| 1 AD HOC | | | | | | 25 |
| SEA 025 <i>n</i> = 21 | | | | | | |

Figure 11. SEA 025 CMMM Assessment Results

4. SEA 026 (Undersea Systems)

SEA 026 (Undersea Systems) completed 16 CMMAT surveys. The results from the SEA 026 division are provided in Table 9. Within Table 9 are the number of individuals who were at DAWIA contracting certification Level II or III, the work experience of the individuals who participated in the survey, and the maturity score and maturity level of the CM key process areas.



Table 9. SEA 026 CMMAT Survey Response Results

| SEA 026 | | | | |
|---------------------------------------|---|------------------------------|-------------------------|---|
| DAWIA | | | WORK EXPERIENCE | |
| Level II | 8 | | Entry (3 years or less) | 8 |
| Level III | 8 | | Junior (4 to 8 years) | 2 |
| | | Intermediate (9 to 13 years) | 3 | |
| | | Mid-level (14 to 18 years) | 1 | |
| | | Senior (19 years & above) | 2 | |
| CONTRACT MANAGEMENT KEY PROCESS AREAS | | | | |
| Key Process Area | | Maturity Score | Maturity Level | |
| Procurement Planning | | 36.19 | Basic | |
| Solicitation Planning | | 36.93 | Structured | |
| Solicitation | | 34.43 | Basic | |
| Source Selection | | 36.71 | Basic | |
| Contract Administration | | 38.14 | Basic | |
| Contract Closeout | | 21.57 | Ad hoc | |

Based on the survey results of the NAVSEA CMMAT online survey, SEA 026 (Undersea Systems) was rated as structured maturity level in the area of Solicitation Planning. Structured maturity level states “contract management processes and standards are fully established, institutionalized, and mandated throughout the entire organization. Formal documentation has been developed for these contract management processes and standards, and some processes may even be automated” (Garrett & Rendon, 2005b, p. 50). Also, with structured maturity level the “contract management processes are mandated, the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract” (Garrett & Rendon, 2005a, p. 53). Finally, at this level, “senior management is involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents” (Garrett & Rendon, 2005b, p. 50).

SEA 026 (Undersea Systems) was assessed at basic maturity level in the areas of Procurement Planning, Solicitation, Source Selection, and Contract Administration. Basic maturity level indicates that NAVSEA has “some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting



certain dollar thresholds, or contracts with certain customers” (Garrett & Rendon, 2005a, p. 53). At the basic maturity level, some formal documentation has been developed for the contract management process. However, “the organization does not consider these contract management processes or standards institutionalized throughout the entire organization,” and there is no policy requiring the consistent use of the processes (Garrett & Rendon, 2005b, p. 50).

Finally, Contract Closeout for SEA 026 (Undersea Systems) was assessed at ad hoc maturity level. Ad hoc is the lowest maturity level, and “the organization at this initial level of maturity acknowledges that contract management processes exist; that the processes are accepted and practiced throughout various industries” (Garrett & Rendon, 2005b, p. 50). The organization does not have an organization-wide set of contract management processes; however, the processes do exist and are used within the organization on a random basis. Again, at this level, informal documentation of contract management processes may exist within the organization, but this documentation is used on a random basis. Finally, managers and contract managers are not held accountable for adhering to or complying with basic contract management processes (Garrett & Rendon, 2005b, p. 50). SEA 026 CMMM assessment results are illustrated in Figure 12.



| CONTRACT MANAGEMENT MATURITY MODEL [©] | | | | | | |
|---|----------------------|-----------------------|--------------|------------------|----------------|-------------------|
| MATURITY LEVEL | PROCUREMENT PLANNING | SOLICITATION PLANNING | SOLICITATION | SOURCE SELECTION | CONTRACT ADMIN | CONTRACT CLOSEOUT |
| 5 OPTIMIZED | | | | | | |
| 4 INTEGRATED | | | | | | |
| 3 STRUCTURED | | 26 | | | | |
| 2 BASIC | 26 | | 26 | 26 | 26 | |
| 1 AD HOC | | | | | | 26 |
| SEA 026 n = 16 | | | | | | |

Figure 12. SEA 026 CMMM Assessment Results

E. RECOMMENDATIONS FOR CONTRACT MANAGEMENT PROCESS IMPROVEMENT

This section focuses on the individual key contract management process areas for the NAVSEA contracting enterprise and provides recommendations for process improvement to the next level of maturity. It also identifies whether the results of the peer reviews had any connection to the CMMM results. The NAVSEA contracting enterprise CMMM assessment results are illustrated in Figure 13.



| CONTRACT MANAGEMENT MATURITY MODEL [©] | | | | | | |
|---|----------------------|-----------------------|----------------|------------------|----------------------|----------------------|
| MATURITY LEVEL | PROCUREMENT PLANNING | SOLICITATION PLANNING | SOLICITATION | SOURCE SELECTION | CONTRACT ADMIN | CONTRACT CLOSEOUT |
| 5 OPTIMIZED | | | | | | |
| 4 INTEGRATED | 24 | 24 | | 24 | | |
| 3 STRUCTURED | 25 | 25 26 | 24 | | 25 | |
| 2 BASIC | 22 26 | 22 | 22 25 26 | 22 26 | 22 25 24 26 | |
| 1 AD HOC | | | | | | 22 25 24 26 |
| NAVSEA (2010) <i>n</i> = 62 | | | | | | |

Figure 13. NAVSEA CMMM Assessment Results

1. Procurement Planning

The enterprise-wide maturity level for Procurement Planning was assessed at the basic maturity level based on the lowest level of maturity indicated by the survey assessment results for its divisions. A maturity rating of basic indicates that some basic procurement planning processes and standards have been established and that some formal documentation has been developed for these procurement planning processes and standards. More important, these procurement planning processes are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the consistent use of these procurement planning processes and standards other than on the required contracts (Garrett & Rendon, 2005b). In order to progress to the next contract management maturity level of structured, procurement planning processes and standards must be fully



established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these procurement planning processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and procurement planning documents (Garrett & Rendon, 2005b). These process improvement initiatives should include procurement planning activities such as market research (FAR Part 5 and 10), acquisition planning (FAR Part 7), stakeholder analysis, and requirements analysis (FAR Part 11; Garrett & Rendon, 2005b).

To accomplish process improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024 and SEA 025, as reflected in Figure 13. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. A database of best practices and lessons learned should be instituted to help NAVSEA achieve the definitive Procurement Planning maturity level of optimized. Resources should be committed to such things as bag-lunch training sessions that emphasize procurement planning topics and DAU refresher training. The training should be developed to cover subjects such as funds availability, preliminary cost, schedule estimates, quality management plans, cash flow projections, work breakdown structures, program management and risk management, manpower resources, selecting the appropriate contract type, conducting assessments of market conditions, risk management, and developing standard and unique contract terms and conditions (Garrett & Rendon, 2005b).

2. Solicitation Planning

The enterprise-wide maturity level for Solicitation Planning was assessed at the basic maturity level based on the lowest level of maturity indicated by the survey assessment results for its divisions. A maturity rating of basic indicates that some basic solicitation planning processes and standards have been established and that some formal documentation has been developed for these solicitation planning processes and standards. More important, these solicitation planning processes are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the consistent use of these solicitation planning processes and standards other than on the required contracts (Garrett & Rendon, 2005b).



In order to progress to the next contract management maturity level of structured, solicitation planning processes and standards must be fully established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these solicitation planning processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and solicitation planning documents (Garrett & Rendon, 2005b). These process improvement initiatives should include Solicitation Planning activities such as determining procurement method (FAR Part 12, 13, 14, and 15), documenting competition environment (FAR Part 6), determining evaluation strategy (FAR Part 12, 13, 14, and 15), determining contract type/incentive (FAR Part 16), determining terms and conditions, and developing solicitation documents (FAR Part 12, 13, 14, and 15; Garrett & Rendon, 2005b).

To accomplish process improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024, SEA 025 and SEA 026, as reflected in Figure 13. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. A database of best practices and lessons learned should be instituted to help NAVSEA achieve the definitive Solicitation Planning maturity level of optimized. Resources should be committed to such things as bag-lunch training sessions that emphasize solicitation planning topics and DAU refresher training. The training should be developed to cover subjects such as developing solicitations, assessing solicitation documents, and developing appropriate criteria for proposal (Garrett & Rendon, 2005b).

3. Solicitation

The enterprise-wide maturity level for Solicitation was assessed at the basic maturity level based on the lowest level of maturity indicated by the survey assessment results for its divisions. A maturity rating of basic indicates that some basic solicitation processes and standards have been established and that some formal documentation has been developed for these solicitation processes and standards. More important, these solicitation processes are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the



consistent use of these solicitation processes and standards other than on the required contracts (Garrett & Rendon, 2005b). In order to progress to the next contract management maturity level of structured, solicitation processes and standards must be fully established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these solicitation processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and solicitation documents (Garrett & Rendon, 2005b). These process improvement initiatives should include solicitation activities such as advertising procurement activities (FAR Part 5), conducting conferences (FAR Part 5, 12, 13, 14, and 15), and amending solicitation documents as required (FAR Part 12, 13, 14, and 15; Garrett & Rendon, 2005b).

To accomplish process improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024, as reflected in Figure 13. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. A database of best practices and lessons learned should be instituted to help NAVSEA achieve the definitive Solicitation maturity level of optimized. Resources should be committed to such things as bag-lunch training sessions that emphasize solicitation topics and DAU refresher training. The training should be developed to cover subjects such as establishing qualified bidders lists, conducting market research, advertising procurement opportunities, and conducting pre-proposal conferences (Garrett & Rendon, 2005b).

4. Source Selection

The enterprise-wide maturity level for Source Selection was assessed at the basic maturity level based on the lowest level of maturity indicated by the survey assessment results for its divisions. A maturity rating of basic indicates that some basic source selection processes and standards have been established and that some formal documentation has been developed for these source selection processes and standards. More important, these source selection processes are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the consistent use of these source selection processes and



standards other than on the required contracts (Garrett & Rendon, 2005b). In order to progress to the next contract management maturity level of structured, source selection processes and standards must be fully established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these source selection processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and source selection documents (Garrett & Rendon, 2005b). These process improvement initiatives should include source selection activities such as evaluating proposals (FAR Part 12, 13, 14, and 15), applying evaluation criteria (FAR Part 5, 12, 13, 14, and 15), negotiating contract terms (FAR Part 12, 13, 14, and 15), selecting a contractor (FAR Part 12, 13, 14, and 15), and managing protests, disputes, and appeals (FAR Part 33; Garrett & Rendon, 2005b).

To accomplish process improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024 and SEA 025, as reflected in Figure 13. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. A database of best practices and lessons learned should be instituted to help NAVSEA achieve the definitive Source Selection maturity level of optimized. Resources should be committed to such things as bag-lunch training sessions that emphasize source selection topics and DAU refresher training. The training should be developed to cover subjects such as proposal evaluation and evaluation criteria, evaluation standards, estimating techniques and weighting systems, and negotiation techniques, planning, and actions (Garrett & Rendon, 2005b).

5. Contract Administration

The enterprise-wide maturity level for Contract Administration was assessed at the basic maturity level based on the lowest level of maturity indicated by the survey assessment results for its divisions. A maturity rating of basic indicates that some basic contract administration processes and standards have been established and that some formal documentation has been developed for these contract administration processes and standards. More important, these contract administration processes are not fully established, not fully institutionalized, and not fully mandated throughout the



organization. There is no organizational policy requiring the consistent use of these contract administration processes and standards other than on the required contracts (Garrett & Rendon, 2005b). In order to progress to the next contract management maturity level of structured, contract administration processes and standards must be fully established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these contract administration processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract administration documents (Garrett & Rendon, 2005b). These process improvement initiatives should include contract administration activities such as monitoring and measuring contractor performance (FAR Part 42 and 46), managing contract change process (FAR Part 43), and managing contractor payment process (FAR Part 30, 31, and 32; Garrett & Rendon, 2005b).

To accomplish process improvement, the NAVSEA enterprise should use industry best practices by applying their use throughout the organization. A database of best practices and lessons learned should be instituted to help NAVSEA achieve the definitive Contract Administration maturity level of optimized. Resources should be committed to such things as bag-lunch training sessions that emphasize contract administration topics and DAU refresher training. The training should focus on areas of conducting integrated assessments of contractor performance, such as integrated cost, schedule, and performance evaluations. Specific topics should include managing contractor changes, processing contractor invoices and payments, managing contractor incentives and award fees, and managing subcontractor performance (Garrett & Rendon, 2005b).

6. Contract Closeout

The enterprise-wide maturity level for Contract Closeout was assessed at the ad hoc maturity level based on the lowest level of maturity indicated by the survey assessment results for its divisions. A maturity rating of ad hoc indicates that some basic contract closeout processes and standards have been established and used within the organization, but they are applied only on an ad hoc and sporadic basis. Organizational managers are not held accountable for adhering to, or complying with, any contract closeout processes or standards. But, more important, these contract closeout processes



are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the consistent use of these contract closeout processes and standards other than on the required contracts (Garrett & Rendon, 2005b). In order to progress to the contract management maturity level of structured, contract closeout processes and standards must be fully established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these contract closeout processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract closeout documents (Garrett & Rendon, 2005b). These process improvement initiatives should include contract closeout activities such as verifying contract completion (FAR Part 42), verifying contractor compliance (FAR Part 42), ensuring contract completion documentation (FAR Part 4), and making final payment (FAR Part 42; Garrett & Rendon, 2005b).

To accomplish process improvement, the NAVSEA enterprise should use industry best practices by applying their use throughout the organization. A database of best practices and lessons learned should be instituted to help NAVSEA achieve the definitive Contract Closeout maturity level of optimized. Resources should be committed to such things as bag-lunch training sessions that emphasize contract closeout topics and DAU refresher training. The training should focus on subjects such as contract termination, closeout planning and considerations, and closeout standards and documentation (Garrett & Rendon, 2005b).

A structured maturity level should be considered the minimum level of process maturity. Only when the organization has achieved a structured level in any key process area can it hope to achieve a higher maturity level (integrated or optimized). Thus, the importance of having contract management processes that are established, institutionalized, documented, and mandated within the organization is critical.

In addition to assessing NAVSEA's contract management process maturity, we did an assessment to see if there was a link between the results of the contract management maturity assessment and the results of recent peer reviews conducted on NAVSEA. The assessment was categorized by the six phases of the contract



management process.

F. PEER REVIEWS

In September 2008, the director of Defense Procurement, Acquisition Policy, and Strategic Sourcing implemented a policy for peer reviewing contracts for supplies and services. The objectives of a peer review are threefold: 1) to ensure that contracting officers across the department are implementing policy and regulations in a consistent and appropriate manner, 2) to continue to improve the quality of contracting processes across the department, and 3) to facilitate cross-sharing of best practices and lessons learned across the department (Assad, 2008). We reviewed and categorized the results of several peer reviews performed on NAVSEA by the six phases of the contract management process. Table 10 shows the six phases of the contract management process, the number of recommendations made by peer review teams, and the percentage of total recommendations. The goal was to see if the results of the peer reviews had any relationship to the results of the contract management maturity assessment.

Table 10. Results from Peer Reviews

| Six Phases of the Contract Management Process | Number of Recommendations Made by Peer Review Teams | Percentage of Total Recommendations |
|--|--|--|
| Procurement Planning | 3 | 2% |
| Solicitation Planning | 11 | 9% |
| Solicitation | 85 | 65% |
| Source Selection | 20 | 15% |
| Contract Administration | 11 | 9% |
| Contract Closeout | 0 | 0% |
| | | |
| Total Recommendations | 130 | 100% |

1. Procurement Planning

Because of the limited number of Procurement Planning recommendations, we could not establish a connection between the results of the CMMAT and the peer review recommendations. Table 11 shows examples of a few of the recommendations made by the peer review teams, which made up only 2% of the total recommendations. NAVSEA SEA 02 was rated at the basic maturity level for Procurement Planning, and the lack of peer review responses could be attributed to the fact that there are some basic



procurement planning processes and standards established within the organization. As previously stated, training should be developed to cover subjects such as funds availability, preliminary cost and schedule estimates, quality management plans, cash flow projections, work breakdown structures, program management and risk management, manpower resources, selecting the appropriate contract type, conducting assessments of market conditions, risk management, and developing standard and unique contract terms and conditions (Garrett & Rendon, 2005b).

Table 11. Examples of Procurement Planning Peer Review Recommendations

| |
|--|
| The Navy shall modify the Acquisition Strategy to facilitate the use of incentive fees, vice award fees, wherever it may be feasible and appropriate to establish objective measures of cost, schedule, and performance against which to measure contractor execution of contract requirements. |
| Time span historically associated with each technical insertion is about four years, and the acquisition team believes they need an eight-year contract to cover two technical insertion cycles in a competitive environment. However, because the cycles overlap, the Peer Team questions the need for eight years, which may have the unintended consequence of minimizing future competition. |

2. Solicitation Planning

There is a weak connection between the results of the CMMAT and the peer review recommendations. Table 12 shows examples of a few of the recommendations made by the peer review teams, which made up only 9% of the total recommendations. NAVSEA SEA 02 was rated at the basic maturity level for Solicitation Planning. The connection could not be entirely validated, as SEA 022 is the only division operating at the basic maturity level. As previously stated, it is recommended that training be held that can address such deficiencies as illustrated in Table 12 and that can leverage the best practices of SEA 024 as they are operating at the integrated maturity level. Training topics that can be developed are developing solicitations, assessing solicitation documents, and developing appropriate criteria for proposal (Garrett & Rendon, 2005b).



Table 12. Examples of Solicitation Planning Peer Review Recommendations

| |
|---|
| Consider providing a technical library so that offerors other than the incumbent who has done this work for the past 15 years have access to some information about the requirements, the historical scope of the work, the places of performance and duration without providing proprietary or classified information. |
| Clarify the relationship between Contract Line Item Numbers (CLINs), Contract Data Requirements Lists (CDRLs), and the related requirements in Section C Statement of Work (SOW). Recommend that the SOW highlight applicability to each CLIN and SOW paragraphs map to CDRLS. |

3. Solicitation

There is a strong connection between the results of the CMMAT and the peer review recommendations. Solicitation had the largest percentage of recommendations, which was 65%, and Table 13 shows examples of a few of those recommendations. The connection is validated because only SEA 024 is operating at the structured level of maturity, and SEA 022, SEA 025, and SEA 026 are operating at the basic level of maturity. This indicates that solicitation processes and standards are not fully established, not institutionalized, and not mandated throughout the entire organization. Senior management will need to get involved by providing guidance and direction. As previously stated, it is recommended that training be held that addresses the following training topics: developing an integrated approach to establishing qualified bidders lists, conducting market research, advertising procurement opportunities, and conducting pre-proposal conferences (Garrett & Rendon, 2005b); they should also leverage the best practices of SEA 024 because they are operating at the structured level of maturity.

Table 13. Example of Solicitation Peer Review Recommendations

| |
|---|
| Consult legal counsel; this paragraph may not be applicable to this solicitation. If deleted, delete from the solicitation documents as well. |
| List of subcontractors: Clarify what the team is trying to accomplish with this paragraph-major subcontractors? First tier subcontractors? |
| Organizational Conflicts of Interest (OCI), as written, implies that OCI may lead to ineligibility for award. Consider including the opportunity for offerors to identify potential OCIs and provide mitigation plans for PCO review. |

4. Source Selection

There is a strong connection between the results of the CMMAT and the peer review recommendations. Source Selection had a large percentage of the recommendations, which was 20%, and Table 14 shows examples of a few of those



recommendations. The connection is validated as only SEA 024 is operating at the integrated level of maturity; SEA 025 is operating at the structured level of maturity; and SEA 022 and SEA 026 are operating at the basic level of maturity. This indicates that source selection processes and standards are not fully established, not institutionalized, and not mandated throughout the entire organization. Senior management will need to get involved by providing guidance and direction. As previously stated, it is recommended that training be held that addresses the following training topics: proposal evaluation and evaluation criteria, evaluation standards, estimating techniques and weighting systems, negotiation techniques, planning, and actions (Garrett & Rendon, 2005b); they should also leverage the best practices of SEA 024 because they are operating at the integrated level of maturity.

Table 14. Example of Source Selection Peer Review Recommendations

| |
|--|
| Commit to using a secure location to store proposals—it is not spelled out in the Source Selection Plan (SSP). |
| Adjectival Language—standardize the language. |
| Consider involving an attorney in providing the instructional in-brief/ethics brief/evaluator training. |

5. Contract Administration

There is a weak connection between the results of the CMMAT and the peer review recommendations. Table 15 shows examples of a few of the recommendations made by the peer review teams, which made up only 9% of the total recommendations. NAVSEA SEA 02 was rated at the basic maturity level for Contract Administration. The connection was validated because all four divisions are operating at the basic level of maturity. We also found a connection in the review of the recent application of CMMM through various DoD agencies consistently showing weaknesses in the Contract Administration process area. Contract Administration showed a pattern of low maturity rating among the six contract management process areas in previous Naval Postgraduate School master’s theses studies (Burton, 2007; Jackson, 2007; Kovack, 2008; Ludwig & Moore, 2006; Shameem, 2007; Sheehan, Moats, & VanAssche, 2007). Also, a recent IG report discussed DoD contract administration deficiencies and determined that the DoD lacked oversight and had inadequate surveillance plans for its contracts. Out of the 142 reports that were reviewed, 55 of the reports identified the lack of oversight and



inadequate surveillance plans. It is recommended that the following FAR regulations, which address oversight and surveillance, be added to the training curriculum: FAR 4.803(b), Contract Administration Office; FAR 16.301-3(a)(2), Limitations; FAR 42.101, Contract Administration and Audit Services; FAR 46.103, Contracting Officer Responsibilities; FAR 46.401(a), Government Contract Quality Assurance; and DFARS 201.6, Contract Authority and Responsibilities (Burton, 2007).

Table 15. Example of Contract Administration Peer Review Recommendations

| |
|---|
| Inconsistent award fee period—need to make it consistent and ensure consistency throughout. |
| As written, the plan is generic and nonspecific; it uses entirely subjective criteria. The acquisition team agreed it was very top level and that they would revise it. |

6. Contract Closeout

Because there were no contract closeout recommendations, we could not establish a connection between the results of the CMMAT and the peer review recommendations. NAVSEA SEA 02 was rated at the ad hoc maturity level for Contract Closeout, which could be a reason for the lack of peer review responses. An ad hoc maturity rating indicates that some basic contract closeout processes and standards have been established and are used within the organization, but they are applied only on an ad hoc and sporadic basis. Organizational managers are not held accountable for adhering to, or complying with, any contract closeout processes or standards. But, more important, these contract closeout processes are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the consistent use of these contract closeout processes and standards other than on the required contracts (Garrett & Rendon, 2005b).

We did find a connection in the review of the recent application of CMMM through various DoD agencies consistently showing weaknesses in the Contract Closeout process area. Contract Closeout showed a pattern of the lowest maturity rating among the six contract management process areas in previous Naval Postgraduate School master’s theses studies (Burton, 2007; Jackson, 2007; Kovack, 2008; Ludwig & Moore, 2006; Shameem, 2007; Sheehan et al., 2007). This phenomenon is most likely attributable to the shrinking contracting workforce, tied with the increase in workload. NAVSEA SEA 02 is most likely allotting available limited resources to confront more



pressing issues and requirements, to the detriment of the Contract Closeout process. As previously stated, training should be developed that addresses such topics as contract termination, closeout planning and considerations, and closeout standards and documentation (Garrett & Rendon, 2005b).

There are some areas in which the relationships are strong and some areas in which they are not as strong. We recommend that NAVSEA SEA 02 leverage the best practices of the divisions that are operating at the higher levels of maturity and implement the recommended training to achieve the definitive maturity level of optimized.

In addition to assessing whether there is a link between the results of the contract management maturity assessment and the results of recent peer reviews conducted on NAVSEA, we identified critical success factors in NAVSEA contracting that will aid in NAVSEA's pursuit to execute its mission successfully.

G. CRITICAL SUCCESS FACTORS

The Contract Management Maturity Assessment Tool included an open-ended question to assess critical success factors needed by NAVSEA SEA02 in order to perform its mission successfully. The method was modeled from previous assessments given at various DoD contracting agencies. Among them were U.S. Transportation Command (TRANSCOM), U.S. Navy Command Fleet Industrial Supply Center (COMFISC), Army Contracting Command Joint Munitions & Lethality Contracting Center (ACC JM&L), and Army Contracting Command National Capital Region Contracting Center (ACC NCR), to name a few (Rendon, 2010). The survey was developed for the four divisions discussed in the previous sections. Table 16 shows, for each division, the number of actual responders and the number of actual responses. Of the total 112 eligible survey participants, 62 completed the survey, generating a response rate of approximately 55%. The 62 survey participants submitted a total of 153 responses to the open-ended question on critical success factors.



Table 16. Results from Critical Success Factors

| Division | Number of Responders | Number of Responses |
|--------------|----------------------|---------------------|
| SEA 022 | 16 | 22 |
| SEA 024 | 9 | 18 |
| SEA 025 | 21 | 71 |
| SEA 026 | 16 | 42 |
| | | |
| Total | 62 | 153 |

The responses to the survey question were analyzed to determine similarities and, based on the analysis, were grouped into eight categories. Table 17 provides the ranking of the critical success factor categories along with the percentage of the responses.

Table 17. Ranking of Critical Success Factors

| Category | Number of Responses | Percent of Responses |
|---------------|---------------------|----------------------|
| Workforce | 50 | 33% |
| Relationships | 23 | 15% |
| Leadership | 20 | 13% |
| Resources | 17 | 11% |
| Processes | 15 | 10% |
| Policies | 12 | 8% |
| Other | 10 | 7% |
| Requirements | 6 | 4% |
| | | |
| Total | 153 | 100% |

The qualitative content analysis provided the following insights on critical success factors for the NAVSEA contracting divisions.

Workforce (33%)

The Workforce category reflects the largest percentage of survey responses. Common responses included statements related to having an adequate number of personnel, job rotation, continuous hiring and recruitment of personnel, and a trained, experienced, and competent workforce.

Also included in this category were responses related to the need to attract top college graduates and ensuring that all personnel are trained in the Standard Procurement System (SPS).



Other common responses related to the promotion of deserving personnel, increasing workforce stability, the mentoring of interns and junior-level personnel, and the empowerment of employees.

The Workforce category constituted 50 of the 153 responses. Of these 50 responses, this category could be broken into subcategories of training (14 responses), professional development (7 responses), organizational (6 responses), and experience (5 responses), as reflected in Table 18. Table 19 provides a sample of survey responses related to this category.

Table 18. Workforce Responses

| | | |
|-------------------|-----------|-------------|
| Workforce | 18 | 36% |
| Training | 14 | 28% |
| Professional Dev. | 7 | 14% |
| Organizational | 6 | 12% |
| Experience | 5 | 10% |
| Total | 50 | 100% |



Table 19. Workforce Sample Survey Responses Workforce

| |
|---|
| Workforce |
| A trained work force |
| Dedicated mentors/trainers for interns (not PCOs) |
| Detailed, division specific training |
| PCO's and managers need mandatory training in new systems (i.e., SPS) |
| Train the Trainer courses for PCOs and supervisors |
| Experienced/Effective Staff |
| Well-trained, experienced workforce |
| Motivated/competent workforce |
| NAVSEA must attract top-level college graduates |
| NAVSEA must develop strategy to retain exceptional employees |
| Adequate training for contracting professionals |
| Additional personnel to allow time for on-the-job training |
| Collaboration |
| Educated personnel |
| Hire the right people |
| Knowledgeable personnel |
| Knowledgeable program personnel |
| Knowledgeable senior management with insight into workforce |
| Knowledge of the acquisition planning requirements |
| Program Office personnel well trained in acquisition documentation requirements |
| Qualified personnel |
| Retention of employees |
| Workforce stability |
| Intern pipeline |
| Sufficient staff |
| More specialized technical experience |
| Improve hiring process—takes too long |
| Equal utilization of the interns—currently some are underworked while others are overworked |
| Building an experienced acquisition team |
| Rotate contract specialist to the field |
| Maintaining the teaching environment |
| Need more contracts and program personnel to monitor performance |

Relationships (15%)

The survey results provided 23 of the 153 responses related to the Relationships category. Responses within this category included statements concerning cooperation among acquisition team members and end users, coordination and support from program offices, good working relationships with contractors, trust, and collaboration.

This category had responses related to communication that included open communication, communication at all levels, and communication from higher



headquarters. Teaming was another area, including responses relating to promoting teamwork, team focus, being a team player, and teaming with customers. Customers were also highlighted through responses related to having a customer focus, supporting the customer, and understanding customer needs. Table 20 provides a sample of survey responses to this category.

Table 20. Relationship Sample Survey Responses

| |
|--|
| Relationships |
| Communicating with the customer |
| Communication |
| Communication |
| Communication with customers and other organizations |
| Capable, far-sighted leadership |
| Cooperate within your organization and between all organizations; don't say no |
| Cooperation |
| Cooperation with Program Office |
| Cooperative customers |
| Better acquisition team integration/collocation |
| Effective team work between PMO and PCO |
| Teamwork |
| Better collaboration between SEA 02, PMOs, and CAOs |
| Good communication |
| Let everyone know where their work fits |
| Don't assume people know things they may not know |

Leadership (13%)

The Leadership category accounted for 20 of the 153 responses. These responses were all related to the need for consistent, clear leadership and management support, comprehensive decision-making, less micro-management, and people-oriented management. This category also included responses related to recognition of and support of contracting officers, and the need to hold contractors accountable. Table 21 provides a sample of survey responses related to this category.



Table 21. Leadership Sample Survey Responses

| |
|---|
| Leadership |
| Adequate leadership |
| Delegate authority down to lower levels |
| Devolve authority |
| Engagement |
| Less micro-management, less interference in PCO functions |
| Oversight |
| Contract administrators |
| Contract management |
| Contractor management |
| Consistent, clear direction from management |
| Hold contractors accountable |
| Senior leadership support |
| Comprehensive decisions when impacting contracts |
| Management support of PCO/Specialist decisions |

Resources (11%)

The Resources category consisted of 17 of the 153 responses. The responses in this category included a variety of resources needed in the contracting process such as automated contract writing systems, contract tracking tools, and other information technology resources. Also included in this category were equipment, supplies, and technical support. Table 22 provides a sample of survey responses related to this category.



Table 22. Resources Sample Survey Responses

| Resources |
|---|
| Advanced customer acquisition planning |
| Customer support |
| Functional IT systems |
| Sufficient resources |
| Time to do procurement |
| Efficiency |
| Flexible procurement systems |
| Useable contract writing system |
| Up-to-date information |
| Use of lessons learned to stop repeating ineffective behavior |
| Tools that work (software applications, websites, etc.) |
| NAVSEA Program Offices must become less reliant on contractor support |

Processes (10%)

The Process category constituted 15 of the 153 responses. Responses included statements related to having documented, thorough, consistent, efficient, effective, and integrated contracting processes. Also included in this category were responses regarding the timeliness of requests as well as the need for better planning and prioritization of contract actions. Table 23 provides a sample of survey responses related to this category.

Table 23. Processes Sample Survey Responses

| Processes |
|---|
| Consistent application of procedures |
| Increased integration with fleet requirements |
| Industry recognition of a return to acquisition rigor |
| Integration across procurement systems |
| Timely procurement requests |
| Planning instead of impulsive actions |
| Prioritization of contract actions in conjunction with PEOs |
| Continuous improvement |
| Thorough and complete documentation |
| Program management |
| Attention to detail |
| Executable program budgets that match requirements |



Policies (8%)

The Policies category constituted 12 of the 153 responses. This category included responses such as standardized, clearly defined, uniform guidance, directions, and regulations. This category also included better organization of headquarters policies and the streamlining of processes and policies. Also included in this category were responses related to having realistic milestones and goals. Table 24 provides a sample of survey responses related to this category.

Table 24. Policies Sample Survey Responses

| Policies |
|---|
| Organization of policy documents and a better way to access/search it |
| Policy |
| Well-understood business processes |
| Clearly defined procedures |
| Standardization |
| Streamlined processes |
| Uniformity |
| Faster promulgation of new rules/regs |
| No more monthly milestone reporting on deals < \$1 million |

Requirements (4%)

Respondents provided 6 of the 153 responses within the Requirements category. The Requirements category consisted of statements related to complete, clear, defined procurement requirements; well-written statements of work (SOW), and incorporating realistic work definition requirements. Also included was a need to better understand (PR) requirements. Table 25 provides a sample of survey responses related to this category.

Table 25. Requirements Sample Survey Responses

| Requirements |
|---|
| Define the requirement |
| Define specifications/SOWs |
| Incorporating realistic work definition requirements |
| More clearly defined roles between contracts and program management |
| Understanding PR requirements |



The responses by NAVSEA 02 contracting professionals to the open-ended question were consistent with the research recently presented by Rendon (2010) on critical success factors conducted on DoD contracting agencies such as Army Contracting Command Aviation and Missile Command Contracting Center (ACCAMCOM), U.S. Special Operations Command (USSOCOM), and Department of Defense Educational Activity (DoDEA). The responses suggest that NAVSEA should focus on the common knowledge areas and processes impacting contract management by addressing the critical success factors of Workforce, Processes, Relationships, Resources, Leadership, and Policies (Rendon, 2010).

H. SUMMARY

In this chapter, we discussed the administration of the CMMAT survey. We presented the CMMAT results from NAVSEA SEA 02 divisions, and we calculated the contract management process maturity ratings to determine each division's maturity level. We also used the contract management process maturity level of each NAVSEA SEA 02 division to determine the overall contract management maturity. Additionally, we provided recommendations for improving the contract management process maturity of each key process area, and we also identified whether peer reviews had any connection to the contract management maturity assessment. Finally, we provided an analysis of the responses to the open-ended question on critical success factors. Chapter V will provide a summary of this research report, our research conclusion, and areas for further research.



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V. SUMMARY, CONCLUSION, AND AREAS FOR FURTHER RESEARCH

A. INTRODUCTION

In this chapter, we summarize the research we conducted at NAVSEA. We provide a conclusion to the CMMM assessment of the NAVSEA contracting organization. In this chapter, we also conclude the research on peer reviews and critical success factors in NAVSEA contracting. Finally, in this chapter, we provide areas for further research.

B. SUMMARY

The purpose of this research was to assess the maturity of NAVSEA's contract management processes. This research highlighted Mr. Ashton B. Carter's challenge to the DoD to look within itself for methods and ways to "do more without more." This research employed an assessment method that DoD organizations can apply to their contracting processes to determine their current levels of process maturity and to provide a roadmap for process improvement. Many organizations use a process improvement approach that incorporates assessing process maturity; thus, they are using maturity models to assess process maturity as a way to improve their processes. There are a multitude of maturity models available, and this research used the CMMM to assess the contract management process maturity level of NAVSEA.

An overview of the NAVSEA contracting organization was also discussed. The research also identified that the procurement process and metrics utilized by NAVSEA is an electronic milestone procurement system. When NAVSEA establishes a milestone, a criticality rating is assigned numbering 1–4. This research also reviewed and categorized the results of several peer reviews performed on NAVSEA by the six phases of the contract management process. Finally, the research also analyzed and categorized the open-ended responses to the question on critical success factors collected in the CMMAT online survey conducted on NAVSEA contracting personnel. The next section will discuss the research conclusions.



C. CONCLUSION

The conclusions of this research will be discussed in terms of our research questions:

1. **At What Level of Contract Management Maturity Are the Contracting Processes at the NAVSEA Contracting Directorate?**

The maturity levels of the contracting divisions at NAVSEA SEA 02 were presented in Chapter IV. The overall NAVSEA SEA 02 key process areas of Procurement Planning, Solicitation Planning, Solicitation, Source Selection, and Contract Administration were assessed at the basic maturity level. At the basic level of maturity, some basic contract management processes and standards have been established and some formal documentation has been developed for these contract management processes and standards. More important, these contract management processes are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the consistent use of these contract management processes and standards other than on the required contracts. In order to progress to the maturity level of structured, contract management processes and standards must be fully established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these contract management processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents.

Additionally, the Contract Closeout key process area was assessed to be at the ad hoc maturity level. A maturity rating of ad hoc indicates that some basic contract management processes and standards have been established and used within the organization, but they are applied only on an ad hoc and sporadic basis. Organizational managers are not held accountable for adhering to, or complying with, any contract closeout processes or standards. More important, these contract management processes are not fully established, not fully institutionalized, and not fully mandated throughout the organization. There is no organizational policy requiring the consistent use of these contract management processes and standards other than on the required contracts. In



order to progress to the next contract management maturity level of structured, contract management processes and standards must be fully established, must be institutionalized, and must be mandated throughout the entire organization. Formal documentation must be developed for these contract management processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents.

2. How Can the Results of the Study be Used for Contract Management Process Improvement at NAVSEA?

The CMMAT survey results listed in Chapter IV provide process improvement recommendations. Procurement Planning was assessed at the basic maturity level, and in order to get to structured, the next level of contract management maturity, it is recommended that these process improvement initiatives should include procurement planning activities such as market research, acquisition planning, stakeholder analysis, and requirements analysis. To accomplish process improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024 and SEA 025. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. Resources should be committed to such things as bag-lunch training sessions that emphasize procurement planning topics and a DAU refresher training. The training should be developed to cover subjects such as funds availability, preliminary cost, and schedule estimates, quality management plans, cash flow projections, work breakdown structures, program management and risk management, manpower resources, selecting the appropriate contract type, conducting assessments of market conditions, risk management, and developing standard and unique contract terms and conditions.

Solicitation Planning was assessed at the basic maturity level, and in order to progress to the next contract management maturity level of structured, it is recommended that these process improvement initiatives should include solicitation planning activities such as determining procurement method, documenting competition environment, determining evaluation strategy, determining contract type/incentive, determining terms and conditions, and developing solicitation documents. To accomplish process



improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024, SEA 025, and SEA 026. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. Resources should be committed to such things as bag-lunch training sessions that emphasize solicitation planning topics and DAU refresher training. The training should be developed to cover subjects such as developing solicitations, assessing solicitation documents, and developing appropriate criteria for proposal.

Solicitation was assessed at the basic maturity level, and in order to progress to the next contract management maturity level of structured, it is recommended that these process improvement initiatives should include solicitation activities such as advertising procurement activities, conducting conferences, and amending solicitation documents as required. To accomplish process improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. Resources should be committed to such things as bag-lunch training sessions that emphasize solicitation topics and DAU refresher training. The training should be developed to cover subjects such as developing an integrated approach to establishing qualified bidders lists, conducting market research, advertising procurement opportunities, and conducting pre-proposal conferences.

Source Selection was assessed at the basic maturity level, and in order to progress to the next contract management maturity level of structured, it is recommended that these process improvement initiatives include source selection activities such as evaluating proposals, applying evaluation criteria, negotiating contract terms, selecting a contractor, and managing protests, disputes, and appeals. To accomplish process improvement, the NAVSEA enterprise should leverage the best practices of more mature divisions such as SEA 024 and SEA 025. Through knowledge-sharing initiatives, best practice activities can be shared between the higher rated divisions and the lower rated divisions. Resources should be committed to such things as bag-lunch training sessions that emphasize source selection topics and DAU refresher training. The training should be developed to cover subjects such as proposal evaluation and evaluation criteria,



evaluation standards, estimating techniques and weighting systems, and negotiation techniques, planning, and actions.

Contract Administration was assessed at the basic maturity level, and in order to progress to the next contract management maturity level of structured, it is recommended that these process improvement initiatives include contract administration activities such as monitoring and measuring contractor performance, managing the contract change process, and managing the contractor payment process. To accomplish process improvement, the NAVSEA enterprise should use industry best practices by applying their use throughout the organization. Resources should be committed to such things as bag-lunch training sessions that emphasize contract administration topics and DAU refresher training. The training should focus on areas of conducting integrated assessments of contractor performance, such as integrated cost, schedule, and performance evaluations. Specific topics should include managing contractor changes, processing contractor invoices and payments, managing contractor incentives and award fees, and managing subcontractor performance.

Contract Closeout was assessed at the ad hoc maturity level, and in order to progress to the contract management maturity level of structured, it is recommended that these process improvement initiatives should include contract closeout activities such as verifying contract completion, verifying contractor compliance, ensuring contract completion documentation, and making final payment. To accomplish process improvement, the NAVSEA enterprise should use industry best practices by applying their use throughout the organization. Resources should be committed to such things as bag-lunch training sessions that emphasize contract closeout topics and DAU refresher training. The training should focus on subjects such as contract termination, closeout planning and considerations, and closeout standards and documentation.

3. How Are Peer Reviews Being Utilized Within the Key Process Areas to Improve Existing Contract Management Processes?

The results of the peer reviews in relation to the results of the contract management maturity assessment were varied. A clear correlation could not be made between the key process areas of Procurement Planning, Solicitation Planning, Contract Administration, and Contract Closeout and the results of the peer reviews. These areas



together only made up 20% of the recommendations made by the peer review teams. The key process areas with the clear correlation to the results of the peer reviews were Solicitation and Source Selection, which recommendations made up 65% and 15%, respectively. It is recommended for solicitation process improvement that qualified bidders lists be developed, market research be conducted as well as advertising procurement opportunities, and pre-proposal conferences for solicitation process improvement be conducted. Source selection processes can be improved by providing training for proposal evaluation and evaluation criteria, evaluation standards, estimating techniques and weighting systems, and negotiation techniques, planning, and actions.

4. How Can Results From Our Critical Success Factors Analysis Be Implemented in Process Improvement at NAVSEA?

These research findings suggest that the NAVSEA SEA 02 should focus on the common knowledge areas and processes impacting contract management by addressing the critical success factors of Workforce, Relationships, Leadership, Resources, Processes, and Policies. NAVSEA SEA 02 should consider enhancing the training and education provided to contracting officers, as well as consider integrating organizational structures and processes for managing both personnel and contracts. Because of the direct relationship critical success factors have on an organization's processes and resulting outcomes, NAVSEA should address the critical success factor categories identified in this research in improving its management of contracts.

The findings in this research illustrate the differences in the contract management process maturity among the four NAVSEA SEA 02 divisions. A closer look at the results of each of the NAVSEA SEA 02 divisions shows modest differences in the maturity level of the key contract management process areas of Procurement Planning, Solicitation Planning, Solicitation, Source Selection, Contract Administration, and Contract Closeout. Most notably, all the NAVSEA SEA 02 divisions consistently show that Contract Closeout garners the lowest maturity rating when compared to the other five key process areas. NAVSEA SEA 02, as an organization, operates at basic level of maturity in Procurement Planning, Solicitation Planning, Solicitation, Source Selection and Contract Administration. The basic overall maturity level is the prescribed rating to highlight areas of improvement, as the maturity of the organization is dependent on the weakest



link in the chain. Contract Closeout is NAVSEA SEA 02's least matured process area with an overall maturity rating of ad hoc. This is consistent with the results from the majority of organizations where CMMM was applied.

The present movement in government contracting is doing more without more. This leaves organizations, particularly those whose primary mission it is to support the weapon systems acquisition function, to seek methods that change and improve internal processes. Given all the challenges facing the diverse NAVSEA SEA 02 divisions, NAVSEA SEA 02 should work toward elevating all the NAVSEA SEA 02 divisions to the highest level of contract management process maturity across all the six key process areas to achieve contract management efficiency, customer service enhancement, and organizational aptitude alignment.

D. AREAS FOR FURTHER RESEARCH

It is recommended that NAVSEA SEA 02 perform another assessment within the next few years after process improvement initiatives and recommended training have been implemented and have had the time to take effect.

It is also recommended that the NAVSEA CMMM results be compared with other CMMM assessments within the Navy to see if the NAVSEA contract management maturity levels are similar to other Navy contracting organizations. This comparison of contract management process maturity levels could also be performed for other DoD departments, such as the Army Contracting Command and the Air Force Material Command.



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LIST OF REFERENCES

- Anglin, C. J., & Good, J. D. (2009). *Contract management process and mentorship analysis of United States Special Operations Command's (USSOCOM) special operations acquisition and logistics directorate of procurement (SOAL-K)* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Assad, S. D. (2008). *Peer reviews of contracts for supplies and services*. Washington, DC: Under Secretary of Defense (AT&L).
- Bauer, J. E., Duffy, G. L., & Westcott, R. T. (2006). *The quality improvement handbook*. Milwaukee, WI: ASQ Quality Press.
- Bautista, R. O., & Ward, C. R. (2009). *Analysis of contract management processes at Fleet & Industrial Supply Centers (FISC) worldwide* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Burton, A. N. (2007). *Analysis of the Oklahoma City Air Logistics Center's (ALC) contract management processes* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Canadian International Development Agency (CIDA). (2006, June). *Organizational assessment guide*. Ottawa, Canada: Author.
- Carter, A. B. (2010). *Better buying power: Mandate for restoring affordability and productivity in defense spending* [Memorandum]. Washington, DC: Under Secretary of Defense (AT&L).
- Curtis, B., Hefley, W. E., & Miller, S. A. (2001). *People capability maturity model (PCMM) version 2.0*. Pittsburgh, PA: Carnegie Mellon University, Software Engineering Institute.
- Diamantopoulos, D. (2010, August 5). *NAVSEA electronic milestone system overview*. Washington, DC: Washington Navy Yard.
- Federal Acquisition Regulation (FAR), 48 C.F.R. ch. 1 (2008).
- Garrett, G. A. (2007). *World class contracting* (4th ed.). Riverwoods, IL: Wolters Kluwer.
- Garrett, G. A., & Rendon, R. G. (2005a). *Contract management: Organizational assessment tools*. McLean, VA: National Contracts Management Association.



- Garrett, G. A., & Rendon, R. G. (2005b, September). Managing contracts in turbulent times: The contract management maturity model. *Contract Management*, 48–57.
- Government Accountability Office (GAO). (2006). *DOD vulnerabilities to contracting fraud, waste, and abuse* (GAO-06-838R). Washington, DC: Author.
- Haass, R. N. (1995). Paradigm lost. *Foreign Affairs*, 74(1), 43–58.
- Hamm, . (2005).
- Jackson, C. J. (2007). *Analysis of the 314th Contracting Squadron's contract management capability using the contract management maturity model (CMMM)* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Jeffers, D. T. (2009). *Contract specialist turnover rate and contract management maturity in the national capital region contracting center: An analysis* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Kerzner, H. (2001). *Strategic planning for project management using a project management maturity model*. Hoboken, NJ: John Wiley and Sons.
- Kovack, C. (2008). *Analysis of contracting processes and organizational culture at Naval Air Systems Command* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Kwak, Y. H., & Ibbs, C. W. (2002). Project management process maturity (PM)² model. *Journal of Management in Engineering*, 18(3), 150–155.
- Ludwig, W. S., & Moore, W. L. (2006). *Analysis of Naval Facilities Engineering Command's (NAVFAC) contracting processes using the contract management maturity model (CMMM)* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Naval Sea Systems Command (NAVSEA). (2010a). Chief of Naval Operations organizational chart. Retrieved from <https://www.navsea.navy.mil/organization>
- Naval Sea Systems Command (NAVSEA). (2010b). NAVSEA 101. Retrieved from <https://www.navsea.navy.mil/organization/navsea%201010.aspx>
- Naval Sea Systems Command (NAVSEA). (2010c). Organizational chart. Retrieved from <https://www.navsea.navy.mil/organization/hq.aspx>
- Nordin, A., & Burton, B. (2007). *Analysis of the Oklahoma City Air Logistics Center's (ALC) contract management processes* (Master's thesis, Naval Postgraduate



- School). Retrieved from <http://www.acquisitionresearch.net>
- Rendon, R. G. (2003). *A systematic approach to assessing organizational contract management maturity* (Unpublished doctoral dissertation). Argosy University, Orange County, CA.
- Rendon, R. G. (2010, August 26–28). *Critical success factors in government contract management*. Paper presented at the 4th International Public Procurement Conference (IPPC), Seoul, Korea.
- Shameem, M. (2007). *Evaluation of the contract management process in the United Nations for acquiring peacekeeping operations/services* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Shaver, C. (2010, July 14). *NAVSEA contracting 101*. Washington, DC: Washington Navy Yard.
- Sheehan, B. H., Moats, S. D., & VanAssche, D. J. (2007). *Analysis of the contracting processes and ethical culture at Ogden Air Logistics Center, Hill AFB, UT* (Master's thesis, Naval Postgraduate School). Retrieved from <http://www.acquisitionresearch.net>
- Software Engineering Institute (SEI). (2009). *CMMI for services version 1.2: Improving processes for better services*. Pittsburgh, PA: Author.
- Ward, C. (2010, July 29). *NAVSEA contracting (SEA 02): Who we are and what we do*. Washington, DC: Washington Navy Yard.
- Wysocki, R. K. (2004). *Project management process improvement*. Boston, MA: Artech House.



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2003 - 2010 Sponsored Research Topics

Acquisition Management

- Acquiring Combat Capability via Public-Private Partnerships (PPPs)
- BCA: Contractor vs. Organic Growth
- Defense Industry Consolidation
- EU-US Defense Industrial Relationships
- Knowledge Value Added (KVA) + Real Options (RO) Applied to Shipyard Planning Processes
- Managing the Services Supply Chain
- MOSA Contracting Implications
- Portfolio Optimization via KVA + RO
- Private Military Sector
- Software Requirements for OA
- Spiral Development
- Strategy for Defense Acquisition Research
- The Software, Hardware Asset Reuse Enterprise (SHARE) repository

Contract Management

- Commodity Sourcing Strategies
- Contracting Government Procurement Functions
- Contractors in 21st-century Combat Zone
- Joint Contingency Contracting
- Model for Optimizing Contingency Contracting, Planning and Execution
- Navy Contract Writing Guide
- Past Performance in Source Selection
- Strategic Contingency Contracting
- Transforming DoD Contract Closeout
- USAF Energy Savings Performance Contracts
- USAF IT Commodity Council
- USMC Contingency Contracting



Financial Management

- Acquisitions via Leasing: MPS case
- Budget Scoring
- Budgeting for Capabilities-based Planning
- Capital Budgeting for the DoD
- Energy Saving Contracts/DoD Mobile Assets
- Financing DoD Budget via PPPs
- Lessons from Private Sector Capital Budgeting for DoD Acquisition Budgeting Reform
- PPPs and Government Financing
- ROI of Information Warfare Systems
- Special Termination Liability in MDAPs
- Strategic Sourcing
- Transaction Cost Economics (TCE) to Improve Cost Estimates

Human Resources

- Indefinite Reenlistment
- Individual Augmentation
- Learning Management Systems
- Moral Conduct Waivers and First-tem Attrition
- Retention
- The Navy's Selective Reenlistment Bonus (SRB) Management System
- Tuition Assistance

Logistics Management

- Analysis of LAV Depot Maintenance
- Army LOG MOD
- ASDS Product Support Analysis
- Cold-chain Logistics
- Contractors Supporting Military Operations
- Diffusion/Variability on Vendor Performance Evaluation
- Evolutionary Acquisition
- Lean Six Sigma to Reduce Costs and Improve Readiness



- Naval Aviation Maintenance and Process Improvement (2)
- Optimizing CIWS Lifecycle Support (LCS)
- Outsourcing the Pearl Harbor MK-48 Intermediate Maintenance Activity
- Pallet Management System
- PBL (4)
- Privatization-NOSL/NAWCI
- RFID (6)
- Risk Analysis for Performance-based Logistics
- R-TOC AEGIS Microwave Power Tubes
- Sense-and-Respond Logistics Network
- Strategic Sourcing

Program Management

- Building Collaborative Capacity
- Business Process Reengineering (BPR) for LCS Mission Module Acquisition
- Collaborative IT Tools Leveraging Competence
- Contractor vs. Organic Support
- Knowledge, Responsibilities and Decision Rights in MDAPs
- KVA Applied to AEGIS and SSDS
- Managing the Service Supply Chain
- Measuring Uncertainty in Earned Value
- Organizational Modeling and Simulation
- Public-Private Partnership
- Terminating Your Own Program
- Utilizing Collaborative and Three-dimensional Imaging Technology

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